Improvement in cognitive and social competence in adolescent chronic cannabis users. - Results from a manual based treatment programme at Maria Youth Centre, Stockholm, Sweden.

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At Maria Youth Centre in Stockholm, a system-theoretical approach involving family treatment has been used since the late 1980s to help adolescent drug addicts.

In 1999 a treatment method for adult chronic cannabis users (Lundqvist, T and Ericsson, D 1988) was transformed into a manual based 18 sessions programme.

A short presentation of the treatment manual

It is presented as a course in quitting

- Phase 1: a bio-medical focus lasting until the 12th day after smoking cessation.
- Phase 2: a psychological focus lasting until the 21st day after smoking cessation.
- Phase 3: a psychosocial focus during the rest of the program.
  This phase has no time limits.

The treatment manual focus on

- The chronic influence on the cognitive functions.
- The impact of the enhanced subjective perception.
- The need of professional guidance in the relearning process.

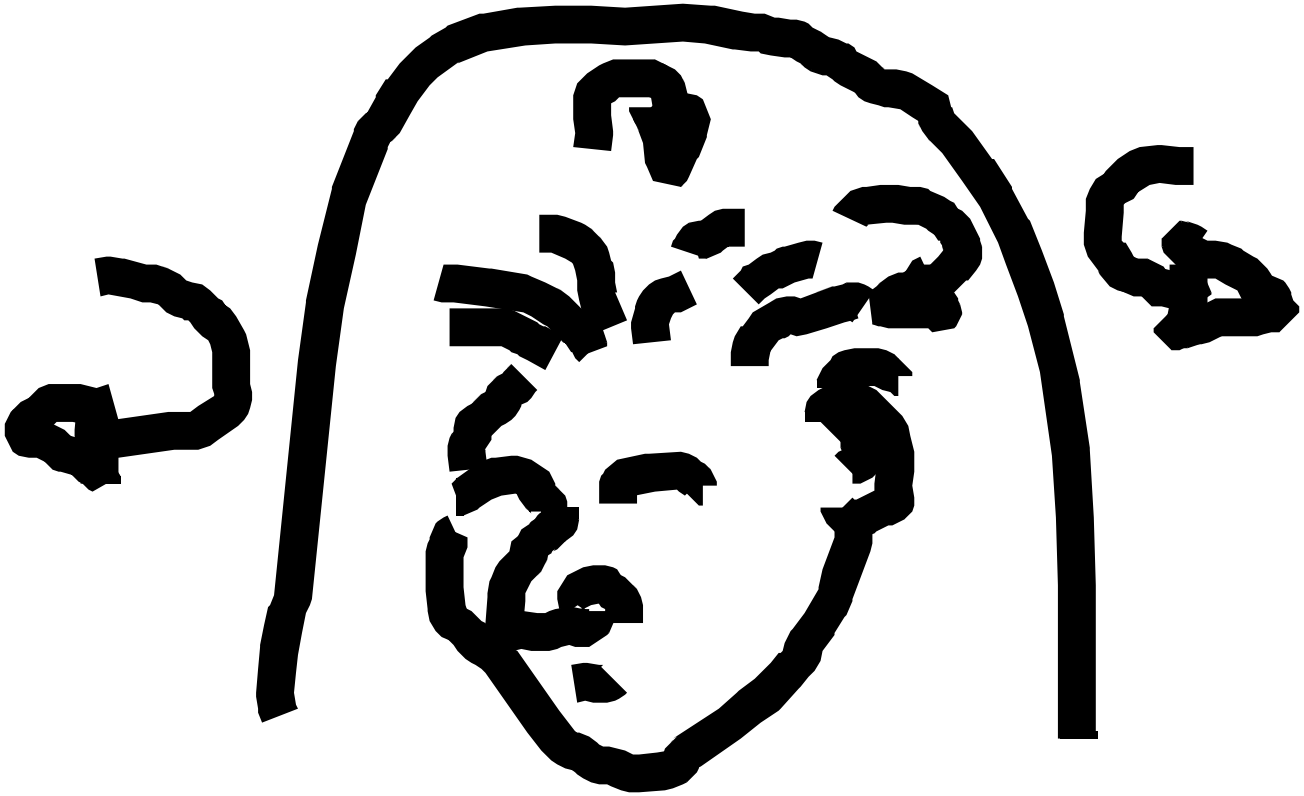
- Critical examination of the drug-related episodic memory.
- Promotion of the psychological maturation.
- Enhancing the social competence and orientation to life.

- The self-regulation use of cannabis.
- Depression and phobic reaction following cessation of cannabis.
- The need to be given proposals.

The therapist is requested to:

- have good knowledge of the acute and chronic effects of cannabis.
- use a concrete and simple language.
- transform abstract reasoning into drawings and metaphors.
- be a leading authority in describing the detoxification process.
- The therapist is the prefrontal substitute.

