CANNABIS AND PSYCHOSIS AWARENESS PROJECT

A Pan-Canadian Study of Youth Experiences

AUGUST 2011

Katherine M. Boydell, PhD

Catherine Willinsky, MHSc

Natalie Baker, MSc

Cristina Boydell, MSc

We are youth with psychosis
What we want to expose is
A few things we found
About the ups and the downs
Of smoking marijuana
Check it out if you wanna know what the research shows

Psychosis and the marijuana role
Is it something we can control?
Uncertainty on the development
So many different elements
It's hard for us to think…
What exactly is the link?

Some of us say it was a trigger
A lot of us feel it made our symptoms bigger
And more intense
Things got pretty scary and stopped making sense
So we took pills to make it stop
Then smoking on top
But it messes with our meds
Not to mention our heads

Rollercoaster rides inside the mind
Each on their own track of divine
Feeling fine on the high incline
But for some of us there's a down in design

Living with psychosis is already tough
Smoking weed on top of all this
Made me say enough!

Masquerade masks made of smoke
To hide the cold truths inside a straight coat
The real problem is the one you didn't know
Psychosis is the real water that makes your
Thought river flow
So we didn't even think
To begin to seek help
Because pot covered the symptoms
We just couldn't tell
Whether you smoke pot or not
If chaos overtakes your thoughts
And you start to think it will never stop
Go talk to someone that you trust
Believe us, it can help a lot

(Poem co-created at Youth Workshop, Toronto, March 2011)

MAIN MESSAGES

WHAT DO WE KNOW ABOUT CANNABIS USE AND PSYCHOSIS?

Cannabis use has been shown to trigger and worsen psychosis in young people who are vulnerable to psychosis – research has shown it makes them four times more likely to become ill with psychosis. They are also likely to experience their first symptoms at a younger age.

Cannabis use may even cause psychotic illnesses in people who would not otherwise suffer from them.

Research evidence shows that when individuals start using marijuana, particularly if they use heavily and in their teens, the marijuana can trigger the early onset of psychotic illnesses. For those do become ill, approximately 15% will continue to have psychotic symptoms even after they stop using.

Heavy cannabis use past or present is involved in 70% of those cases of psychosis that are very severe or do not respond well to treatment.

The nature of the link between cannabis use and psychosis is complex and needs to be better understood in order to develop effective public education materials and approaches.

PROJECT GOAL

We know very little about this issue from the perspectives of youth who have experienced a first episode of psychosis. As a result, this project's aim was to conduct interviews and hold focus groups with youth in first episode psychosis clinics across Canada to gain their experiences of cannabis use and its potential link with psychosis.

WHAT DID WE DO?

We trained 28 youth who had experienced psychosis as research assistants in three sites across Canada (Halifax, London and Vancouver). These youth worked together with support staff from the first episode clinic to recruit other youth for individual interviews or focus groups. Youth were asked to explore and share their positive and/or negative experiences of

cannabis use (or non use) and to describe their thoughts regarding its relationship to psychosis.

WHO DID WE TALK TO?

We talked to over 50 young people across Canada in both individual interviews and focus group discussions.

WHAT DID WE FIND?

Why Use? Youth identified many different reasons for initiating cannabis use, typically between 12 and 17 years old: peer pressure, being social with friends, curiosity, being under the influence of alcohol, and that is was something new to do. They often smoked to depress their feelings of anxiety and stress, to have fun with their friends and to 'escape'.

For the few youth who had never used cannabis, they told us that they were afraid of addiction or losing control, felt it may interfere with their educational focus, and had health concerns.

I've never tried it because I don't like the smell. I was worried about my health and I was into school and sports

What was the Pattern of Use? For most youth, use was paradoxically both a social AND an isolating experience. Use often began with friends at parties, and then moved to use alone at home. Use also changed over time, with typical patterns being on-and-off, a steady increase, or from constant to not at all.

In the beginning it was if friends had it…to buying…to once in awhile…to once…to twice a week…to everyday…then, to several times a day.

What was the Experience Like? Another paradoxical/seemingly conflicting finding?? pertains to the unpredictability of cannabis use. According to our participants, it can be both positive and negative experience at the same time.

It's fun and disorienting like the most insane roller coaster I've ever been on.

I think if I smoke, ultimately doing it would make me so nervous…

It's fun and then it gets scary.

Happy/Energy/Fun/Relaxing/Focused/Carefree/ Creative/Reduced Stress/Talkative/Enjoyable/ Light-Headed ⟺ **Paranoid/Anxious/Bad Feeling/Scary/Getting Caught/Expensive/WeirdThought/Hallucinatic Depression**

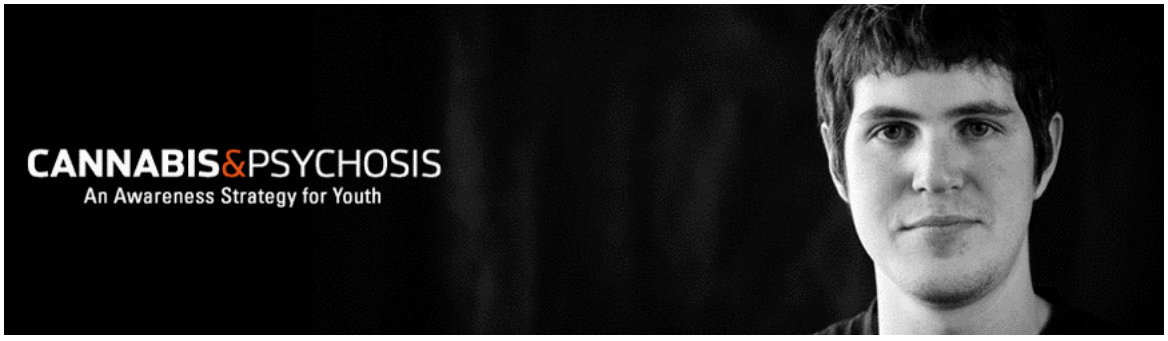
How were Negative Effects Managed? Youth described active strategies to cope with and manage the negative effects of smoking cannabis. They focused on different things, like watching movies, going for a walk or playing videogames to distract them; chose a calm and relaxed environment (often a public space), and often simply ignored it.

