

# NAHRPP - New Approaches in Harm Reduction Policies and Practices

## Cannabis users' forums on www. Sostanze.info, year 2017

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NAHRPP - New Approaches in Harm Reduction Policies and Practices
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#### **METHODS**

A mixed method analysis has been chosen (Kaló, Móró, Demetrovics, & Felvinczi, 2017), combining Qualitative Analysis (both Netnographic and Thematic Analysis), in order to identify emerging topics (Braun, & Clarke), and Quantitative Text Analysis (Fairclough, 2003), showing the Semantic structure of the same emerging themes. The Quantitative Analysis has been carried out through the software T-LAB (Lancia, 2005; 2012; 2017) for the semantic analysis of texts. The findings from the Netnographic Observations were discussed by a panel of experts.

#### **DATASET**

The dataset consists of forums which began from the input of cannabis users on the website Sostanze.info during the year 2017 and which specifically address cannabis use issues. Following these criteria, 20 forums have been selected. They have been numbered from 1 to 20, and indicated with ID\_01, ID\_02, up to ID\_20.

Each forum has a "label" (TOPIC) related to its content (see Table 1).

FORUM	TOPIC
ID_01	OTHER SUBSTANCES
ID_02	PROBLEMS
ID_03	QUIT
ID_04	QUIT
ID_05	PROBLEMS
ID_06	QUIT
ID_07	LEGALIZATION
ID_08	OTHER SUBSTANCES
ID_09	QUIT
ID_10	QUIT
ID_11	DEPENDENCE
ID_12	PROBLEMS
ID_13	QUIT
ID_14	QUIT
ID_15	ABSTINENCE
ID_16	QUIT
ID_17	FIRST EXPERIENCES
ID_18	PROBLEMS
ID_19	PROBLEMS
ID_20	PASSIVE SMOKING

Table 1. Forums and TOPICS (contents)

#### **Qualitative analysis (Netnographic observations and Thematic analysis)**

#### Coding:

In the analysed forums, the person starting the forum is coded as PUC (Person Using Cannabis), followed by the related number of the forum

The people taking part in the forums are coded with their nicknames followed by the number related to the forum.

#### **Netnographic observations**

"If you feel you need to talk further about your problem, do not hesitate to tell me" (contents of the forums, interpersonal dynamics and actors)

#### Categories

**Questions starting the forum** (subcategories: asking for help in interpreting negative short term effects, asking for help in interpreting and managing abstinence symptoms, sharing experiences, asking for support to change)

- I do not know if I am crazy in attributing all this (the bad symptoms) to a space cake or I should look for deeper reasons (PUC 1);
- I cannot truly understand whether all this is a symptom of my body which is trying to become "healthy" again or I am depressed. What do you think? (PUC 3);
- I have decided to write about my experience..I need to do it, particularly now as I want to quit cannabis, I hope to find words of encouragement and support (PUC 11);
- At the moment I am trying to quit both marijuana and cigarettes ..do you have advice? Especially to improve sleeping? (PUC 14);

**Answers from the participants** (subcategories: support to change, support from peers, professional-style advice)

- Welcome to the club of people willing to change and who are on the right path (Jack di cuori, forum 9);
- We congratulate you for your determination and we invite you not to stop with your efforts. Presently, you have to face a bad challenge and you cannot avoid it, as you can learn from other experiences in this website, but after recovery you will be healthy again and this will be a reward for the present suffering (editorial board of the site, forum 6);
- I am going to help you myself and mine is the help from a person who has been taking drugs for longer than 20 years, staying in treatment and going through periods of intermittent use..(my advice is) to ask for help from some competent professional facility (sugar magnolia forum 10);
- If you have "smoked" intensively for three years and you are one of the cannabis users who has developed dependency (9%), in the following months you will be likely to be affected by some of these problems: anxiety, nervousness, insomnia, irritability and light depression (Jack di cuori, forum 12);

**Aspects related to online communication** (subcategories: anonymity concern, "fake" concern, blaming "topic sliding", positive/negative views on web communication)

• I have asked for a private chat with a professional from sostanze.info.. (but) I am a little suspicious .. I hope they will not trace my name through the email address (PUC 6);