An illustration of the screened off condition

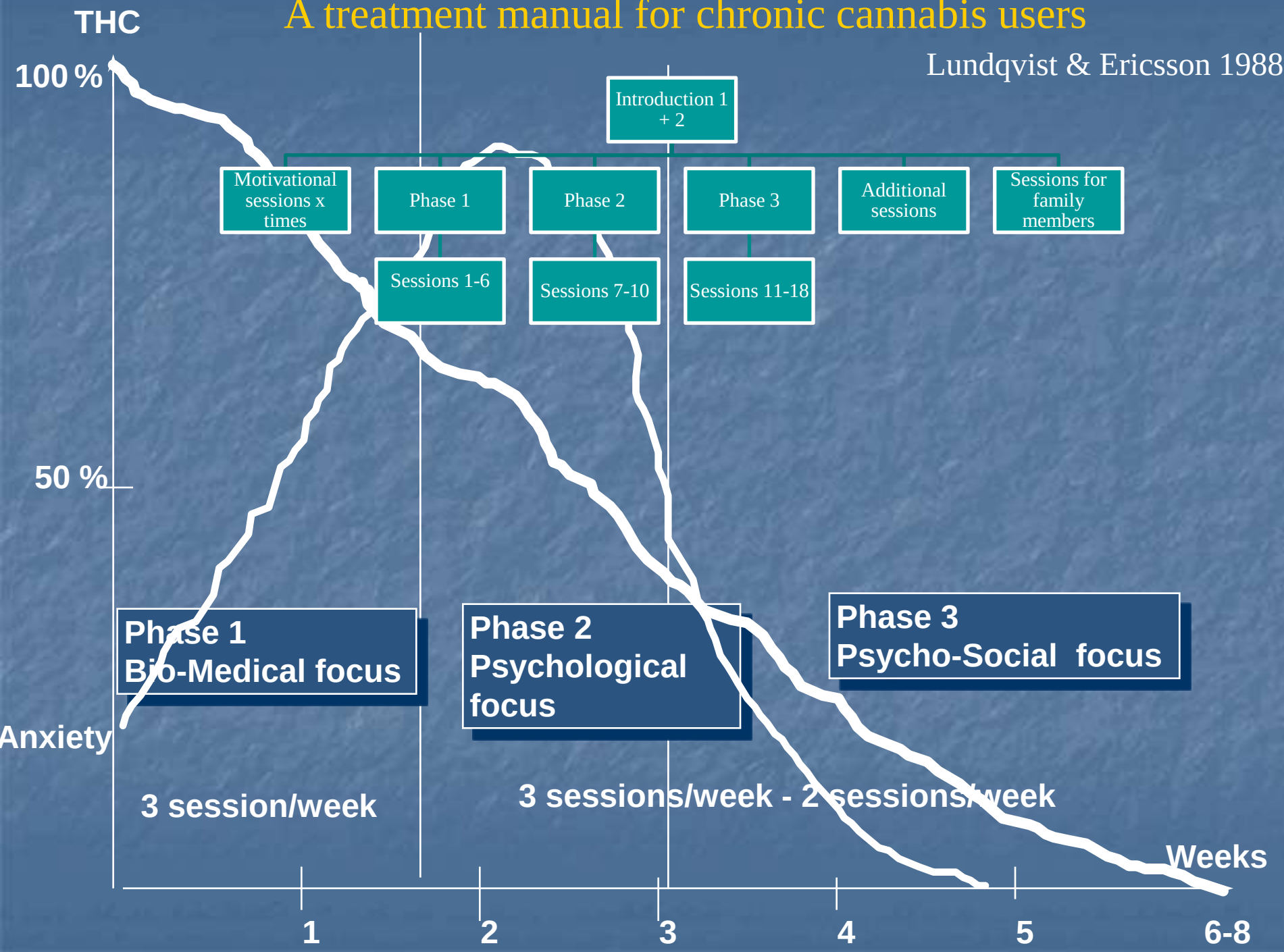


Each discussion should contain

- To make the client notice what is happening.
- To make the client compare with earlier experiences.
- to make the client reflect and consider the topics of the discussion.

A treatment manual for chronic cannabis users

Lundqvist & Ericsson 1988



The structure is used in

The original programme, designing a concept for each individual.

A manual based program with 18 sessions in six weeks focusing on 17-24 years old with a regular use more than six months

A manual based short program with six sessions in six weeks focusing on younger user or those who have used less than six months regularly .

For those who are experimenting, there is a three session course.

A guide to quitting Marijuana and hashish

It is a structured six-week treatment programme including sessions three times a week.

The main focus is on helping the cannabis users (17-20 year)
to redirect cognitive patterns and to regain intellectual control.

After completion of the six-week programme,
the patients are advised to take part in supportive sessions once a week for six weeks.

The programme is now a regular programme at the centre.

The 18 sessions manual.

Session 1
Illustration of THC elimination and anxiety reactions. Info about physical reaction.
Information about cannabis.
Test: SOC, SCL-90, BDI scale focusing on relations.

Session 2
Assessment feedback
Positive and negative attitudes to cannabis use
Why do you want to quit now?
What kind of help do you need?

Session 3
Acute effects of cannabis

Session 4
Chronic effect of cannabis

Session 5
Cognitive function and dysfunction

Session 6
Attitudes and patterns of use

Session 7
Drug lifeline

Session 8
Sociogram

Session 9
Lifeline

Session 10 (or when it is appropriate)
Session together with the parents

Session 11
Relaxation
Focus on emotions

Session 12
Continued focus on emotions
Guilt and shame

Session 13
Norms and values-behavior-abuse

Session 14
Juhariwindow or something more suitable

Session 15
The process of relapse

Session 16
Continued relapse prevention
Test: SOC, SCL-90, BDI scale focusing on relations.

Session 17
Assessment feedback
Look at the flipchart**,** repeat select the material to be used at the closing session.

Session 18 Closing session
Show the flipchart for the family and others.

Graduation and Diploma

Method

Fifty adolescents (75 admissions) including 5 girls, with at least six months daily use, completed the programme between year 2000 and 2004.

Average age at first cannabis use was 14.2 years (range 11 – 17).

At follow-up after one year, two-thirds were cannabis free;

- 35 per cent had had no relapses and
- 33 per cent had had one brief relapse,
- 57 per cent were free from all problematic use, including alcohol.

Patients with initial problematic alcohol use were less successful.

Remaining symptoms of anxiety and depression
were signs that indicate that extended support are needed.

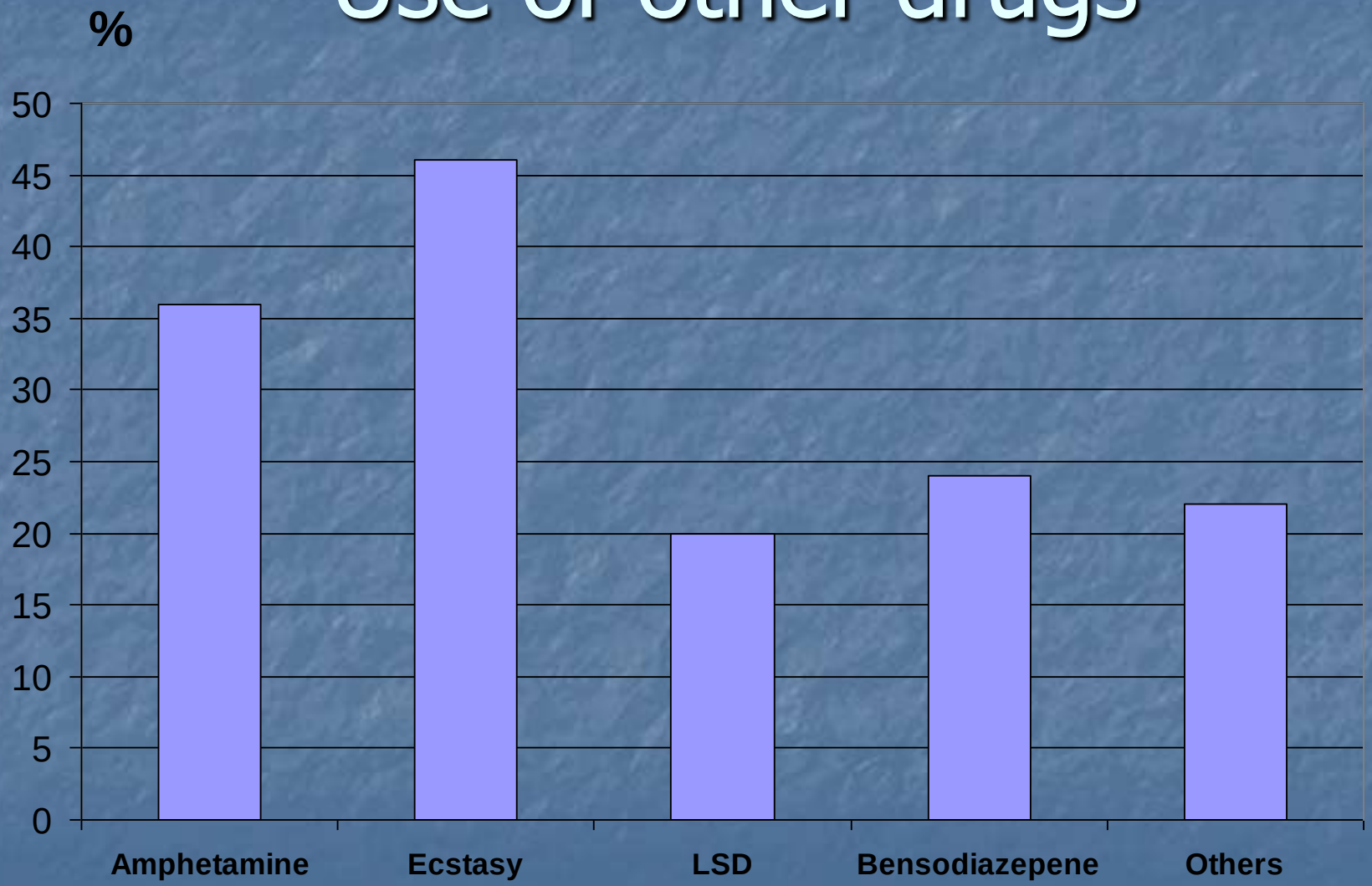
Finally, improvements could be seen in their overall life situation.