What were the Identified Links between Cannabis Use and Psychosis? Youth expressed a great deal of uncertainty about the link between cannabis use and psychosis, but generally believed that it played a role in their illness. Youth felt that use triggered an episode psychosis in people already vulnerable to the illness. Many also found that use coincided with psychotic epsiodes and/or intensified symptoms.

It intensified existing hallucinations and thoughts and then creates a mass amount of anxiety.

I don't think drug use causes psychosis, but I 100% support that it brings out in people who are predisposed.

I think it could play a role to speed up the things that happened – psychosis, definitely. I think it triggers for some people susceptible, but not necessarily all people.



HOW WILL WE SHARE RESULTS OF THE PROJECT?

Youth are unanimous that we should be sharing results in non-traditional ways – they feel that there is a need to go beyond the typical report or summary (although this is needed as well).

The use of humour to share messages was identified as an important strategy.

It was also clear that many youth feel connected with the arts/media and feel it is important to share messages from this project using various art modes including poetry, photography, video, and animation.

I think through music or poetry and visiitng high schools and telling them about what the risks are. Having students talk about it - not adults - and talking about their own experience.

Youth also highlighted the importance of sharing the messages online and would like to use existing new media platforms to get their message out to other youth (e.g. youtube, facebook, tmblr)

Youth identified the importance of having other youth involved in the process of sharing these findings.

It's really fascinating, helpful, and educative to bring people who actually havethis problem with psychosis from marijuana and sharing this with youth. I think that would help them to realize that drugs are not really good…they really need to say it can also happen to you.

WHAT ARE OUR NEXT STEPS? We will be bringing together all of the work accomplished to date and use various forms of communication – including the arts, social media and youth spokespeople – to reach other young people, service providers and the general public across Canada.

Cannabis Use and Psychosis Awareness Project

INTRODUCTION

Cannabis use is more common in people with psychotic disorders compared with people without psychoses (Hall & Degenhardt, 2000). This finding has been fuelled by the results of new studies in scientific journals and reports in the mainstream media (Graham et al, 2003; Lobbana, Barrowclough, Jeffery et al., 2010, Time magazine, 2011). Although it is well known that using cannabis can induce temporary psychotic/hallucinatory symptoms, an accumulating body of evidence has suggested that there is an association between some youth who use cannabis regularly and enduring psychosis (McGrath et al., 2010). Several recent studies suggest that frequent cannabis use during adolescence is associated with a clinically significant increased risk of developing schizophrenia and other mental illnesses, which feature psychosis. Although causality is still debated, a growing body of evidence shows that cannabis, in combination with genetic or environmental factors exerts a causal influence on the onset of psychosis in individuals at risk. There is now consistent evidence that cannabis use, particularly heavy use in early adolescence, increases risk of psychosis by as much as 40 per cent.

Research evidence indicates that cannabis intoxication can produce transient psychotic and affective experiences and may have detrimental effects on motivation and memory (D'Souza, Abi-Saab, Madonick et al., 2005; D'Souza, Perry, MacDougall et al., 2004; Thomas, 1996). Evidence from a recently conducted systematic review indicates that cannabis may increase the incidence of psychotic outcomes, independently of intoxication effects (Zammit et al., 2008). Given these effects on mental state, it is possible that continued use of cannabis following the onset of a psychotic disorder may increase the severity or duration of psychotic symptoms, decrease adherence to treatment and impair longer-term outcome.

WHY IS THIS IMPORTANT?

We know that if psychosis is detected early, many problems can be prevented. The goal of early intervention in psychosis is to improve outcomes by promoting as full a recovery as possible, thereby reducing the long term disability and costs - both human and economic - associated with psychosis. To achieve this, early intervention strategies are designed to limit the duration of the psychosis - prior to and during treatment - and prevent relapse.

Early identification followed by comprehensive, individualized treatment strategies that incorporate the use of low-dose anti-psychotic medications with education and psychosocial interventions can promote full recovery from early psychosis. Clinical research has found that substance use during psychosis increases negative outcomes, including treatment non-adherence, relapse, rehospitalization, poorer social functioning and higher treatment costs (Maslin, 2003). Given these risks, identifying and reducing substance use and abuse should be an important goal for early psychosis intervention services.