- I really hope this is a joke..you are a humorous guy, aren't you? (Sugar Magnolia, forum 5);
- there are many posts on this site from youngsters willing to "make fun" of the other participants (i.e. they only want to disturb the forum and make a fuss of it)..will you excuse me, but your post has appeared a bit strange to me..(Edy forum 10);
- how can you think I am writing for fun? There are too many people who have talked nonsense in the past, writing pseudo-humorous posts (PUC 20);
- Now, in August 2017, you are answering a post of April 2016? You have "fished" this very old topic and you have highlighted it, though you perfectly know it is a dead topic. I call it sabotage (Sugar Magnolia forum 1);
- "Topic sliding" happens when they create useless threads of discussion or when they "fish" old threads to move back more important topics to the second or third page..but I do not think this is the case because I cannot see what is the use in damaging sostanze.info (Lysander forum 1);
- Stop with internet, do not make questions online, think by yourself and ask for professional treatment and psychotherapy (Sugar Magnolia, forum 10);
- Hey guys, why don't you try to live your life a bit more and stay on the web a bit less? (TirarPuedeMatar forum 17);
- Online exchanges in anonymity were not possible in the past, so you cannot know if some cannabis users suffered from depersonalization syndrome or not (Bacia Milano forum 17);

#### Panel of experts: main results

Participants:

Stefano Bertoletti - Forum Droghe

Patrizia Meringolo – University of Florence – Faculty of Psychology

Grazia Zuffa- La Società della Ragione onlus

Guazzini Andrea - University of Florence - Faculty of Psychology

Stefano Alemanno – Florence Municipality (web consulting manager -sostanze.info)

Federica Gamberale - ASA (counsellor -sostanze.info)

Nicoletta Zocco - Forum Droghe (counsellor - cannabism.fuoriluogo.it

Marco Benadì - ASA( consultant - youngle.it )

On June 13<sup>th</sup> 2018, a panel of experts (both media and drug use experts) met in Florence to discuss the results from the above "netnographic observations".

The term "forum" (as distinguished from "chat") was debated initially, as to whether it should be considered the most appropriate term to identify the threads of discussion analysed in this study. The panel agreed on the term "forum" as the most suitable for this study. "Forum" has been described as an "asynchronous chat" (i.e. a verbal exchange which may extend over time), distinguished from "chat" seen as "synchronous verbal exchange". As can be seen, the difference is related to the extent of the elapsed "inter time" between the question and the reply. A body of psychological studies in web communication points out the importance of the "inter time" variable in the dynamics of the exchanges. The speed of the reaction is related to the relevance of the relationship between the person asking the question and person responding (in short: the more involved I feel in the relationship, the quicker my reply will be).

Focusing on the specific forums in our study, the "inter time" variable has not emerged to be as relevant as expected. This is due to the characteristics of the site Sostanze.info as well as that of the cannabis users starting the forums.

Generally speaking, drug users may be prompted to take part in a web forum either from an individual urge to get information on substances and their effects or for the social dimension - the wish to exchange experiences and to find a community identity with other drug users. Clearly, the "inter time" variable is significant in the latter case, in relation to the relevance of the relationship factor, while it is negligible in the former situation, when cannabis users are simply in search of answers to their problems and have not developed an "in group" identity with the participants in the forum. This seems to be the case in our study: cannabis users appear to be prompted more by their individual needs for information than by the appeal of a social exchange with other users. From this perspective, the topic is much more important than the reaction times among the participants in the forum. Therefore even forums which have been "silent" for a long time may be resumed by a consumer if the topic is of some interest to him/her. Most cannabis users in our study are believed to have reached *Sostanze.info* from Google Search. As one participant in the panel said: "Google is the first forum". This is particularly true for the specific group of cannabis users looking for information on *Sostanze.info*: they are mainly young or very young users, having their first experience with drugs.

It has also been observed that the format "forum" is more suitable to adults, while younger people usually prefer not to take part in the discussion though they may follow it.

This context yields significant consequences regarding the dynamics of communication. In place of a peer to peer horizontal communication, the analysed forums have shown a rather "directive" top-down communication. As from the netnographic observations, some persons offer advice as "quasi - professional" counsellors (see *Jack di cuori*, for example), while others identify themselves as "expert users", meaning that they have extensive experience with drugs other than cannabis and their web identities largely rely on their long lasting relationship with drugs (see *Sugar Magnolia*, for example).