The subjects data

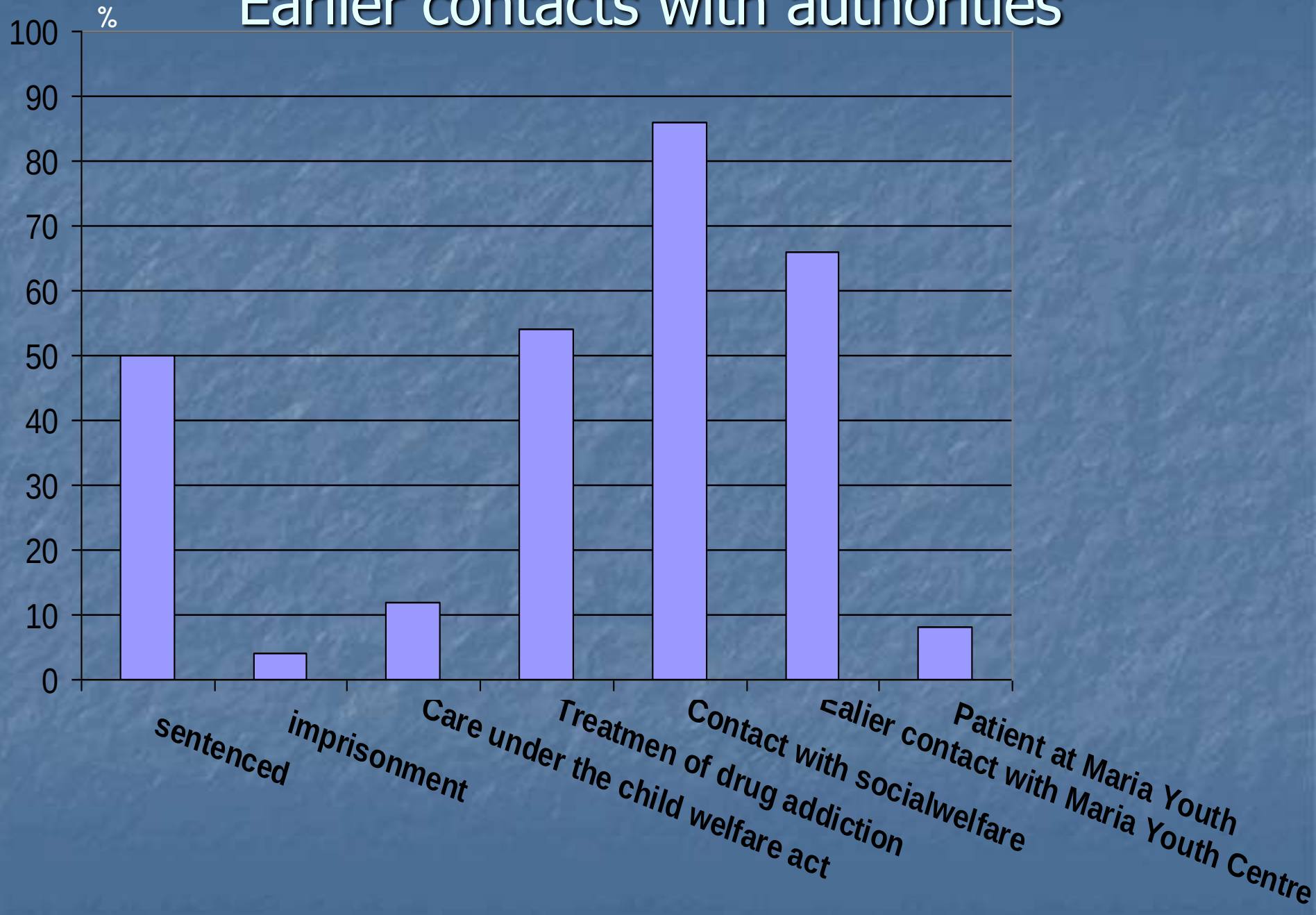
- First time of use 14.2 (11-17)
- Years of use 3.6 (1-8)
- Regular use (>3 times a week) 2.5 (1-6)

- 15 subjects reported problems with alcohol

Use of other drugs



Earlier contacts with authorities



Assessments

The clients were assessed

- at admission,
- after six weeks and
- after one year after concluding the course.

We used a battery of questionnaires consisting of

- Sense of coherence (SOC),
- Symptomchecklist-90 (SCL-90),
- Beck's Depression Inventory (BDI) and
- CAGE, focusing on alcoholproblems
- Scales focusing on life situation and relationships.

Aaron Antonovsky, 1987

To get a good sense of coherence the individuals perceive that

- **the stimuli deriving from ones internal and external environments in the course of living are structured, predictable, and explicable (comprehensibility);**

- **the resources are available to one to meet the demands posed by these stimuli (manageability);**

- **these demands are challenges, worthy of investment and engagement (meaningfulness).**

Results SOC

After six weeks of treatment the average SOC score increased

from 118 points to 138 points (normal range for a Swedish sample is 142 – 152).

These changes are statistically significant.

