

## **CHRONIC CANNABIS USE AND THE SENSE OF COHERENCE**

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### **Summary**

Chronic cannabis users undergoing therapy were tested using the Sense of Coherence scale to determine the extent to which patients showed improvements in perceived comprehensibility, manageability, and meaningfulness of life. Improvement was demonstrated between admission and the completion of therapy six weeks later. Post-treatment scores were in the range of control subjects. Users who had quit using cannabis for more than 40 days at admission, but who had not participated in therapy, had somewhat higher scores than those who had quit for 17 days or less at admission. Patients in a methadone treatment program had scores below norms and did not show improvement during treatment. Poly-drug abusers, who had undergone psychosocial treatment, had scores somewhat below normative scores. Improvement in chronic cannabis users is discussed in the context of cognitive and psychosocial problems associated with chronic cannabis use.

In the course of clinical treatment of cannabis users, we have noticed that the use of cannabis more often than about every six weeks for approximately two years, leads to changes in cognitive functioning (1). These changes create a new state of consciousness that can be described as a "cannabis-state-dependent" effect. The effects of chronic use peak after about two years. According to our experience, it is necessary to tutor and coach the patients on cognitive functions to restore them to normal levels. Along with these observations, we have also noticed that it takes 14 days of abstinence before the user is able to begin to control the processes of cognitive functioning and that it takes up to six weeks before the patient is able to make decisions based on normal cognitive functioning (1).

The users show weaknesses in analytic and synthetic skills and have difficulty sorting out information, synthesizing from part to whole (for example, classifying information correctly) and understanding subtle shades of meaning (poor comprehension). They have weaknesses in psychospatial skills, including difficulties differentiating time and space. In addition, they have poor mental representations of the environment and poor routines of daily life. This is associated with feelings of alienation within the temporal, spatial and social world of the patient. Patients feel that life is not under their own control and lacks meaning (1).

Antonovsky's Sense of Coherence Scale (2) measures the degree to which subjects feel that they have a sense of control over their own lives (the manageability scale), that life has meaning (the meaningfulness scale) and that their social life is understandable (the comprehensibility scale). Since our patients appear to have deficits in these areas, the present study was designed to test chronic cannabis users along these dimensions at the initiation of treatment and at the conclusion of treatment.

## **Method**

Antonovsky's Sense of Coherence Scale is a 29-item, 7-point semantic differential scale translated into Swedish (Questionnaire). It is composed of an overall scale score and three subscale scores. The Sense of Coherence is, according to Antonovsky, " ... a global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence." (2). Each subscale is described below.

(1) Comprehensibility subscale (C): " ... the stimuli arriving from one's internal and external environments in the course of living are structured, predictable and explicable." (2). Sample item: "Has it happened in the past that you were surprised by the behavior of people whom you thought you knew well?" Scale: 1=never and 7=always.

(2) Manageability subscale (MA): " ... the resources are available to one to meet the demands posed by these stimuli." (2). Sample item: "Do you have the feeling that you're being treated unfairly?" Scale: 1=never and 7=always.

(3) Meaningfulness subscale (ME): " ... these demands are challenges worthy of investment and engagement." (2). Sample item: "Until now your life has had:" Scale: 1=no clear goals or purpose and 7=very clear goals and purpose.

It is important to note that SOC is not a personality test and that a person's SOC scores change during the lifetime, for example, during psychological stress, anxiety or depression.

## **Subjects**

A sample of clinic patients with chronic cannabis use visiting the Treatment Centre was given the questionnaire. There were no diagnoses of psychiatric illness, and abstinence from drugs was verified with urine samples. In addition, several samples of comparison groups were studied. These groups are listed below.

1. Group C: patients tested at or close to admission (n=15). This group was tested a second time

after six weeks of treatment.

2. Group A: patients tested only at admission who were drug free for 17 days or less (n=31).
3. Group N: patients tested only at admission who were drug free for 40 days or more (n=20). None of these subjects had undergone treatment.

For comparative purposes, the questionnaire was given to several other groups, including:

4. Group M: patients on methadone maintenance at admission and after stabilization of the methadone dose [ranging from 3-4 months] (N=9).
5. Group P: former poly-drug users. These patients had been treated with different types of psychosocial treatment (n=62).
6. Group CO: counselors employed by judicial system (n=26).

## **Discussion**

The present study has demonstrated that chronic cannabis users have low scores on the overall Orientation to Life Scale score, as well as on all subscale scores. After six weeks of treatment, the overall SOC scores, as well as all subscale scores, were in the same range of scores as the normal control group. Low scores were also found in cannabis-using patients at admission, who had quit using cannabis, but had not participated in treatment. Comparison of subjects who had quit using cannabis for less than 17 days (Group A) with those who had quit for more than 40 days (Group N), showed a trend toward higher scores in the latter group, even though these differences were not statistically significant. Further research is needed among a group of subjects, not participating in therapy, who have quit for longer periods of time, to determine whether or not further improvements occur in the absence of therapy. Opiate dependent patients entering methadone treatment had an overall SOC score more than one standard deviation below the control group mean. No change in the SOC scores occurred during drug therapy. This would suggest that improvement in orientation to life does not occur simply through stabilizing an opiate habit. Poly-drug abusers who had undergone psychosocial treatment had overall SOC scores almost one standard deviation below the control group. These results suggest that these individuals have psychological problems that remain after treatment. This finding is similar to the cannabis users who have completed treatment, since their overall SOC scores remain about one-half of a standard deviation below the control group. Taken together, these findings suggest that post-therapeutic evaluation would be useful to determine whether or not additional therapy would be useful.

Since SOC scores are lower in subjects experiencing psychological distress such as anxiety,

depression or environmentally induced stress (3), it is possible that many users who have quit have shown improvement due to the fact that THC is no longer in the system. Further improvement might then be expected if subjects were to seek assistance with ongoing psychological problems. In a longitudinal study, Pandina and colleagues (4) have found that persons with low personal and social competence at initial testing who use cannabis heavily, have even lower personal and social competence at subsequent testing three years later. In our subjects, it is possible that lower personal and social competence may have antedated intensive cannabis use. Since our therapeutic approach involves psychosocial coaching in the latter weeks, it is possible that improvement in SOC scores in group C is due to the combination of abstinence and improved personal and social competence.

In addition to the status of personal and social competence among chronic cannabis users, it is possible that personality factors interact with cannabis use to lead to lower SOC scores. It has been shown that there is a high correlation between depressive tendencies (MMPI-D scale) and euphoria while intoxicated. Similarly, there is a high correlation between anxiety (MMPI-Ps scale) and calming effects during intoxication (5). These data suggest that cannabis users might consume cannabis to medicate depression or anxiety. Research on patients entering treatment would be useful to test the self-medication hypothesis.

There is converging evidence showing the effect of the cannabinoids on the cognitive functions (1). Solowij (6) has demonstrated subtle deficits in an attention task, which are associated with changes in event-related potentials in chronic cannabis users. It is important to note, however, that several studies have demonstrated trends toward cognitive deficits in chronic users (7,8,9), while several other well-controlled studies have not (10,11). Despite the difficulty of demonstrating effects in formal research studies, we consistently observe cognitive differences that are similar to a temporary prefrontal syndrome (12).

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