Because of this, as well as because of their continuous attendance on the web, they perform the role of "opinion leaders". They also give advice to younger cannabis users in a top down manner. These experienced users, who have been attending *Sostanze.info* forums for almost ten years, constitute a "closed group" and often show a dismissive attitude towards the young and inexperienced users of "soft" drugs like cannabis ("pivellini" in Italian).

Noticeably, as shown in the above netnographic observations, this top down style of communication is largely accepted by cannabis users, who feel they lack information and training with respect to the substance.

The concern shown in some forums for "trolls" has been discussed in-depth by the panel. In principle, only people with an "in group" identity should have this fear: in so far as they belong to a group, they tend to follow its rules and try to defend it from "sabotage" by trolls. On the other hand, when the "in group" identity is weak, the sabotage of the group is of no concern.

From this perspective, the fear of trolls appears inconsistent with the general character of the forum in this study. It may also be observed that the threat of "trolls" is not a frequent issue. When it appears, it is usually mentioned by members of the above "closed" group.

#### Discussion

The type of questions and the dynamic of online exchanges appear to be strongly related to the characteristics of <a href="www.sostanze.info">www.sostanze.info</a>, a site run by an editorial board of drug addiction professionals where exchanges among users are supervised by the board itself. Also, questions may be directly addressed to drug addiction professionals..

Due to this professional aspect of the site, drug users are more likely to write about inconveniences/problems related to cannabis use than to share positive experiences of enjoyment with the drug. Consequently, professional-style advice is usually appreciated even when offered by persons not qualifying themselves as professionals.

Finally, the fear of "fake" information appears as a concern, usually prompted by complaints about negative effects of cannabis which appear to be inconsistent with the image (and the more common experience) of cannabis as a "light" substance (see for example a post complaining about serious symptoms after a "purino" – joint of pure marijuana- smoked more than one month ago and the above comment by Sugar Magnolia, forum 5, who suspects a "fake").

#### **Thematic Analysis**

Four main themes were identified:

- Theme 1: *I started to smoke marijuana regularly when I was 16* (initiation of use, patterns and trajectories of use, social representation of the substance)
- Theme 2: *I feel uncomfortable* (short term negative effects)
- Theme 3: Only at that moment I realized I was dependent on cannabis (dependency)
- Theme 4: I gave up smoking (cannabis) one month ago (strategies of recovery and the steps towards abstinence)

#### Theme 1. Initiation of use, patterns and trajectories of use, social representation of the substance

Categories

**Substance** (subcategories: potency, adulterants)

- you cannot compare the present substance from indoor growing ..with the much lighter cannabis we had twenty years ago (BaciaMilano forum 17);
  - the (adulterated) cannabis you can find nowadays is real shit (Anonimo forum 2);

**Set** (subcategories: stress, depression, personal problems as cues to use)

• I have not smoked for some periods (even one or two months), but in the end strong emotions have always pushed me to start again ..I have suffered from depression for one year and more, and the joints have been the only way to survive (PUC 13);

**Setting** (subcategories: social use, using alone)

- Using cannabis has always been a way of connection and friendship, I share many interests and hobbies with my friends (cinema, sport, trekking etc.) and THC has always followed these activities (PUC 15);
- As time was going on, I started to smoke alone..I used to wake up in the night just to smoke and get to sleep again, if I did not smoke I did not have my meals or I did not feel like cooking, so in the end I just cooked fast food (Jhon forum 4);

#### Patterns and trajectories of use (subcategories: daily use, non daily use)

- *I am twenty five and I have used cannabis regularly for ten years..by regular use I mean that I smoke at least one joint every day, before going to bed* (PUC 9);
- *I do not use cannabis every day, I may smoke once or twice a week and in the past I was abstinent even for weeks and sometimes for months (PUC 13);*

**Perceived advantages** (subcategories: no disruption of everyday life, relaxing effect)

• Smoking did not interfere with the thing which was most important to me, the study (PUC 6);

• When I smoke days go by quicker, both when I work and more in general (PUC 4);

**Perceived disadvantages** (subcategories: lack of interests, diminished memory and reduced efficiency, risks related to the illegal status, fear of permanent harm)

- I realized that smoking was depriving me of everything else, when I started to smoke I left the sport I practiced (I was awarded Italian champion twice) and I drastically reduced the time for flirting with girls (PUC 6);
- I have been smoking marijuana for seven years and eventually I am having some problems at school, I have difficulties in concentration and with my vocabulary, which is limited now ..I am worried and I am afraid that the harm may be irreversible, even if I quit cannabis (PUC 10);