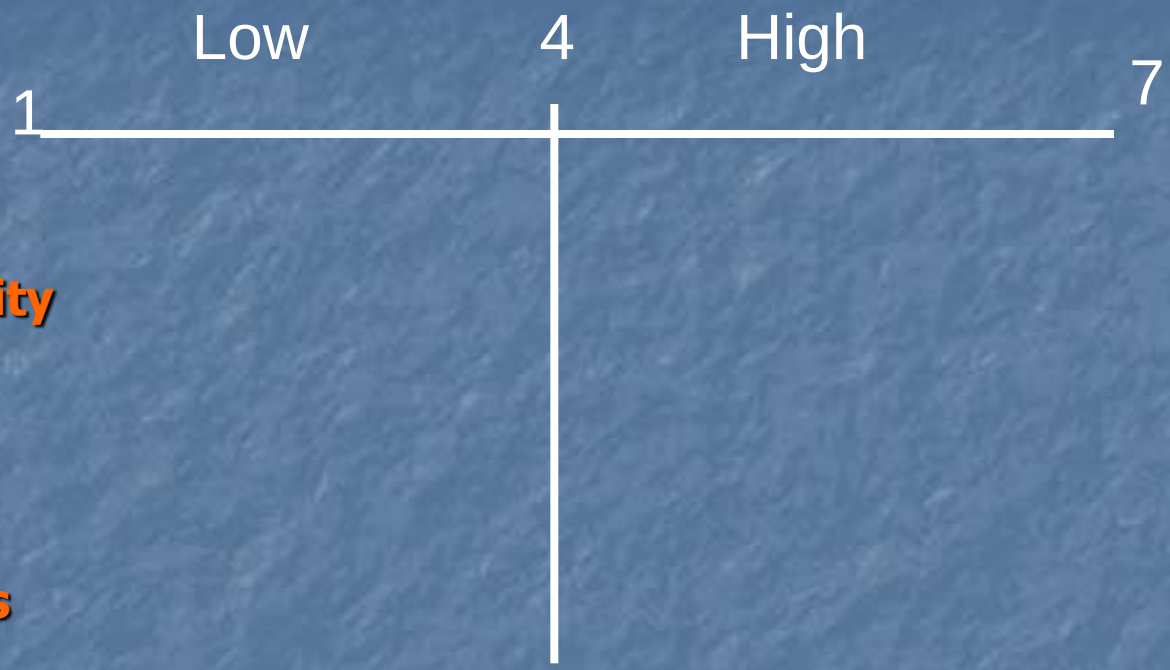
Moreover, the average score on each of the component scales

(comprehensibility, manageability and meaningfulness)

also increased significantly during the programme period.

At follow-up the average score was 145.

Which is, a further improvement. Although it is not statistically significant.