In the last few years there have been an increasing number of studies examining the relationship between cannabis and psychosis. This has captured not only the attention of the research community but also the popular media and public in general (see Time magazine article, January 2011). Some of the headlines about these studies in the media may be leading the everyday reader to believe that there is a direct casual relationship between marijuana and psychosis, i.e. that the average person who smokes some pot may become psychotic. Though this definitely makes for a gripping news story and there are some studies that suggest this causal link, according to the abundance of scientific literature and various other forms of information (e.g. web and print-based resources, anecdotal evidence, documentaries evidence) the nature of the link between the two seems to be more complicated than this (Zammit et al., 2008). There is very little qualitative research available that examines the issue from the perspective of youth who are engaged in early intervention and substance use treatment. This report describes an *action-based project* whose aim was *to engage* youth in order *to understand their perspectives regarding cannabis use*, and *their beliefs about the link* between cannabis use and psychosis.

OBJECTIVES

The overall objectives of the project were:

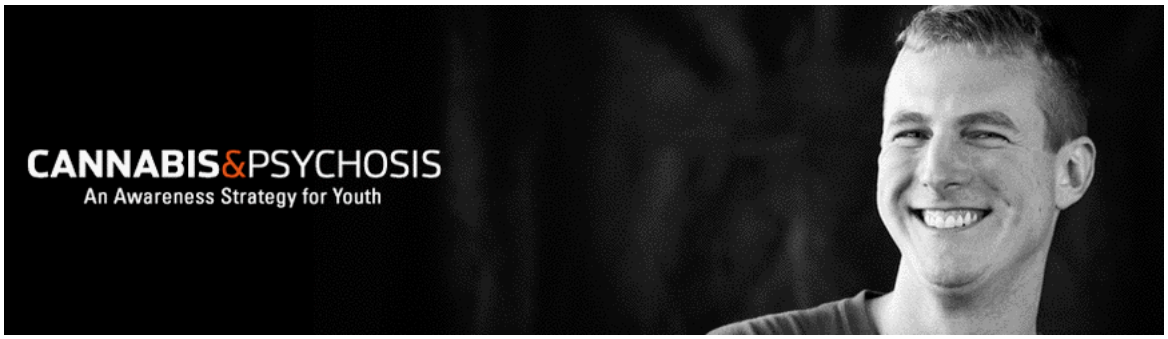
i) To engage young people in a participatory fashion in project design, implementation and evaluation.

ii) To enhance understanding of the reasons young people with psychosis use cannabis, and obtain their perspectives on the link between cannabis use and psychosis.

iii) To share the project results with young people and other key stakeholders across the country.

In order to achieve objective # 1: Twenty-eight youth who have experienced psychosis were trained in participatory qualitative research methodology in order to gather relevant information on the reasons for drug use of their peers in treatment for psychosis and substance use problems.

In order to achieve goal # 2: Youth research assistants conducted participatory research, including interviews and focus groups, in three sites across Canada. They then participated in a group workshop to identify strategies for translating the knowledge generated by the research process into educational materials for key audiences, including youth, families, and gatekeepers.



METHODOLOGY

The project took a participatory inquiry approach, wheby youth were involved in the process from the outset. An advisory committee met early on in the project to discuss the proposal and to explore the best way to implement the project. Youth, family members, service providers and researchers contributed to a brainstorming session to identify engagement strategies, as well as important questions to ask young people regarding their experiences.

The aims of the participatory action research stratgey are two-fold, and are both process and product oriented (Ochoka, Janzen & Nelson, 2002; Nelson, Ochoka et al., 1998). Through the process of being trained for and conducting the project activities, the goal was to increase the capacity of the participating youth, and more firmly establish their recovery pathway. The product of the research is intended to help guide prevention efforts that are more likely to resonate with the at-risk target population.

Participatory research is systemic investigation with the collaboration of those affected by the issue being studied, for purposes of education and taking action on or effecting social change (Royal Society of Canada). Some of the benefits of participatory research include: the results are relevant to interests, circumstances and needs of those who would apply them, the results are more immediately actionable, that generalizable findings are more credible to people, practitioners

and policy makers elsewhere because they were generated in partnership (Green, 2004).

Research has shown that participant action research has particular resonance and relevance with the content of mental health and addictions. Historically, users of mental health and addictions services have had little input into the development or evaluation of those services. Participatory action research, which is strengths-based and action-oriented, offers a process through which people utilizing mental health services can work on collaboration with others to develop evaluation and assessment tools that are both more relevant to program outcomes and empowering to the people whose progress they measure (Ochoka, Janzen & Nelson, 2002).

Participants and Setting

Three early psychosis intervention clinics participated in the project – in Halifax, London and Vancouver. Youth associated with each of these clinics that were interested in participating in either an individual interview or a focus group were recruited to the project. Approval was obtained by the relevant Research Ethics Boards in each of the project settings.

The Advisory Group made the decision to protect the identity of the participants and therefore demographic information was not obatined for the interviewees. A total of 36 in-depth qualitative interviews were held as well as 5 focus group discussions.

