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THE TREATMENT FOR SUBSTANCE USE DISORDER PATIENTS AND THEIR CHANGES OF PSYCHOSOCIAL FUNCTIONING IN DYNAMICS

Summary of the Dissertation

Scientific discipline – Health Care

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ABBREVIATIONS

AA− Alcoholics Anonymous

CDPC− Centre of Disease Prevention and Control (*Slimību profilakses un kontroles centrs, SPKC*)

EI− Emotional intelligence

EMCDDA− European Monitoring Centre of Drug and Drug Addiction

EU − European Union

GA− Gambler Anonymous

IM− Interior Ministry

i/v− intravenous

M− Mean

CM − Cabinet of Ministers

MP− Minnesota Program

NA− Narcotics Anonymous

NHS− National Health Service (*Nacionālais veselības dienests, NVD*)

PAS− psychoactive substances

SUD – substance use disorder

RCPAD− Riga Centre of Psychiatry and Addiction Disorder (*Rīgas psihiatrijas un narkoloģijas centrs, RPNC*)

s/c− subcutaneous

SD− Standard deviation

SI− Social intelligence

Technology− medical technology for substance use disorder

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ACTUALITY OF THE STUDY

Addiction to psychoactive substances (alcohol, drugs, medication) is a pressing problem worldwide. As a health risk factor (causing illness, death) in the EU on a list of 24, alcohol is right behind tobacco and high blood pressure (Anderson et al., 2012). Alcohol is widely used in Latvia and the Baltic States (Ginter, Simko, 2010). In the year 2011 in Latvia, 6.82 liters of absolute alcohol were consumed on the average per one resident, aged 15-64 (NHS, 2012).

The prevalence of drugs is not a lesser serious problem in Latvia and Europe. According to the European Monitoring Center of Drug and Drug Abuse (EMCDDA) the number of persons who have used drugs has climbed to 210000. This compared to 64000 in 2011 (EMCDDA, 2011).

Addiction now affects more and more young people, women, even children. This could be connected to poor accessibility to aid services, psychoemotional agitation brought on by the economic crisis, depression, increased alcohol and drug use and lack of quality clinics, problems in diagnosing addiction, difficulties medical personnel have when coming in contact with an addict. Research studies indicate that physicians have problems in communicating with patients suffering from addiction, and struggle when having to select treatment methods for them (Tang et al., 2005). As the German researchers have pointed out, only 5% of substance use disorder (SUD) patients receive treatment that reflects the bio-psycho-social essence the illness (Heinz et al., 2003). We can see a similar situation in Latvia, where, for example, treatment often consists of providing remission in 24 hours with a 1 or 2 or 5 year guarantee, indicating that a number of physicians deny the bio-psycho-social essence of the illness. Taking into account the malady's bio-psycho-social etiology and impact on all aspects of daily existence as well as the individual patient's personality traits, treatment and rehabilitation require

longer duration with combined methods. At the same time, one must look at the problem not only from the physician's perspective but also from the patient's; therefore key here is analyzing the patient's previous treatment experience. No research studies have been conducted in Latvia to determine the viewpoints and experience of patients and doctors concerning SUD treatment, but the above written points to its necessity. The research that has appeared primarily pertains to the spread of addiction not to treatment methods and their aspects as patients and doctors see it, furthermore there has been no evaluation of a patient's psychosocial functioning and dynamics thereof regarding treatment methods. Research results fail to reflect the methods, their effectiveness, the patient's well-being following treatment, therefore they cannot serve as a foundation for improving the treatment system for SUD patients.

Medical research has examined a SUD patient's physical health problems as well as psychosocial deficiencies (Miller, Hester, 2003; Nolen-Hoeksema, Hilt, 2006), that hinder daily functioning, interpersonal contact, successful performance at work, the difficulty in adequately and critically comprehending and accepting the illness and the need for long-term treatment (Nolen-Hoeksema, Hilt, 2006; Lesch et al., 2011). Negative psychosocial functioning induces alterations in such human aspects as emotional (Kun, Demetrovics, 2010; Nehra et al., 2012) and social intelligence (Ham, Garcia, 2010). Studies have shown how closely intertwined SUD and low emotional and social intelligence are, which could result in decreased ability to conduct constructive relationships, adapt to life's ever—changing transient situations, and understanding one's self. Despite studies on this subject far and wide internationally, Latvia has yet to conduct one, therefore it would be important to determine psychoactive substances (PAS) addicts' psychosocial functioning indicators. The author of this dissertation searched but could not find research on addiction patients' emotional and social intelligence conducted both jointly, which would make this contribution unique.