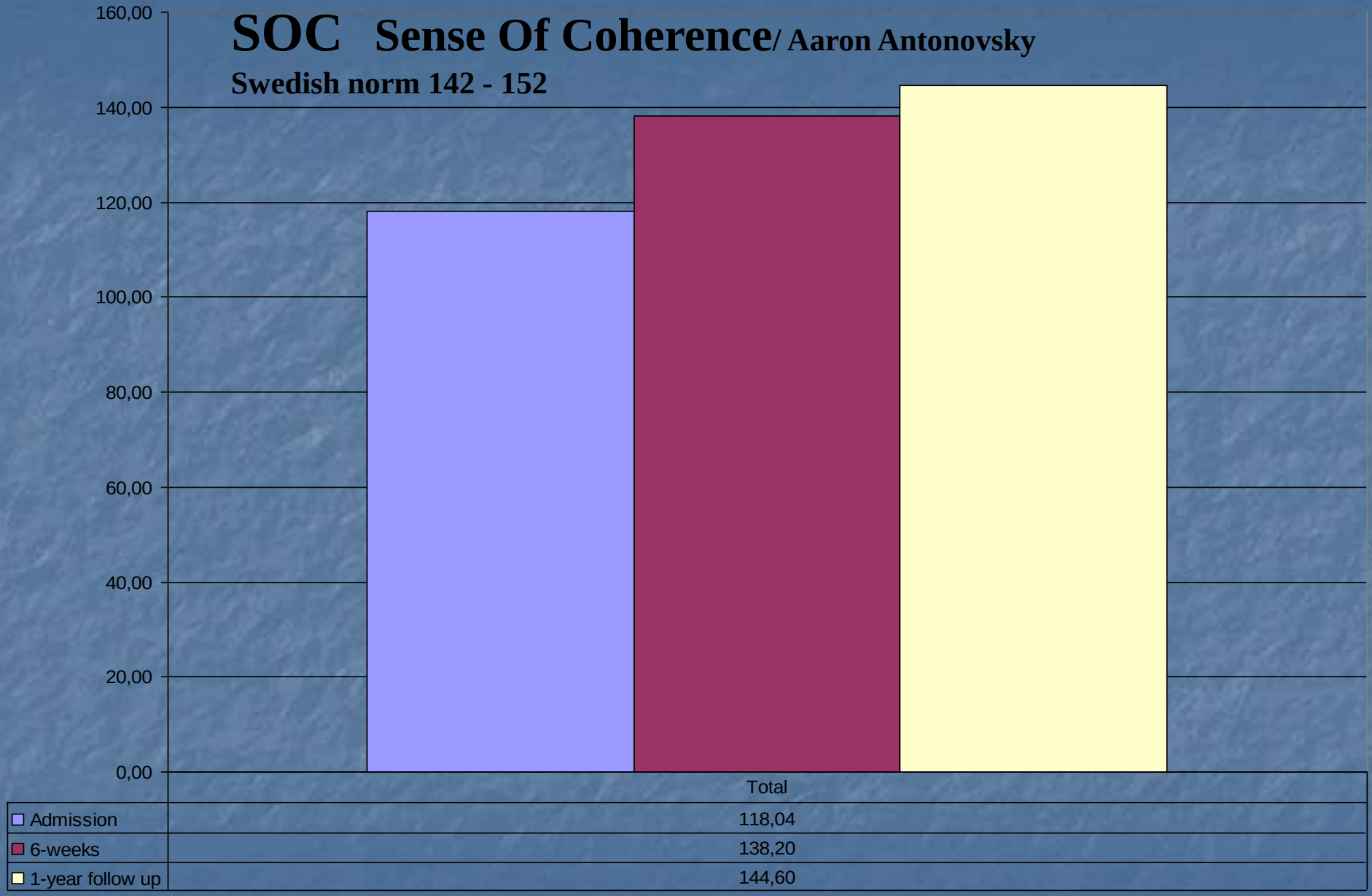


Good profile

Sense of Coherence

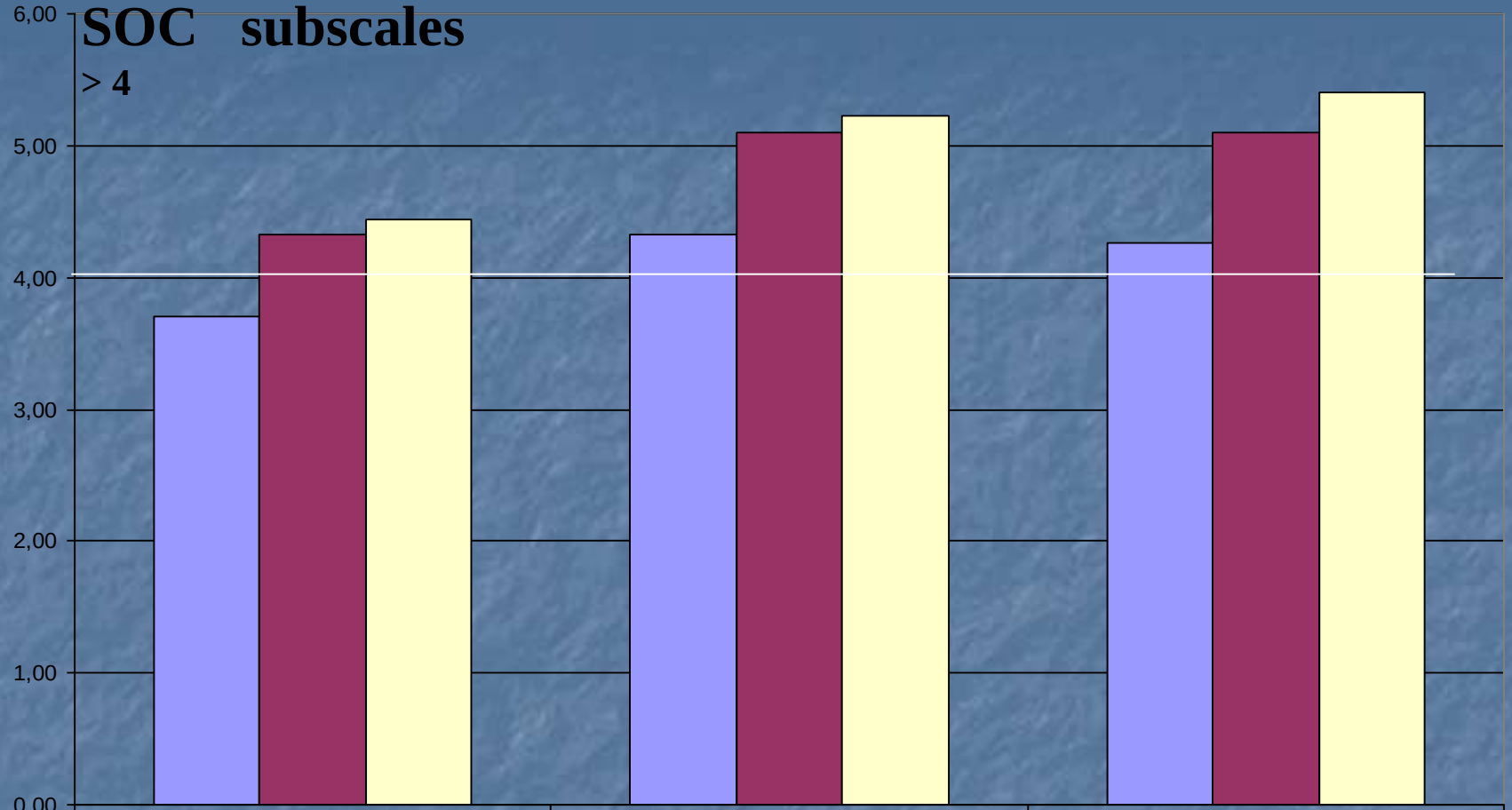
	Adm. (M, sd)	6-weeks. (M, sd)	t	df	sign[1]	N	1-year (M, sd)	t	df	sign	N
Comprehensibility	3,71 (0,71)	4,78 (0,71)	- 4,69	49	***	50	4,3 (0,8)	- 0,7	39	ns	40
Manageability	4,32 (0,87)	5,03 (0,77)	- 5,50	49	***	50	5,1 (1,0)	- 0,6	39	ns	40
Meaningfulness	4,26 (0,98)	5,06 (0,89)	- 5,86	49	***	50	5,3 (1,2)	- 1,6	39	ns	40
Total	118,04 (19,97)	137,84 (18,62)	- 5,95	49	***	50	141,2 (24,6)	- 1,1	39	ns	40

[1] *** p < .001; ** p < .01; * p < .05; ns= non significant


SOC Sense Of Coherence/ Aaron Antonovsky
Swedish norm 142 - 152
160,00
140,00
120,00
100,00
80,00
60,00
40,00
20,00
0,00
Total
Admission 118,04
6-weeks 138,20
1-year follow up 144,60

SOC subscales

> 4



	comprehensibility	Manageability	Meaningfulness
Admission	3,71	4,32	4,26
6-weeks	4,32	5,10	5,10
1-year follow up	4,44	5,22	5,40

SCL-90 Key Features

- The SCL-90 test contains only 90 items and can be complete in just 12-15 minutes.
- The test measure 9 primary symptom dimensions and is designed to provide an overview of a patient's symptoms and their intensity at a specific point in time.
- The progress report graphically displays patient progress for up to 5 previous administrations.
- By providing an index of symptom severity, the assessment helps facilitate treatment decisions and identify patients before problems become acute.
- The Global Severity Index can be used as a summary of the test.
- More than 1,000 studies have been conducted demonstrating the reliability, validity, and utility of the instrument.

Symptom Scales

SOM - Somatization
O-C - Obsessive-Compulsive
I-S - Interpersonal Sensitivity
DEP - Depression
ANX - Anxiety
HOS - Hostility
PHOB - Phobic Anxiety
PAR - Paranoid Ideation
PSY - Psychoticism

Global Indices

- Global Severity Index (GSI): Designed to measure overall psychological distress.

- Positive Symptom Distress Index (PSDI): Designed to measure the intensity of symptoms.

- Positive Symptom Total (PST): Reports number of self-reported symptoms.

Results SCL-90

The overall scores on SCL-90 (50 is normal with a range of 40 – 60), improved as follows:

Global severity index (GSI) – from 68 to 54.1 to 51;

Positive symptom distress index (PSDI) – from 61.2 to 50.6 to 51.9;

Positive symptom total (PST) – from 65.5 to 56.4 to 51.7.

Improvements were statistically significant.

Clients with a GSI score below 50 increased from 8 to 29 per cent.