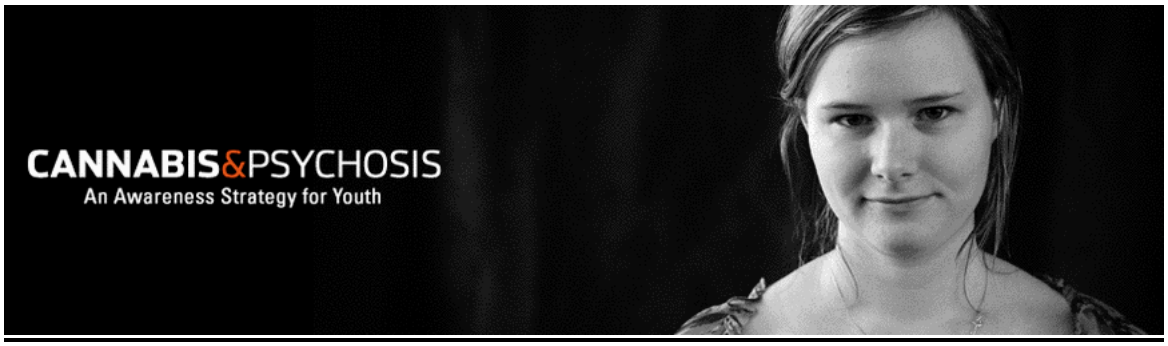
Data Collection

In-depth interviewing, using the long interview method, described by Charmaz (1991) as a "directional conversation that elicits inner views of respondents' lives as they portray their worlds, experiences and observations" (p.385) was used in this project. The qualitative interview is a particularly useful approach for accessing the perspective and experience of the individual (Devers, 1999). Focus groups were also used to provide youth the opportunity to engage in a dialogue about cannabis use and psychosis among their peers. See Appendix A for interview guide, Data was recorded and then transcribed verbatim by an experienced transcriptionist.

Data Analysis

A thematic analysis was conducted for the purpose of this project as it offers an accessible and theoretically driven approach to analyzing qualitative data (Braun & Clarke, 2006). The specific guidelines and the six phases of analysis outlined by Braun and Clarke were followed. They describe thematic analysis at the latent level, going beyond the semantic content of the data and starting "to identify or examine the underlying ideas, assumptions, and conceptualisations – and ideologies – that are theorised as shaping or informing the semantic content of the data" (2006, p. 84). As expected, themes or patterns emerged from the data

(inductive) as well as from the original aims of the research and guided by the interview questions (deductive). Pope and her colleagues (2000) reiterate this point when highlighting their framework approach for analysis of qualitative data. They note that a deductive overview is employed based on predetermined aims and objectives, yet also acknowledge that the themes will be grounded in the data that reflects the accounts of research participants as well as the perspectives/experiences of researchers and trainees as captured in the reflexive accounts. A portion of the text from individual interviews and focus groups was double coded - to ensure research rigor. The analysis team discussed their coding and interpretation of the transcripts in detail in order to refine codes and identify key themes emerging from the data. The original transcripts were then re-read, coded and indexed. The team approach to analysis allowed inconsistencies between the data and themes to be debated, refined, and reflected in the final presentation of the main themes.



Results

Theme 1" The 'ups and downs' of the experience

…Taking away the pain and depression at times then it all just back tracked - it instantly starting causing pain and depressing feelings - #15

The above quote highlights the finding that cannabis use was not easy to describe; it was described as a complex activity characterized as both positive or negative, depending on the person, place and/or time.

Positive Experiences

Cannabis use often began as a pleasant experience for most participants. Words frequently used to describe the feelings while smoking included "happy", "fun", "carefree" and "enjoyable". Different experiences were described, such as: that it resulted in laughter, provided energy, allowed focus (on one thing), spurred creativity or resulted in feeling more "in-tune" with the world. It also made some feel light-headed, or more talkative. Many participants described it as a way to relax or calm down and to "put their mind at ease"; while others said it expands or opens up their mind. As one put participant explained, "you begin to think of

things you haven't before and accept ideas that no longer seem absurd". Participants also noted that it functioned to reduce stress and feelings of anxiety.

It's fun and disorienting like the most insane rollercoaster I've ever been on.

It helps me relax a lot - it makes me carefree - like nothing matters except for the moment…I'm not used to living like that so it puts me in that state.

I think if I smoke marijuana it might help me relax but ultimately doing it would make me so nervous, that I wouldn't see a difference. I never felt a need to experience it.

Cannabis was considered by some to be a stimulant which enhances mood, or one's current state of mind, and the reaction to the drug was dependent on the day one was having or the activities engaged in while smoking; as one focus group participant commented, "it changes…probably has to deal with how I felt before I did it", while another said "depends what you're reading or see on T.V." Many mentioned feeling lazy, tired or sleepy after smoking marijuana; which can be considered as either positive or negative, depending on the person, situation or time of use.

Negative Experiences

At the same time I don't like how it makes me feel afterwards even if it cheers me up. I lose my motivation for the day, kinda similar to a hangover…I go through ups and downs, I feel pretty good, laughing, having a good time…then I start worrying about things and I get tired too.

When asked to describe the negative experiences associated with cannabis use, almost all participants found the effects of using became highly negative after experiencing psychosis. They explained feeling paranoid, and experiencing weird, negative, exaggerated, disoriented, or intense thoughts. They also described worsening voices, feeling isolated or anxious, and experiencing hallucinations, confusion, depression and bad feelings. Other negative experiences included short-term memory loss, getting caught (by parents or police), kicked out or suspended from school and the financial aspect of frequent use to be a burden. Only a small percentage mentioned worrying about their physical health. Some participants mentioned a fear of losing control.

When I'm high it's kinda scattered, you are walking then you are 10 steps ahead, in between those 10 steps I don't remember. At first its fun then it gets scary.

I feel like people are coming after me, really paranoid.

It was chaotic, my thinking was scattered when I smoked and I had a lot of bizarre thoughts. Some of the stuff like how to control other people through

thoughts…got really paranoid I would go too in depth with it on my own away from my friend.

Sometimes when I'm having a bad trip I would disassociate with thoughts that won't mix.

Many participants felt they had less control when smoking marijuana, but this very much depended on the extent of use.

