# Analysis of the Dynamics of Treatment Motivation and Stress Coping of Substance Use Disorders Patients in Minnesota Program of Latvia

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## Abstract

**Background:** Stress is one of the strongest factors that provoke the use of drugs, which, in turn, highlight the importance of investigating of stress coping skills, especially due to fact that psychoactive substance (alcohol, narcotics, drugs) addiction is a pressing social problem in the whole world.

**Aim & Objectives:** Determine the drug and/or alcohol addiction patients' recognition level of his/her problem, identify drug and/or alcohol addicted patients' the internal and external motivational dynamics during the treatment, and discover drug and/or alcohol addiction patients' stress coping strategies.

**Methods/Study Design:** Demographic questionnaire developed by the study authors, SOCRATES 8A/ SOCRATES 8D questionnaires, Treatment motivation questionnaireas well as The Ways of Coping scale.

**Results/Findings:** There were significant changes in answers of respondents before and after participation in the Minnesota program. In the evaluation of the Stress coping ways scale it was noticed that patients more often use emotions oriented stress coping strategy, the results coincide with other studies in this area. After summarisation and evaluation of Socrates survey data before and after the treatment, such tendencies were noticed - before the treatment less than half of the patients rated their addiction as very severe, but after the treatment more than half of the patients found it very severe. After participating in the Minnesota's programme the majority of the patients noted positive changes, for instance, recognizing their problem and the ability and desire in keeping these changes in their future.

**Conclusion:** The program has an impact and effectiveness on patients during the treatment. Participation in the Minnesota program encourages patients to recognize their addiction problems and it guides a deliberate action towards addiction's reduction. The study results suggest that on emotions oriented stress coping strategy is more common in patients with addictions, it manifests as very explicit avoidance.

**Key words:** Stress coping, substance use disorder, motivation, Minnesota's program

## Introduction

In the European Union there are 24 health risk factors that cause illnesses or death and alcohol is the third risk factor, the first two being tobacco and high blood pressure.[1]

In recent years, the number of notifications on new psychoactive substances from EU Member States to European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) has increased dramatically.

About 290 newly synthesized substances were reported between the years 1997 and 2012. It is more than likely that with time this number would keep increasing, considering the relatively low costs for creating new derivatives of untapped substances.[2,3,4]

Alcohol consumption is widely spread in Latvia and other Baltic states. Furthermore, with the increase of intoxicating substances available in Latvia, also the prevalence of drugs has become a serious problem.

The research of the Health Behavior among Latvian adult population about individual health behavior shows that in Latvia alcohol consumption often correlates with many health problems. 84.3% of respondents (81.6% women and 87.2% men) report having used alcohol in the preceding year. The most prevalent alcoholic drink is beer among men and wine among women. The consumption of strong alcoholic drinks is very high. During the preceding week 33.4% of men and 13.5% of women have used strong alcohol. Extensive consumption of alcohol defined as drinking six or more alcohol units on single occasion at least one time per week has been used by 8.3% of respondents (14.1% men and 3.0% women), which is more than in 2010.[5]

Addiction is a chronic, often relapsing disease. Often in practice in many countries[6] as well as in Latvia substance use disorders (SUD) are being treated as if they were an acute disease.

In the situation of the limited financial resources in Latvia treatment of SUD is based on provided detoxification.[7,8] In this situation there is a high risk of relapse, while currently existing outpatient care system cannot provide adequate patient follow-up treatment for prevention of relapse.

It is very important to help patients who are ready to address their problems. Motivation for changing problem behavior, for example, drinking, is no synonymous with motivation for participating in treatment.[9]

Several researchers compare internal motivation with external and internal motivation is more likely linked with a long-term change than external motivation.[10]

Researchers Prochaska and DiClemente[11] described the Model of Stages of Change which proposes an explanation of the ways patients change their addiction related behavior through steps from precontemplation to contemplation, determination, action and maintenance.

Moreover, researcher Miller defined motivation as the probability that patient will enter into, continue and adhere to specific change strategy.[12]

Researchers Witkiewitz, Marlatt[13] indicated that alcohol addiction relapses determines both − intrapersonal and interpersonal factors, moreover a relapse could occur if an individual encounters stressful situations which he is not prepared to handle (e.g. the skills deficit) experiencing affective disorders (e.g. anxiety), which, in turn, reduce the risk of implementation of effective action (alcohol refusal skills).

In Latvia there is a possibility for patients to have a voluntary inpatient psychosocial treatment which includes institutional short programs − Minnesota and motivation. Addiction specialists of Latvia learned the Minnesota model in the U.S. and introduced it as one of the types for SUD treatment in 1990.