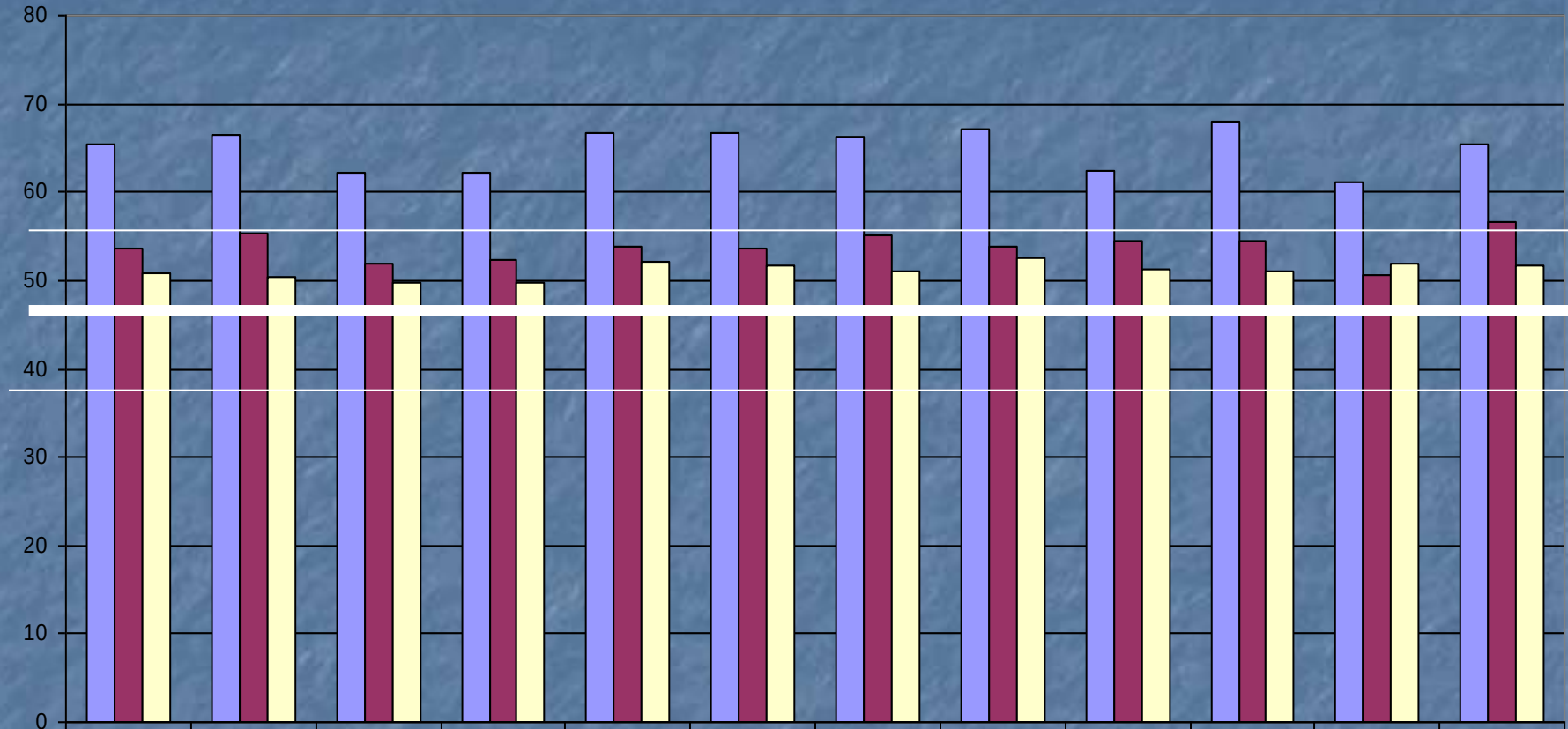
Clients showing a PSDI score below 50 increased from 18 to 54 per cent and with a PST score below 50 increased from 10 to 30 per cent).

SCL-90, standarized T-value; significance tested by mean (paired t-test)

	Adm. (M, sd)	6-weeks. (M, sd)	t	df	Sign[1]	N	1-year. (M, sd)	t	N
Somatization	65,5 (15,5)	53,6 (9,1)	5,59	49	***	50	53,7 (14,3)	0,6	41
Obsessive-kompulsive	66,5 (13,5)	55,1 (10,1)	6,55	49	***	50	52,9 (12,5)	1,0	41
Interpersonal sensitivity	62,1 (16,0)	51,7 (8,9)	5,70	49	***	50	52,0 (12,8)	0,3	41
Depression	62,3 (13,0)	52,2 (8,7)	5,96	49	***	50	52,6 (14,1)	- 0,1	41
Anxiety	66,8 (14,6)	53,6 (9,1)	7,31	49	***	50	54,4 (12,8)	- 0,2	41
Hostility	66,7 (15,3)	53,5 (10,6)	6,54	49	***	50	54,0 (12,9)	0,3	41
Phobic anxiety	66,2 (21,6)	55,0 (13,5)	5,14	49	***	50	52,8 (11,9)	1,3	41
Paranoid ideation	67,2 (15,5)	53,8 (9,6)	7,56	49	***	50	55,2 (13,3)	0,1	41
Psychoticism	62,5 (14,5)	54,1 (8,6)	4,87	49	***	50	53,2 (11,3)	0,6	41
Global Sever. Iind (GSI)	68,0 (14,7)	54,1 (8,5)	7,89	49	***	50	53,7 (12,0)	0,6	41
Pos. Sympt. Distr Ind(PSDI)	61,2 (10,7)	50,6 (7,6)	7,95	49	***	50	54,5 (14,0)	- 1,7	41
Total Pos Sympt (PST)	65,5 (10,8)	56,4 (10,2)	6,48	49	***	50	54,7 (12,2)	1,3	41
								ns	

[1] *** p < .001; ** p < .01; * p < .05; ns= non significant

SCL 90 Symptom Checklist



	Somatization	Obsessive-Compulsive	Interpersonal Sensitivity	Depression	Anxiety	Hostility	Fobic anxiety	Parnoid Ideation	Psychoticism	Global Severity Index (GSI)	Pos Sympt Distress Index (PSDI)	Pos. symptom Total (PST)
Admission	65,5	66,5	62,1	62,3	66,8	66,7	66,2	67,2	62,5	68	61,2	65,5
6-weeks	53,6	55,4	51,9	52,3	53,9	53,6	55,2	53,9	54,4	54,4	50,6	56,7
1-year follow up	50,9	50,4	49,7	49,8	52,1	51,7	51	52,6	51,3	51	51,9	51,7

Clients with a GSI score below 50 increased from 8 to 29 per cent.

Results BDI

The Becks Depression Inventory overall score and the scores on the various component scales all improved significantly during the programme.