**Representation of the substance** (subcategories: soft drug - producing no or little dependence; drug - producing hard dependence, differences/similarities with legal drugs and psychoactive medicines, pathological/not pathological language)

- Stop with these bollocks, marijuana and hashish do not produce dependence..you can smoke as much as you like and then stop immediately (Mon forum 7);
- Don't compare (cannabis) with other drugs, because for these drugs the abstinence is completely different from the abstinence from a soft drug (Thettiker forum 7):
- I stopped taking cannabis and I thought it would be even easier than quitting cigarettes, but I was wrong...don't you believe it, I was a ganja lover and I have always been a full throated advocate of cannabis (PUC 6);
- I have used pure marijuana because I do not want to use tobacco as I believe I am not dependent any longer from it (PUC 6);
- I have always thought that smoking marijuana or hashish has the effect of making you stoned at least, but cigarettes are simply a nasty habit (John forum 4);
  - *I am trying to quit both marijuana and cigarettes* (PUC 14);
- You might consult a psychologist (psychologists do not prescribe medicines like Xanax) while a psychiatrist would likely prescribe you psychoactive medicines that produce dependence (Holden forum 11);
- That's what's happening to you, you have replaced the use/abuse of tobacco/cannabis with a MUCH RISKIER substance (alcohol) (Jack di Cuori forum 4);
- I have been using cannabis **regularly** for ten years, by regularly I mean smoking one joint a day at least (PUC 9);
- I have a **chronic** use of cannabis over several years, with an average use of one joint a day (PUC 15);

#### Theme 2. Short term negative effects

Categories

**Perceived symptoms** (subcategories: hot flushes, feeling like fainting, dizziness, anxiety, insomnia, depression)

- We ate half a space cake. We went to bed and an hour later I had tingling all over my body and hot flushes (PUC 1);

#### Persisting symptoms over time

- Three weeks later (after smoking marijuana) I am still feeling bad. I feel very weak as if Iam not able to wake up completely (PUC 1);
- I smoked four days ago, but I have had anxiety attacks ever since, my heart beats far too fast, I feel dizzy..(PUC 12);

**Interpretation of symptoms** (possibly attributed to the substance - high potency, bad quality, inappropriate mix with other substances; or to an inappropriate mindset; or to the illegal setting of use; or to personal problems other than cannabis use)

- The cannabis you get nowadays has a high level of THC and other components, flavonoids included, it is a totally different substance from the cannabis of a few years ago (TirarPuedeMatar forum 2);
  - Maybe it is crazy to attribute all this (the negative effects) to a space cake, I don't know..(PUC 1);
- While I was having my eighth puff, the police came and that was just what I had feared most..they did not bring any criminal charges against us but I felt very anxious all the same. Probably that was the reason for the bad effect (PUC 5);
- Your problem (the bad effect) is not necessarily related to THC, maybe you are going through a "down" period, you have low blood pressure and you are a little depressed. THC does not cause these problems..try to look for reasons different from the THC intake (Stefy forum 12);
- Do you think the MD assumption is involved (in my problem)? But THC gives me trouble, I believe (PUC 8);

#### Theme 3. Dependency

Categories

**Representation and characteristics of dependency** (subcategories: origin and reasons for dependency, excessive relevance of cannabis in everyday life, physical dependence, psychological dependence, consequences of dependency)

- I have realized that when I spend the evenings with my friends, joints rather than the enjoyment of dancing and meeting people help me to pass the time (PUC 6);
- Though everyone says cannabis does not produce physical dependence, I can tell you for sure that the hot flashes I feel at night are true (PUC 6);
- Smoking joints every night was just a way to run away from a terrible family situation, I have placed more responsibilities on cannabis than it deserved (PUC 6);
- When you stop smoking, you miss it: consequently, when you stop, you get anxious and anxiety has consequences at the somatic level with all the symptoms you are describing. It is a question of mind (Anonymous forum 4);
- Not all the chronic users who quit cannabis have problems, even if they have been using high doses, it is a very subjective thing (Jack di Cuori, forum 19);

**Dependency from other substances, related to cannabis dependency** (subcategories: dependency from tobacco, dependency from alcohol)