I feel in control until I smoke way too much…then it's not a good thing…I will go to sleep or I don't understand what people are talking about because I'm focused on something else.

Many participants also actively drew upon strategies to control their paranoia and anxiety, which involved a focus on distractions such as: going for a walk, watching TV or movies, or playing videogames. A few participants tried to control their breathing instead "take deep breaths" or "close my eyes and calm myself down". Other participants described their attempts to "ignore it" or "not think about it" when experiencing paranoid thoughts.

I try and talk myself down if I have the clarity to know that I'm overacting to something…being out in public and thinking someone's talking about me…tell myself that it's not real…or just remove myself from the situation all together and go to a calm, safe spot.

Theme 2: Attributions for Initiation of Cannabis Use

Participants revealed a number of reasons for why they chose to try out cannabis including: being social and with friends, under the influence of alcohol, as something to do, for the novelty of it, and out of boredom and curiosity. Participants indicated both internal and external attributions; that it was either their own individual choice or the result of the influence and peer pressure from friends.

I wanted to...all my friends tried it before me. I was the only one who hadn't…

However, for some, first experiences were frightening and not as enjoyable as they anticipated. For example, participants described having difficulty breathing or coughing a lot. Others would continue to smoke to depress their feelings, anxiety and stress, have fun with friends, as a social activity or as a way to escape. Many wanted to smoke simply because they "liked it". However, usage ranged and changed over time. Use was described in varied patterns; either 'on-and-off', steadily increased, or from constant to not at all, then socially (or the reverse pattern).

In the beginning it was if friends had it…to buying…to once in awhile…to once to twice a week…to everyday then to several times a day.

For the majority of the participants interviewed, their cannabis use dramatically decreased over time, or they stopped all together. Many respondents stopped smoking after their psychosis and after "getting ill". Reasons included: simply choosing to stop, feeling sick, and having a different way of thinking or point of view.

Psychotic symptoms starting happening and I heard radio messages and voices in my head and then I stopped and I haven't smoked since.

I quit because it was making me worse with the illness it's hard to do good…to get my life back even without it.

A few respondents indicated that they had **never** tried cannabis. Their explanations for not smoking included: the foul smell, health reasons, fear of addiction and losing control, school involvement and a focus on their responsibilities. Environmental influences, such as parents, classmates, or never being exposed also had an affect on their reasons for never feeling the need to use.

I've never tried it because I don't like the smell. I was worried about my health, and I was into school and sports and I didn't feel pressure to do it. I was drawn to a different crowd.

Why use cannabis?

Overall, cannabis was identified as functioning to depress feelings of anxiety and stress for participants, a way to have fun with friends or 'to escape' from the everyday. The first time participants tried cannabis ranged from ages 12-17 yrs old, with one participant starting in their twenties.

Cannabis use can be both a social and isolating experience at the same time. What started with friends (at parties) frequently turned into at home (by oneself).

Sometimes I would have conversations and see things or understand things in the conversation that I would never have seen before. It would lead to psychotic sensations and I wouldn't talk to people. It would make me want to avoid discussion.

Although the majority indicated that their use was a social activity, many said that even when they are smoking with others, they have difficulty interacting normally, don't involve themselves, or become preoccupied with their own thoughts. One participant mentioned that they think personality is a factor as to whether it is considered a social or isolation experience "I think depends on the person".

Theme #3: Cannabis and its Perceived Role in Illness

Participants expressed a great deal of uncertainty regarding the role of cannabis use in their psychosis. The terms ‘don’t’ know’ and ‘not sure’ were used repeatedly. In spite of this, there was a general sense that there was a link and that cannabis played a role in some way.

Very high percentage of people who have psychosis either did take marijuana or are using marijuana or started to use afterwards.

95% brings on my anxiousness and my psychotic faze.

I honestly don’t think it affects my condition but this is so new to me it could very well be a big factor and I just don’t realize it.

If I had not started smoking the marijuana I wouldn't have ever known I would have psychosis and it would have never come out. Because it was technically the drug that was causing me to have the psychosis symptoms.

Overall, many respondents believed that cannabis use triggers or worsens psychosis. The majority of personal responses believe the link to psychosis is a possibility, while several are not really sure. Only a few participants found that there was not a link for them personally.

I think it triggered it. Because I was smoking a lot of it several times a day and hearing stuff…hallucinated right after.

I know now if I used marijuana it would feel a lot different then it used to.

What I know right now I don’t think so, but it might be different for other people, for me, personally, I don’t think I’ve had psychotic break outs when I’m high.

Often participants believed that a link was a possibility, but weren’t really sure. Some found that both cannabis and psychosis had similar effects, or that cannabis doesn’t cause, but rather contributes to the illness experience.

I think there can be. I think it can lend itself to a lot of things, experiences you have with psychosis. Being paranoid and the highs and the lows.

I don't know how anyone can think that there isn't a link. A chemical drug that affects your brain that causes you to, that everyone says gets you high. It's not normal and if you get high so many times you start to think differently.

When initially asked the question, a number of participants expressed some uncertainty regarding the link to their first episode of psychosis and whether marijuana necessary played a part, or not. However, when participants further discussed their experiences, many found it did in fact coincide with episodes. A few participants specifically stated that they did not realize the link at the time (of

first episode), but discovered the connection later. A large percentage of individuals used before psychosis or were smoking heavily during their first episode.

The heavy pot use coincided with my episodes of psychosis. Then after I have my psychosis I really cut back on the weed. I was scared to go to that place again so I didn't want to mess around with that.