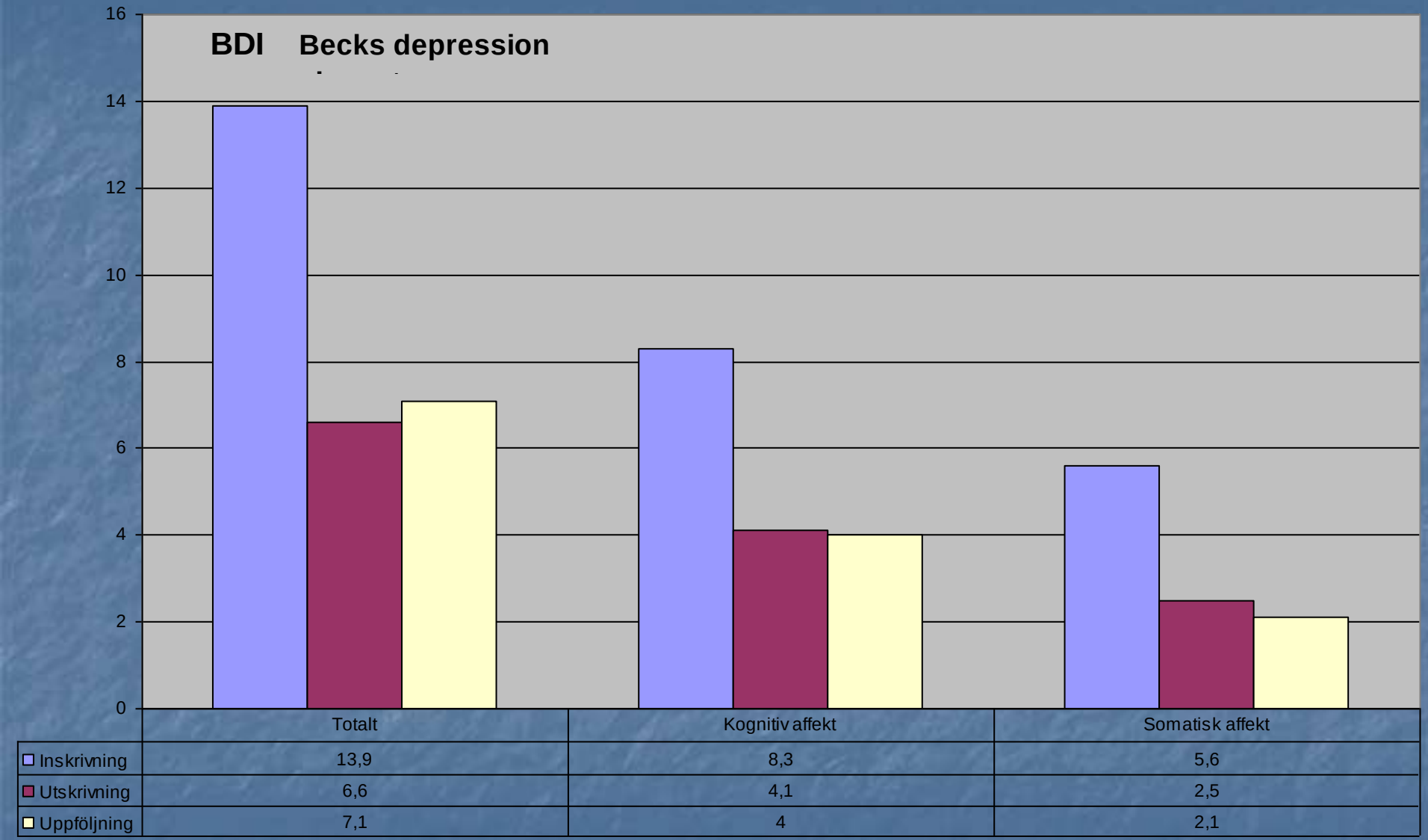
The proportion of clients with no symptoms of depression increased from 58 to 94 per cent.

At follow-up after one year, a further marginal improvement could be seen.

	Adm(M, sd)	6-weeks(M, sd)	t	df	sign[1]	N	1-year(M, sd)	t	sign[1]	N
Somatic affective	5,6 (3,2)	2,7 (1,6)	5,4	29	***	30	2,2 (2,2)	0,4	ns	24
Cognitive affective	8,3 (5,2)	4,1 (4,3)	4,8	29	***	30	5,0 (6,1)	- 0,4	ns	24
Amount	9,8 (4,3)	5,1 (3,2)	6,8	29	***	30	5,1 (4,6)	0,3	ns	24
Total	13,9 (7,3)	6,4 (4,9)	6,2	29	***	30	7,3 (7,9)	- 0,2	ns	24