- Twelve days before giving up joints I stopped with cigarettes, because in my previous efforts, when I tried to stop with joints, I switched to 30 cigarettes a day (PUC 9);
- (Since I have stopped cannabis) I have realized I drink much more, and, when I drink, I get drunk to the point I do not even remember what I am doing, I lose things (my cell, money, a backpack) and I do not

#### Theme 4. Steps towards change

Categories

**Motivations to change** (subcategories: different priorities other than cannabis use, avoiding risks of illegality, lack of interests, too much money spent on cannabis, other)

- (I want to quit cannabis) because I do not want to waste time .. I do not want to spend my time with uninteresting people I mean my pusher and other stoned people I have to meet to get the substance-(PUC 15);
- I am fed up with the risks of driving downtown with 50 grams of marijuana in my car (Svapo 80 forum 11);
- (I want to quit) because it does not make me happy any longer, it only knocks me out I feel apathetic and detached from the world (PUC 11);

**Objectives and strategies of change** (subcategories: abstinence as a life choice, temporary abstinence, step down, perceived advantages and disadvantages of change)

- The best way is to stop with it drastically and to have therapy, if anxiety symptoms like yours show up (Anonymous forum 4);
  - *I have never thought to quit cannabis completely* (Svapo 80 forum 11);
- I am stepping down, now I smoke about half the amount -3 or 4 joints a day- and I am feeling much better (Svapo 80 forum 11);
- In mid- May, I started to smoke cannabis alone again but I established as a rule not to smoke more than 4 times a week (PUC 6);
- I can describe a long list of very important advantages of stopping with cannabis, even for 3 months only, first of all the number of girls I have dated since—forgive me if I mention this again (PUC 6);
- (After giving up cannabis) I can enjoy the "real" life again, not muffled in a cloud of THC (Nick 92 forum 6);
- The positive side of being abstinent is that I have started to read a lot again and I feel my mind much more active and words do not get stuck in my mouth as it happened when I was stoned (PUC 14);
- (After stopping cannabis) I take very little part in conversations with my friends as I feel silly; previously, though I was stoned, I was nevertheless able to have a normal conversation, now that I am abstinent I feel even worse, I do not know why.. it should be the opposite (PUC 3);
- Since I have stopped with cannabis, I feel out of my mind and this makes me anxious and depressed. I do not recognise myself, my mind does not function as it did before (PUC 4);

**Abstinence syndrome** (presence/absence of the syndrome, symptoms – insomnia, anxiety, depression, feeling bored- interpretation of symptoms, management of symptoms)

- It is very subjective. Some people have no problems after stopping cannabis but others may feel restless, aggressive, tired, bored and have other discomfort (Jack di Cuori forum 16);
- I thought that things would definitely change once I stopped but the following day I had to face hell with moments of serious depression and anxiety both at home and at work (PUC 19;
- Immediately (after quitting) I had problems with sleep..I just cried without control, I feel sad, demotivated, I think negative thoughts with very little hope for the future (PUC 15);
  - Abstinence from cannabis is simply a question of mind, try cocaine and you will realize what the

abstinence syndrome is like (Mon forum 7);

- Can my thoughts (bad mood and negative thoughts) be related to my giving up cannabis I am 40 and I have been smoking cannabis regularly since I was 18? Or shall I have to investigate more in depth on it? (PUC 15);
- Do you think that giving up cannabis after almost 5 years of heavy use can produce this effect (depression and anxiety)? Or is it simply a question of mind as I feel guilty because I haven't achieved much in my life because of using marijuana? (PUC 19);
- (After giving up cannabis) I spend much more time in sports and I am thinking of starting mindfulness meditation (PUC 6);
  - You can beat insomnia either with healthy behaviour or with medicines (Jack di Cuori forum 9);
- I do not want to replace cannabis with medicines though I admit that using cannabis from time to time does not help (PUC 13)