I never realized it was psychosis, started getting paranoid anywhere from when I started smoking weed…few incidences that definitely couldn't have been real or hallucinations. I didn't realize until later and connected the dots.

Shortly after there were things like hallucinations but I thought, that it was real and I didn't have it really bad or continuous hallucinations like I've been having...before I didn't realize it was psychosis. I didn't know it was symptoms.

Many participants indicated that their symptoms worsened with cannabis use, and reported hallucinating immediately following. An increased incidence of paranoia and hearing voices that were stronger and louder, or more frequent were also common. A focus group participant noted "*It intensifies existing hallucinations and thoughts and then creates a mass amount of anxiety".* Only a small percentage felt less paranoid or found it helped to deal with difficulties, for example, with sleeping.

When asked about the impact of cannabis on their medication, respondents found it was either the same, couldn't tell the difference or hadn't noticed. A few participants found cannabis dampened the effects of medications, gave them a bad reaction or interfered in some detrimental way.

If you smoke marijuana on certain medications it can cause a bad reaction and cause worse psychotic symptoms.

I'm not sure it effected how my medications worked, but my tolerance did. Anything like that is intensified a lot; I lose control I guess…

Contributing Cause

The majority of respondents believed that cannabis use might in fact be a contributing factor for an **earlier** onset of psychotic symptoms; there is definitely a link. However, they acknowledged that it was also hard to distinguish this exact connection because of similar symptoms that can occur when smoking cannabis and having a psychotic outbreak. As one focus group respondent stated, "*I couldn't tell whether it was the weed that did it, or was it my brain (psychosis) that was affected…the weed is a trigger*". Many other participants indicated this same confusion.

It could possibly trigger more hallucinations and disorganized thinking but I don't know it necessarily causes psychosis.

I think there definitely is a link between psychosis and any type of drug use including marijuana. Because it makes you hallucinate. So it creates self-perceptions.

I had a lot of thoughts it's hard to remember because of my psychosis. I don't know if the marijuana induced it or not.

Self-medication

Several participants discussed cannabis use as a way to self-medicate. They reported that it helped them to sleep, assisted with clearing their mind of unwanted and/or confusing thoughts, and generally was used in order to cope with psychosis.

Helps now with my anxiety…I'm on clozapam for that but I find cannabis helps a lot better. I shattered and dislocated my wrist so when I'm not smoking it hurts…

Didn't realize I had the symptoms so for a few years I guess I was self medicating.

Vulnerability

As discussed in the focus groups, many participants had family members with a history of mental illness, and several felt that such a family history resulted in a predisposition to developing psychosis. Consequently, cannabis use functions to bring out the symptoms earlier on in life.

I don't think drug use causes psychosis but I 100% support that brings it out in people who are predisposed. I don't think smoking pot makes you psychotic I believe that I was predisposed to have psychosis and then taking the weed just brought it out.

Contributing Cause and Vulnerability

A number of participants felt that the link between psychosis and cannabis could be a combination of more than one of these themes, including factors of vulnerability, in addition to marijuana use just being one of the contributing causes of psychosis.

I think it could play a role to speed up the things that happened. Psychosis definitely. I think it does trigger in the percentage of people susceptible but it's not necessarily all the people.

I think marijuana can be a trigger…but the psychosis was bound to happen anyway in an individual person.

It increases symptoms in people with mental disorders and those that don't have mental disorders if there is any trace of it in their family history it can make it go "boom".

A Fine Line between Use and Abuse

When participants were asked to describe the differentiation between "using" versus "abusing" cannabis, there was a fine line between just smoking it socially now and then, to everyday reliance. Many described that "if you're smoking weed and disrupting your everyday life…then that's abuse". The factors identified to distinguish between use and abuse were: how often, when, issues of dependence/addiction and the money spent. If one smoked frequently and everyday, alone instead of socially and where a lot of money is spent - that was classified by most to constitute abuse.

I think use versus abuse… some people can use it as they can go to a party. But abuse is when you pretty much do as I was doing and the first half of my duration of using. I was just doing it all day everyday to deal with my problems instead of dealing with them in real life.

It was constant, there were times being high all the time I don't remember being sober.

Use means something that you do recreationally and abuse is something that you're mostly dependent on.

A Gateway to other Drugs?

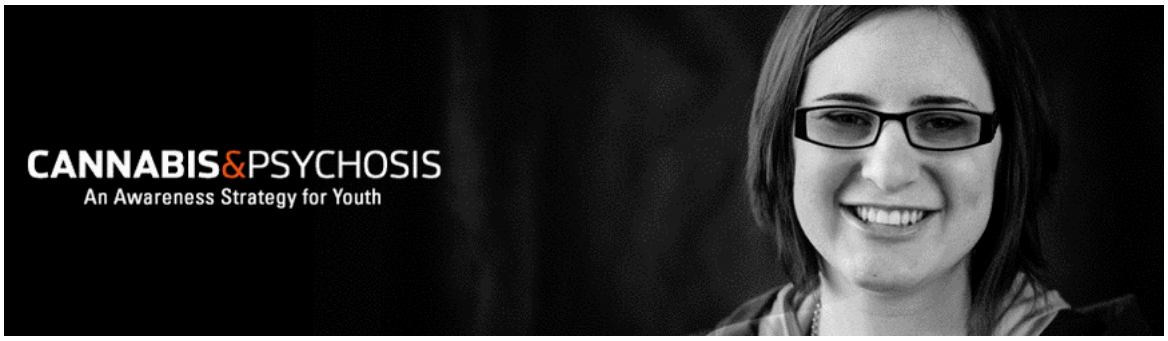
Cannabis was often indicated as being used first by participants, and for a high percentage, it represented a gateway drug to other drugs. Cannabis was reported to be the substance used on a constant basis, while other substances were identified as mainly experimental, although a few individuals revealed their addiction to heavy drugs. It was only one or two participants who commented about the legality of cannabis, and the fact that it is illegal in Canada.