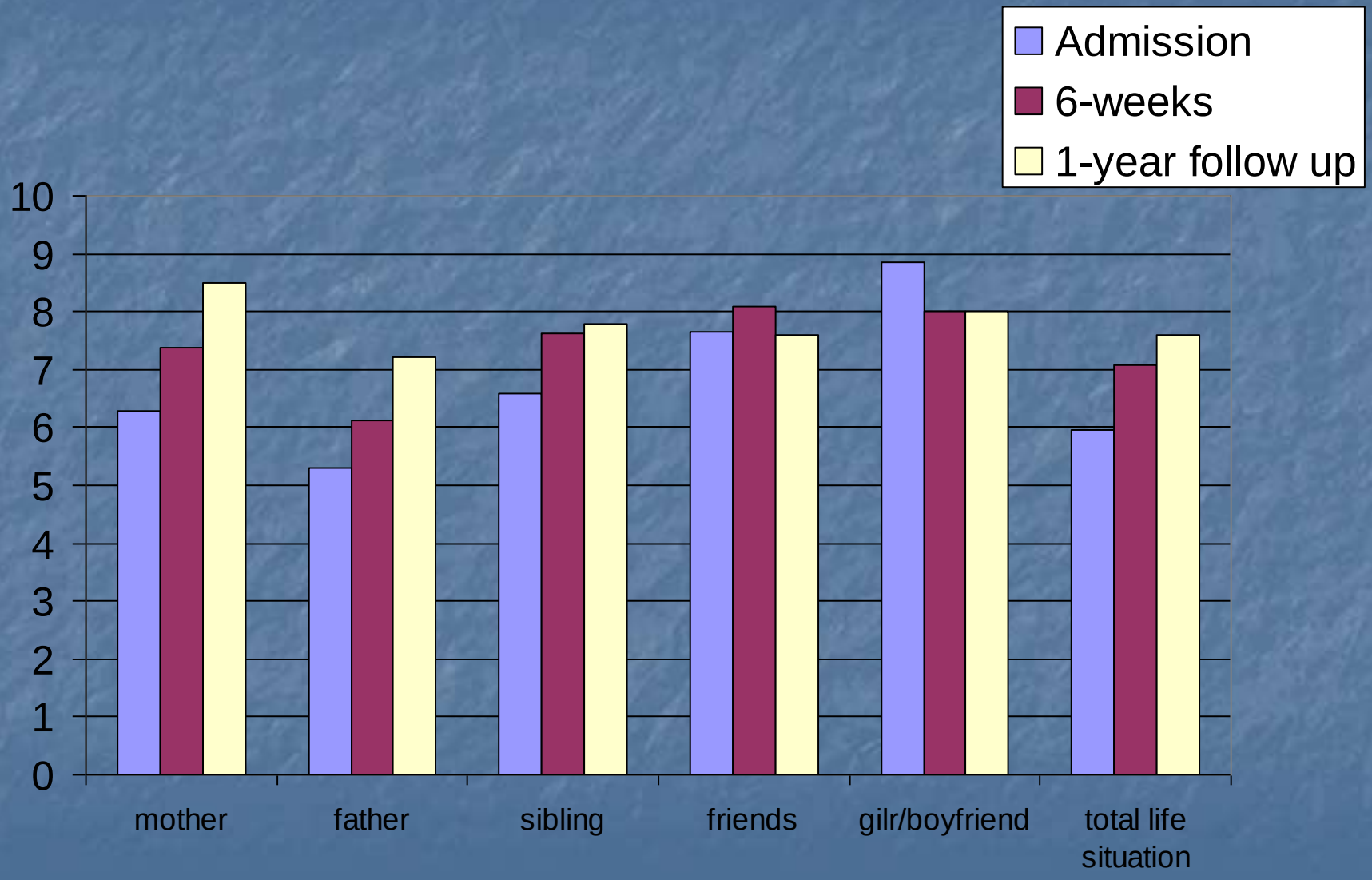
< 14 no depression

[1] *** p < .001; ** p < .01; * p < .05; ns= non significant



	Totalt	Kognitiv affekt	Somatisk affekt
Inskrivning	13,9	8,3	5,6
Utskrivning	6,6	4,1	2,5
Uppföljning	7,1	4	2,1

Estimation of relationship and life situation

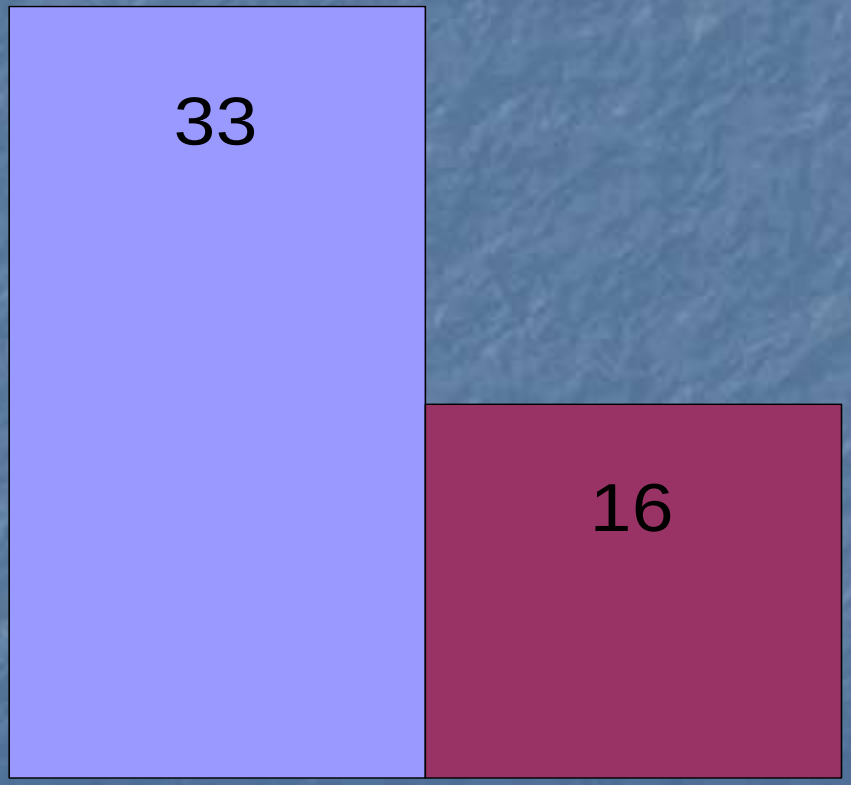


During the programme 30 clients had no relapse,
7 had 1 relapse and
13 had 2 or 3 relapses
Only one had more than 4 relapses

At the follow-up

No cannabis

67 %



Relapse

33 %

Who did better?

- Those, who had a higher sense of coherence at admission.
- Those, with fewer symptoms according to SCL-90 at admission.
- Those, who lived together with both parents.
- Those, who applied on their own initiative.

Who did worse?

- Those, who had an early onset of abuse, polydrug use and alcoholproblems.
- Those, who had higher points on anxiety and depression at the 6-weeks assessment.
- Those, who had a low estimation on the relationship to the mother.

25 clients did not complete the programme

13 were referred to a juvenile treatment clinic

2 got a job, but remained cannabis abstinent

2 did not comply with antabuse treatment

8 were not motivated

No significant differences between completers and not completers.

We had an impression or indication that the not-completers to a higher extent had a more severe family situation.

They had less problematic use of cannabis

Finally, 36 boys did not want to join the programme, because it was compulsory

The percieved benefit of the programme

- Knowledge of how cannabis affects the brain
- What happens physically
- What happens psychologically
- To get arguments to prevent a relaps
- Urine testing
- To get a personal space in the sessions

Conclusion

Young chronic cannabis users undergoing therapy were assessed with

- the Sense of Coherence scale and
- SCL-90 symptom
- scales and global indices.

The aim was to determine the extent to which patients showed improvements after completion of therapy after six weeks, and at follow-up one year later, in perceived comprehensibility, manageability, and meaningfulness of life, and to determine emotional distress. They were also asked to estimate relationship and life situation.

After six weeks of abstinence and treatment they display a significant improvement to normal values in sense of coherence and this improvement remained stable at the one year follow-up.

The result of SOC indicate that young chronic cannabis users seeking treatment at admission are characterised as:

- having a mean that is considerably lower than normal.
- experiencing inner or outer stimuli as not comprehensible in a rational way, but rather that the information is unorganized and incoherent.
- convinced that they are able to manage the problems and stimuli they receive.
- having an emotional and cognitive motivation, with the feeling that there are some things in life worth some interest, commitment or devotion.

These results are concordant with the findings in a similar study focusing on old chronic cannabis users by Lundqvist (1995a).

The significant improvement in SCL-90 values between admission and the six-week assessment indicate emotional distress that may be caused by the impact of the cannabinoids on human emotion and cognition. This improvement remained stable at the one year follow-up.

In our clients, the symptoms of depression disappeared after six weeks of abstinence indicating that the cannabinoids creates depression like symptoms. Improvement was seen at six-week assessment, and it remained stable at the one year follow-up.

At the one year follow-up,
- two-thirds were cannabis free (67%);
- 35 per cent had had no relapses and
- 33 per cent had had one brief relapse,
- 57 per cent were free from all problematic use, including alcohol.

Clients with initial problematic alcohol use were less successful.

Remaining symptoms of anxiety and depression were signs that indicate that extended support is needed.

Finally, improvements could be seen in their overall life situation.