#### **Discussion**

As noted in the netnographic analysis, the topics of forums are evidently connected to the characteristics of the website <a href="www.sostanze.info">www.sostanze.info</a>, supervised by drug addiction professionals. Consequently, users starting the forums are "naturally" in search of help and advice for cannabis related difficulties, both short term negative effects and long term dependency problems. The social representation of cannabis appears to have an impact on the assessment and interpretation of both the unwanted immediate effects of use and of abstinence symptoms, when trying to give up smoking. The cannabis representation swings from the "soft" not- addictive drug to the "addictive" substance. Interestingly, both the representations are quite conventional, because addiction and dependence (or the lack of addiction and dependence) are seen as related to the pharmacological characteristics of the substance only, with little attention to factors of set and setting. In other words, the traditional "pharmacocentrism" of the drug discourse and the conventional concept of addiction as a disease is not challenged by either representations. In addition, the pathological view has an influence on language (see the term "chronic use" instead of regular use). In the end, the opposition between the non-addictive and addictive representations is mitigated by the fact that even believers in the addictive properties of cannabis, nevertheless recognize it to be a "soft" addiction, with "light" abstinence symptoms, which may not even occur in many cases.

Noticeably, the image of cannabis as a "not addictive" substance is particularly advocated by a group of peers, claiming to be hard drugs addicts with personal experience of "real" abstinence symptoms: they tend toward attributing the negative effects to problems other than cannabis use (for example, from Stefy forum 12: Your problem (the bad effect) is not necessarily related to THC, maybe you are going through a "down" period, you have low blood pressure and you are a little depressed).

It is worth noticing that in the effort to recover from addiction, abstinence is the most common objective established by participants. In many cases, abstinence is pursued by moving to less intensive patterns of use. Though abstinence is often considered the "choice" for the future, more moderate patterns of use are appreciated.

As seen, many users show much concern about the negative short term effects, even if they do not appear to be too serious (for example: hot flushes, anxiety etc.). More importantly, many users feel uncertain about the interpretation of symptoms, whether they should be attributed to the substance or not. Many reasons may be argued for this uncertainty. First of all, information about cannabis use and its effects is still limited because cannabis is an illegal drug. This is a significant problem, particularly for young and very young cannabis users (most users frequenting the forums and asking for information about the effects of cannabis belong to this age group, as was noticed by the expert panel). Secondly, we cannot ignore the media reporting about the findings regarding brain research, wrongly presented as evidence of permanent brain damage from cannabis use (see for example: *I am afraid that the harm may be* 

irreversible, even if I quit cannabis (PUC 10).

Nevertheless, the process of cannabis "normalization" is a reality as shown by the "fall of barriers" between legal and illegal drugs. The legal/illegal status of substances is no longer perceived in relation to the health risks, and cannabis is definitely considered as less risky than tobacco and alcohol. The term "smoking" is used indifferently both for cannabis and tobacco and many users decide to give up both substances at once. It can be observed in the long run that the "normalization" process undermines the prohibitionist system, which relies on the assumed socially "unacceptable" risks of illegal drugs, in opposition to the "acceptable" risks of legal psychoactive substances.

#### Semantic analysis

To analyse the emerging themes, a semantic analysis on the whole textual corps of forums has been carried out, in order to synthetically represent all the facets of the narratives coming from the participants in web discussions.

The software T-LAB (version T-LAB plus 2017) has been used, which provides a set of linguistic and statistical tools for content analysis and text mining (Lancia, 2005; 2017). It determines meaningful patterns of keywords (named *lemma*) identifying main emerging themes.

In this contribution, we refer to a specific analysis (i.e., the *Thematic Analysis of Elementary Contexts*) that deals with finding patterns of keywords within the textual corpus, allowing a representation of content through a few significant thematic groupings named *clusters*. They consist of a set of elementary contexts characterised by the same patterns of words.

At any time it is possible to go back to the quotations (i.e. the *contexts*), where the lemmas appear, verifying also their statistical weight in the thematic groupings.

#### The emerging CLUSTERS

The thematic clusters that have been identified include the following: **1. NEGATIVE EFFECTS** (38,7% of the total number of lemmas), **2.SUBSTANCE** (20,2%), **3. SMOKING** (22,2%), as is Figure 1.

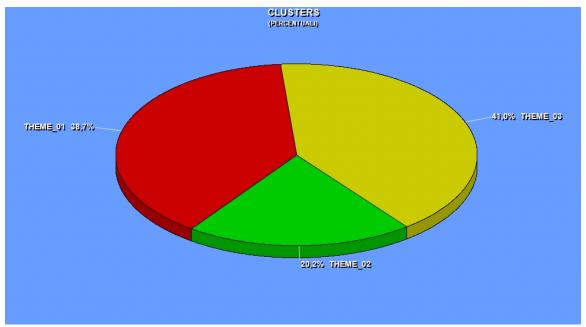


Figure 1. Percentages of key words in the clusters

Using statistical analysis two dimensions were then identified: Factor n.1, which may be named "Normalisation" (x-axis, explained variance 56,44%), which represents – going from left to right – the passage from "normalized" situations, typical in everyday life, to other cases where negative effects related to cannabis use appear, without however indicating a problematic use.