I very much blame on why I started using other drugs…for me I think it was the biggest step I don't think I would be likely to do other drugs if I hadn't done marijuana.

The most common substances listed were mushrooms, ecstasy, and cocaine. The majority of participants had tried mushrooms as well as cannabis. Meth, acid, crack, salvia, ketamine, dilaudid and others were also identified. A couple of participants (although legal substances) included alcohol, tobacco and other pills/pain killers as being used frequently. Interestingly, all participants who

indicated they never tried marijuana had also not tried any other drugs, and had either never consumer alcohol or were not heavy users.

It's not as dangerous as the other drugs. In terms of correlation with psychosis, I think it's a gateway drug…interact with marijuana that could induce psychosis.



How can Findings be shared with other Youth?

Respondents identified online sources, such as a website and YouTube as the best methods to disseminate results. Other young people experiencing mental health issues were reported to be important messengers of the results as it was thought that sharing their experience could helping others and engage youth. Many participants stated that it would be a positive move to have role models in schools, so that other youth would be able to better relate, and have peers that think they "get me" and maybe for some "understand that they aren't the only ones having these kinds of thoughts".

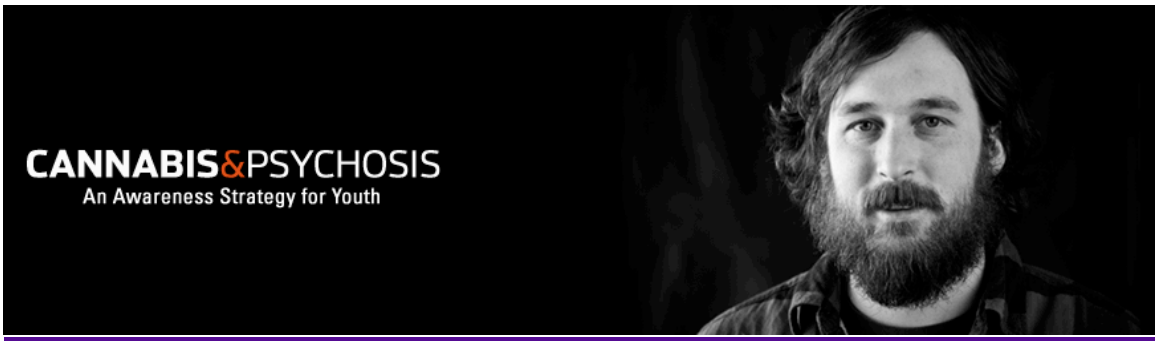
I think it's a good thing to tell you the truth…more information about things. I guess psychosis is like, a lot of things to be learned and if it coincides with marijuana it should be found out.

I think through music or through poetry and visiting high schools and telling them what the risks are. Having students talk about it not adults. Telling about their own experience.

In addition, creative methods such as visual strategies to share messages, as well as an interactive blog where people can come and write messages were additional suggestions to further engage youth.

It's really fascinating, helpful and educative to tell, to bring people who actually have this problem with psychosis from taking marijuana and sharing this with the youth I think that would help them to realize that drugs are not really good…they really need to say it can also happen to you.

Instead of just saying drugs are bad just say, "You know what? This is potentially what could happen. This is what specifically could happen to you not just well, he started doing crack and now he doesn't have a house".



DISCUSSION

Findings of this project highlight the complexity of cannabis use from the perspectives of youth who have experienced psychosis. The reasons for choosing to use cannabis were many and included social aspects, to depress anxiety and stress and as a way to 'escape'. The few participants who had never smoked cannabis stated that they were never exposed, feared addiction and loss of control, and were focused on school and other activities. Descriptions of use were mixed, with participants reporting both negative and positive experiences, depending on the situation. Cannabis use was unpredictable though, and a variety of patterns of use were described.

Youth were unanimous in the uncertainty they expressed about the causal link between cannabis use and psychosis – although cause was uncertain, they believed that there was definitely a strong link between use and the initiation or exacerbation of psychotic symptoms.

Youth research assistants and participants recommended that artistic and multi-media strategies be used to share the project findings with other youth, families, service providers and organizationas across the country.

APPENDIX A

Understanding links between cannabis use and early psychosis: An awareness strategy for youth at risk

Interview/Focus Group Guideline Questions

1. In general, what is your experience with marijuana?

- Why did you start smoking weed? (or not start)
- What was it like the first time you smoked MJ?
- When did you start using in relation to the onset of your psychosis?
- If you smoke, describe your pattern of use. Has it changed over time?
- What about the broader context in which use usually occurs?