Minnesota program is a type of treatment that is based on the biopsychosocial model of the illness; during procedures of treatment the intensive group psychotherapy methods are being used. Overall, not many SUD studies are being carried out in Latvia. So far, there have only been studies about addiction prevalence, but there have not been studies about the motivation and personality of patients with SUD.

The pace of modern life has become very rapid and saturated. Stress is a part of our everyday life and it plays an important role in causing various diseases. Many studies have shown a connection between stress and origins of different addictions.[14] It is known that high stress levels promote health-threatening behaviors and, as a result, individuals more often engage in risky activities.[15] Researches about etiology of substance abuse have shown that stress is one of the strongest factors that provoke the use of drugs, which, in turn, highlight the importance of investigating of stress coping skills, especially due to fact that SUD is a pressing social problem in the whole world.

Effective stress coping skills are used to overcome life difficulties with the intention to sustain and maintain ones physical and psychosocial well-being[16]. A lot of research is based on Lazarus et al. stress coping typology that divides stress coping into problem-oriented (focused on problem's altering or removing) and on emotion-oriented (focused on managing affective states associated with or resulting from the problem). Task-oriented coping, also referred to as engagement coping, is defined as individual's' efforts aimed at solving the problem through planning or cognitive restructuring with the emphasis on the task. Emotion-oriented coping is defined as individual's efforts aimed at reducing stress through emotional responses, for example, blaming oneself. Avoidance-oriented coping refers to activities and cognitive strategies used to avoid stressful situations, for example, distracting oneself by doing other tasks. Both emotion- and avoidance-oriented coping draw attention away from the stressor and hence are also referred to as disengagement coping strategies.[17]. The literature on coping styles consistently suggests that task-oriented coping is negatively associated with depression, alcohol and drug use behaviors[17], delinquency, and HIV risk behaviors[17]. Studies show, that it is typical for patients with SUD to employ stress avoiding behavior which is one of the emotion-oriented stress coping strategies.

Stress coping strategies have been proposed as a potentially important factor in mediating or moderating the relationship between stress and high-risk situations for relapse and outcome. Treated alcoholics who were able to abstain from drinking were more likely to use active stress coping strategies than those who returned to drinking.[18] Alcohol-dependent patients

experiencing life stressors may exhibit less risk of relapsing if active strategies are part of their coping styles. Avoidant coping strategies predicted stress-related drinking and were directly related to negative drinking outcome in alcoholics.[19] Alcohol and drug abuse behavior itself is a form of maladaptive coping which serves to reduce negative affects. Watten suggested that abstainers from alcohol showed an affect-inhibiting repressive coping style, compared with moderate drinkers.[20] Patients who report an increase in adaptive coping and/or a decrease in maladaptive coping have better long-term alcohol-related outcomes.[21,22]

Increased use of coping skills is a primary mechanism of change in cognitive-behavioral treatments for substance use disorders.[23]

In another study, coping styles were more predictive than alcohol outcome expectancies of alcohol use measures in young adult drinkers.[24]

The purpose of the present study is to determine the SUD patients' recognition level of his/her problem, identify SUD patients' internal and external motivational dynamics during the treatment, and discover SUD patients' stress coping strategies.

## Methods

The study took place in all those Republic of Latvian institutions that realize the Minnesota program. The study involved all patients that were enrolled in the Minnesota program. In order to achieve the purpose of the study, a quantitative research method was used. 4 research tools were used: (1) a demographic questionnaire developed by the study authors, (2) SOCRATES 8A/ SOCRATES 8D questionnaires[25] which were used to evaluate the alcohol/drug user's readiness for changes. At the end of the survey, responses were categorized in three parts: recognition of the addiction, ambivalence and taking steps to get rid of the addiction, (3) "Treatment motivation questionnaire" [26], (4) as well as "The Ways of Coping" scale"[27].

Results of "Treatment motivation questionnaire" were divided into 4 subscales: External reasons, Internal reasons, Confidence and Help seeking, while, "The Ways of Coping" scale was distributed into 8 scales: Confronting Coping, Distancing, Self-Controlling, Seeking Social Support, Accepting Responsibility, Escape-Avoidance, Planful Problem Solving, as well as positive reappraisal.

The study was carried out in 2 stages − when the patient joined the ward, he/she received the four above mentioned research tools. After the treatment, depending on their pathology, the patient received and filled SOCRATES 8A or SOCRATES 8D and treatment motivational survey. The study received permission from the Ethics Committee.
The Socrates questionnaire data were processed in SPSS program and was found that the Cronbach's alpha for the questionnaire was 0.71 thus meaning that the questionnaire is consistent.