Factor n. 2, which may be named "Problematic use/abuse" (y-axis, explained variance 43,56%), seems related to more/less critical aspects, going from higher severity in the lower quadrants of the Figure 2 (where the Cluster SUBSTANCE may be observed) to a smaller level of negative effects.

The total explained variance of the two factors (x=56,44%, y=43,56%) is very high, and this may demonstrate the statistical fitness of this distribution in the clusters.

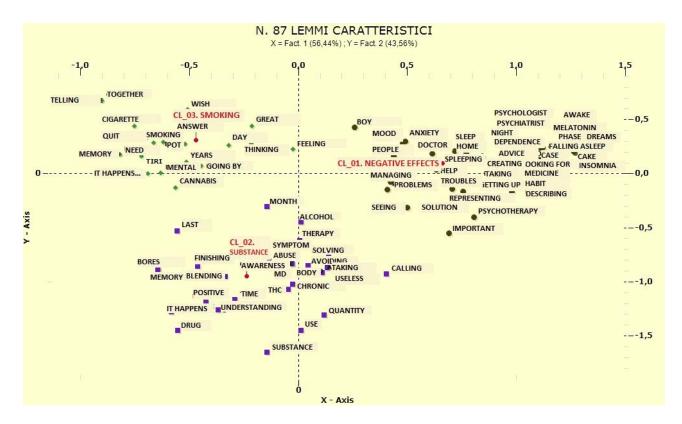


Figure 2. Clusters and lemmas (keywords).

Figure 2 shows the keywords belonging to each cluster in more detail, which better explain their content. It can be observed that **CLUSTER 1. NEGATIVE EFFECTS** groups key words related to problems experienced by the participants and producing issues, especially with regard to *sleeping*, or *anxiety*. **CLUSTER 2. SUBSTANCE** includes not only lemmas identifying substances (*drug*, *MD*, *alcohol*), but also the situations closer to the problematic use or the abuse (such as *chronic*, *abuse*, *symptom*). **CLUSTER 3. SMOKING** seems, on the contrary, more closer to everyday life and recreational events (so we may talk about "normalization"), such as *cigarette*, *pot*, *together*, *telling*, *thinking*, and also *quit*.

In order to appreciate the results in greater detail, the following figure (Figure 3) may be observed. Here "typical" words from each thematic cluster are listed. In Figure 3 the (higher or lower) frequency of the words in their specific cluster is indicated, which is different from Figure 2.

It is possible to notice, once again, the Cluster NEGATIVE EFFECTS is focused on sleeping problems.

CLUSTERS	KEY WORDS (LEMMA)	FREQUENCY (in the cluster)
CLUSTER 1. PROBLEMS	LOOKING FOR	34
	INSOMNIA	31
	AWAKE	31
	ADVICE	30
	SPLEEPING	29
	CASE	28
	MEDICINE	27
	HELP	24
	TAKING	20

	PSYCHIATRIST	20
CLUSTER 2. SUBSTANCE	SUBSTANCE	138
	TIME	79
	USE	75
	UNDERSTANDING	50
	SYMPTOM	29
	THC	25
	DRUG	21
	TAKING	19
	POSITIVE	19
	IT HAPPENS	13
CLUSTER 3. SMOKING	SMOKING	101
	QUITTING	56
	CIGARETTE	29
	ANSWER	22
	DAY	21
	YEARS	21
	CANNABIS	19
	POT	11
	TOGETHER	10
	TELLING	10

Figure 3 Typical words in each thematic cluster

#### **Discussion**

The mixed-methods analysis, due to its complex design, provides a vivid picture of the discussions that occurred in the forums, from which useful implications can be drawn to plan suitable interventions and policies.

We can observe that the main characteristics emerging from the semantic analysis are similar to those derived from the thematic analysis, and this may strengthen the plausibility of the research carried out.

#### References

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