2. Broadly speaking, what does using marijuana "do" for you? What do you get out of the experience?

- What makes you want to or not want to smoke marijuana?
- Do you feel more or less in control when you smoke marijuana?
- What is your "high" like, generally speaking?
- What is your thinking like when you use marijuana?
- Does marijuana help you relax? Explain your answer
- Would you describe smoking marijuana as an isolating experience? Is it a sociable one? Both? Please expand on this topic

3. Has marijuana played a role in your illness? To what extent?

- Did marijuana play a role in your first episode of psychosis?
- Describe your positive and negative experiences with marijuana.
- Is there a link between marijuana and psychosis? Explain.
- How are the symptoms of your illness related to and/or affected by using marijuana?
- Does marijuana have an effect on how your meds work?
- Can you think of any strategies that you have used in the past that help you control any paranoid thinking, anxiety, or other worsening of symptoms that occur while using MJ?

4. What do the terms "use" vs. "abuse" mean to you in the context of marijuana usage?

- What other drugs have you tried (if any)? Which one did you do first?
- Describe the recreational drug use, if any, of your friends. Is MJ regularly available among the people you know well?
- Have you experienced pressure to use it?

5. What are your ideas in terms of sharing the kind of information that will be generated from this project with other youth?

- What do you find interesting when you're trying to learn about something– websites, documentaries, YouTube videos, art work/collages, blog etc?
- Is there anything else that is important about MJ and psychosis that we haven't asked about?

REFERENCES

Archie, S. and Gyomorey, K. (2009). First episode psychosis, substance abuse, and prognosis: a systematic review. *Current Psychiatry Reviews.* 5: 153-163.

Archie, S., Rush, B.R., Akhtar-Danesh, N., Norman, R., Malla, A., Roy, P., and Zipursky, R.B. (2007). Substance use and abuse in first-episode psychosis: prevalence before and after early intervention. *Schizophr Bulletin*. 33: 1354-1363.

Arseneault, L., Cannon, M., Witton, J., and Murray, R.M. (2004). Causal association between cannabis and psychosis: examination of the evidence. *Br J Psychiatry* 184, 110-117.

Charmaz, K. (1991). *Good Days, Bad Days: The Self in Chronic Illness and Time.* New Brunswick, NJ: Rutgers University Press.

Devers, K.J. (1999). How will we know "good" qualitative research when we see it? Beginning the dialogue in health services research. *Health Services Research*. 34(5): 1153-1188.

D'Souza DC, Abi-Saab WM, Madonick S, Forselius-Bielen K, Doersch A, Braley G, Gueorguieva R, Cooper TB, Krystal JH. (2005). Delta-9-tetrahydrocannabinol effects in schizophrenia: implications for cognition, psychosis, and addiction. *Biol Psychiatry*. 57: 594–608.

D'Souza DC, Perry E, MacDougall L, Ammerman Y, Cooper T, Wu YT, Braley G, Gueorguieva R, Krystal JH. (2004). The psychotomimetic effects of intravenous delta-9-tetrahydrocannabinol in healthy individuals: implications for psychosis. *Neuropsychopharmacol*. 29: 1558–72.

Gonzalez-Pinto, A., Alberich, S., Berbeito, S., Guiterrez, M., Vega, P., Ibanez, B., Haidar, M.K., Vieta, E. and Arango, C. (2009). Cannabis and first-episode psychosis: Different long-term outcomes depending on continued or discontinued use. *Schizoprhenia Bulletin*. 37(3): 631-639.

Graham, H.L. et al. (2003). Substance misuse in psychosis: contextual issues. In *Substance misuse in psychosis: Approaches to treatment and service delivery.* John Wiley and Sons.

Green, L. (2004). *Health Program Planning: An Educational and Ecological Approach.* McGraw Hill.

Hall W. and Degenhardt, L. (2000). Cannabis use and psychosis: a review of clinical and epidemiological evidence. *Aust N Z J Psychiatry*. 34: 26–34.

Lobbana, F., Barrowclough, C., Jeffery, S., Bucci, S., Taylor, K., Mallinson, S., Fitzsimmons, M., Marshall, M. (2010). Understanding factors influencing

substance use in people with recent onset psychosis: A qualitative study. *Social Science & Medicine*. 70 (8):1141-1147

Maslin, J. (2003). Substance misuse in psychosis: contextual issues. In H. L. Graham, A. Copello, M. J. Birchwood, & K. T. Mueser (Eds.), *Substance misuse in psychosis: Approaches to treatment and service delivery*. Chichester, UK: John Wiley & Sons.

McGrath, J., Welham, J., Scott, J., Varghese, D., Degenhardt, L., Hayatbakhsh, M.R., Alati, R., Williams, G.M., William Bor, W., and Najman, J.M. (2010). Association between Cannabis Use and Psychosis-Related Outcomes Using Sibling Pair Analysis in a Cohort of Young Adults. *Arch Gen Psychiatry*.

Nelson, G, Ochocka, J. et al. (1998) nothing about us without us: Participant Action Research for self-help/mutual aid organizations for psychiatric consumer/survivors. *American Journal of Community Psychology*. 26 (6).

Ochocka, J., Jansen, R. and Nelson G. (2002) Sharing power and knowledge: professional and mental health consumer/survivor researchers working together in a participatory action research project. *Journal of Psychiatric Rehabilitation.* Spring; 25(4): 379-8.

Thomas H. (1996). A community survey of adverse effects of cannabis use. *Drug Alcohol Depend.* 42: 201–7.

Zammit, S., Moore, T., Lingford-Hughes, A., Barnes, T., Jones, P., Burke, M. and Lewis, G. (2008). Effects of cannabis use on outcomes of psychotic disorders: a systematic review. *The British Journal of Psych.*