In order to evaluate the consistency of the motivation survey questions, it was found that Cronbach's alpha value was 0.73, meaning that the questions are consistent. Cronbach's alfa for The Ways of Coping Questionnaire was 0.9 which means that the questions within the survey are consistent.

## Results

In the research 55 SUD patients were asked to complete questionnaires. Participants were aged from 17 to 67; M = 42; SD = 12,408 males − 64%; females − 36%.

SOCRATES questionnaire data analysis shows (Table 1) a statistically significant increase in average points total of the Recognition scale (M=34.00; SD=1.69; p=0,001) and in the Taking steps scale (M=36.62; SD=3.34; p=0.000) after the treatment of Minnesota's Model (before the treatment, results respectively were M=32.49; SD=3.01 and M=33.49; SD=4.25). There are no statistically significant changes in the Ambivalence scale.

Treatment motivation questionnaire results (Table 2) demonstrate a statistically significant difference in 3 of the treatment scales before and after the therapy in Minnesota program. After treatment the average amount of points increases in the External reasons scale (M=4.37; SD=1.40; p=0.005, compared to indicators before treatment (M=3.98; SD=1.20), Internal reasons scale (M=6.62; SD=0.40; p=0.015, and before treatment (M=6.44; SD=0.58), also in the Confidence scale (M=3.25; SD=1.30; p=0.009, whereas before treatment (M=3.05; SD=0.95).

After collecting and analyzing Ways of Coping Questionnaire data (Table 3), statistically significant differences between male and female groups in two of eight scales can be noticed, where female average result is higher (Distancing scale M=1.70; SD=0.52; p=0.045 and Escape-Avoidance scale M=1.92; SD=0.40; p=0.015) than male result (respectively M=1.35; SD=0.60 and M=1.53; SD=0.60). Results show a statistically significant difference in average result in the Emotion-oriented Stress Coping scale, female results are higher (M=1.90; SD=0.32; p=0.047), than male (M=1.63; SD=0.44).

Spearmen's correlation was carried out in SPSS and the acquired data indicates that there is a statistically significant relationship before treatment among Recognition of the addiction and Internal reasons ($r = 0.37$; $p<0,01$) and Help seeking ($r = 0.49$; $p<0,01$). The results show, that there is a statistically significant correlation after treatment between Internal reasons and Help seeking ($r = 0.61$; $p<0,01$). Confidence also has a statistically negative significant relationship with Help seeking ( $r = -0.41$; $p<0,01$).

## Discussion

It is necessary to take into account that study participants were patients of an voluntary inpatient psychosocial treatment program (Minnesota), meaning that even a wish to take part in such treatment could be regarded as a kind of a motivation.

The present research shows that when a stressful situation occurs substance use disorder patients tend to use more emotion-oriented stress coping ways than problem-oriented,which means addictive patients use less active behavioral strategies when facing turbulent situations in life. This refers especially to females. With further analysis of emotion-oriented stress coping strategy it was acknowledged that avoidance and distancing are also more distributed within females.

These findings correspond to the results of similar researches. For example, studies conducted by the J.Askari with co-workers also showed that SUD patients use significantly less active behavioral strategies and problem oriented coping methods.[28]

This study also shows that females showed greater reductions in avoidance coping than men did.[29]

In the research literature concerning stress coping it is shown that avoidance as a stress coping way is effective in the short-term situations and management of uncontrollable stressors,whereas in the long-term situations and situations more controllable, this way of coping is seen as possibly maladaptive.[30]

It is very important to be aware of cognitive-behavioral patterns of SUD patients which show that improved stress coping strategies may help reducing addictive behavior tendency and facilitating abstinence.

Women show higher averages on emotion-oriented stress coping with shows that they cannot change their own situation and challenges in overcoming the main emphasis on the reduction of negative emotions, rather than solving the problem. This relates to the use of other research fields.

It would be essential to continue this research in long-term, in order to acknowledge the changes of coping strategies in time.

After collecting and analyzing data from the SOCRATES questionnaire (Table 1.), it was found that patients were more able to recognize their SUD problem after undergoing the Minnesota Model of SUD treatment. Other researches confirm that it consists with the essence of the Minnesota program and the objectives of denial of reducing SUD patients, improving self-observation capabilities, confirming other studies.[31]

After undergoing the treatment course patients also showed an increased capability of taking action against their SUD. Patient doubts about their addiction problem and their control over it did not show changes in results after the treatment course. Statistically significant correlations before and after the treatment course were found in their capability of taking steps against their addiction and in their recognition (of an addiction problem) in dynamics.

It was also noticed that ability to act against the addiction (Taking steps) increased during the treatment. In both situations - before and after Minesota program - patients equally strong felt doubts about their addiction and further ability of controlling it . This could be associated with the presence of a chronic illness and patient awareness that recovery process is long-term. Analyzing data about patients treatment motivation was found out that afther the treatment patients motivation for treatment increase: external factors and patients own desire to change their lives, compared to pre-treatment characteristics. Before and after undergoing treatment patients equally severely seeked help from the external sources. It corresponds to other researches about the impact on SUD patients from external pressures and support. [32]

Moreover, Polcin et al. [33] indicated that the intimate circle of family and friends also has a great impact.

Patient responses to the questionnaire about treatment motivation (Table 2.) showed that after undergoing treatment course they are statistically significantly more likely to be motivated to seek treatment. After the treatment course both External and Internal reasons became more

significant than they were before. Also patient confidence level received a boost after the treatment course.

Responses to the questionnaire about ways of coping showed that women more often than men uses distancing from the community and avoidance as solution to their problems. For men the second most common form of stress coping is self-control and search of social support. Both genders recognized the ability to take responsibility as the most effective way of coping, but the least effective way in their minds were confrontive coping. On emotion oriented stress coping way dominates for most of women. Men use equally frequently emotion and problem-oriented stress coping ways.

## Conclusion

There were significant changes in answers of respondents before and after participation in the Minnesota program, indicating that the program has an impact and effectiveness on patients during the treatment. Result evaluation showed that participation in the Minnesota program encourages patients to recognize their SUD problems and it guides a deliberate action towards addiction's reduction.

The study results suggest that on emotions oriented stress coping strategy is more common in patients with SUD. Study's scientific results are important steps towards evaluating the potential effectiveness and quality of Latvia's Minnesota program, as well as for a more thorough research and understanding of the patients. Due to the fact that the research took place in all Latvian Minnesota program facilities, the study has even greater value and quality. It is important to continue this survey and evaluate the long-term therapeutically results so that it is possible to evaluate the sustainability of the results for patients.

**Conflict of Interest:** None declared.

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**Table 1:** Mean values of the Factors of the Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES) in dynamic 28 Days program

| Factors | Before | | After | | |
|---|---|---|---|---|---|
| | M1 | SD1 | M2 | SD2 | P value |
| **Recognition** | 32.49 | 3.01 | 34.00 | 1.69 | **0.001** |
| **Ambivalence** | 17.08 | 2.08 | 17.23 | 3.12 | 0.821 |
| **Taking Steps** | 33.49 | 4.25 | 36.62 | 3.34 | **0.000** |

**Table 2:** Mean values of the subscales Treatment Motivation Questionnaire before (1) and after (2) therapy (n=47)

| Subscales | M1 | SD1 | M2 | SD2 | P value |
|---|---|---|---|---|---|
| **External reasons** | 3.98 | 1.20 | 4.37 | 1.40 | **0.005** |
| **Internal reasons** | 6.44 | 0.58 | 6.62 | 0.40 | **0.015** |
| **Help seeking** | 6.17 | 1.01 | 6.52 | 0.54 | 0.289 |
| **Confidence** | 3.05 | 0.95 | 3.25 | 1.30 | **0.009** |

**Table 3:** Mean values of the Ways of Coping Questionnaire

| Scale | Female (n=18) | | Male (n=32) | | |
|---|---|---|---|---|---|
| | M | SD | M | SD | P |
| **Confrontive Coping** | 1.55 | 0.46 | 1.52 | 0.60 | 0.864 |
| **Seeking Social Support** | 1.65 | 0.73 | 1.63 | 0.66 | 0.927 |
| **Planful Problem Solving** | 1.70 | 0.55 | 1.70 | 0.63 | 0.953 |
| **Distancing** | 1.70 | 0.52 | 1.35 | 0.60 | **0.045** |
| **Self-Controlling** | 1.76 | 0.43 | 1.70 | 0.50 | 0.612 |
| **Accepting Responsibility** | 2.30 | 0.60 | 2.13 | 0.60 | 0.378 |
| **Escape-Avoidance** | 1.92 | 0.40 | 1.53 | 0.60 | **0.015** |
| **Positive Reappraisal** | 1.80 | 0.54 | 1.45 | 0.64 | 0.080 |
| **Problem-oriented Stress Coping** | 1.63 | 0.43 | 1.62 | 0.52 | 0.950 |
| **Emotion-oriented Stress Coping** | 1.90 | 0.32 | 1.63 | 0.44 | **0.047** |