The scientific novelty

1. For the first time in Latvia, a research study of the doctor's viewpoint on substance use disorder treatment, and the experience of patients regarding these methods.
2. Also for the first time in Latvia, an evaluation of a substance use disorder patients' psychosocial functioning indicators – emotional and social intelligence, plus the dynamics of these indicators following detoxification and treatment after Program of Minnesota model (MP).

Aim of the study

To analyze and systematize the viewpoint and experience of doctors on methods of substance use disorder treatment, the options a patient has for help, and changes in dynamics in a patient's emotional and social intelligence indicators following detoxification and administration of the Minnesota Program.

Objectives of the study

1. Determine the experience and viewpoint of various medical specialists from various regions in Latvia on substance use disorder treatment, analyze findings.
2. Determine and analyze substance use disorder patients experience regarding treatment methods, self-help groups and psychotherapy.
3. By using the Emotional Intelligence and Social Intelligence survey as a guide, gather data on psychosocial functioning abilities for detoxification and Minnesota Program patients in dynamics.

Hypotheses

1. A doctor's awareness of substance use disorder treatment methods, recommending them to patients and their practice, differs according to specialization and region.
2. Patients surveyed preferred suggestion methods and detoxification rather than psychotherapeutic methods.
3. Emotional and social intelligence indicators are lower for substance use disorder patients, compared to the control group.
4. There are statistically significant differences in emotional and social intelligence indicators between alcohol and drug addicts, and there are statistically significant changes in dynamics in emotional and social intelligence indicators for detoxification and Minnesota Program patients.

Structure of the Dissertation

The dissertation is written in the Latvian in a classical style – Abstract in Latvian and English, Introduction, Literature review, Material and Methods, Results section, Discussion, Conclusions, References, List of the authors' publications, Acknowledgement and Supplement – a total of 199 pages. The dissertation contains analytical-illustrative material – 37 tables, 26 pictorials and 24 pages in Supplement. The literature list consists of 349 literature references.

1. RESEARCH MATERIALS AND METHODS

1.1. First Phase – Pilot research

Phase One was conducted in several stages in the period February 1, 2009–March 1, 2010, preparing doctors' survey questionnaire, a patients' survey questionnaire and approbating them in pilot research studies.

Participants: 87 were interviewed, of them: (1) 4 SUD treatment specialists to draw up the questionnaires; (2) Questionnaire for Doctors approbation pilot research study gathered 43 respondents-physicians; (3) Questionnaire for Patients approbation pilot research study gathered 40 SUD patients.

Instruments used:

1) **Questionnaire for Doctors** − 14 questions (on social-demographic data, addiction treatment methods, self-help groups, 2 open questions on shortcomings and necessary improvements in the field).

2) **Questionnaire for Patients** − 24 questions (on social-demographic data, about PAS use, treatment methods received, self-help groups, psychotherapy).

1.2. Second Phase − Basic research

Phase Two was conducted in several stages in the time period March 1, 2010 to March 31, 2012.

Research participants:

1) Questionnaires for Doctors were sent electronically to the 99-registered associations of the Latvian Doctors' Society, except the Latvian Pathologists' Association. 586 questionnaires were deemed valid, and were used testing the first hypothesis and the additional one.

Breakdown of respondents into research groups based on research instruments used

Doctors (n=586)	Patients (n=620)		Control group (n=110)
	Out-patient (n=215)	In-patient (n=405)	
Questionnaire for Doctors (586)	*Questionnaire for Patients* (620)		*Emotional and social intelligence survey* (110)
		Detoxification group (n=201)	MP group (n=204)	
		Emotional and social intelligence survey (405) 3 measurements	

2) **620 SUD patients** were surveyed in both out-patient clinics (215 respondents), and in-patient facilities (detoxification and MP wards in Riga − 405 respondents), making up the base group of respondents-patients (see table 1.1.). In order to determine a SUD patient's choices in treatment methods, all 620 respondents filled out a Questionnaire for Patients. To evaluate a patient's emotional and social intelligence indicators, the in-patient group (n=405) in addition filled out Emotional intelligence (EI) and Social intelligence (SI) survey. These respondents were dividend into sub-groups based on addiction, alcohol or drugs, and the treatment administered − detoxification and MP. Taking data into account about gender specifics in EI and SI, questionnaire responses were examined according to gender.

From the Minnesota Program's patients repeatedly data from 2 questionnaires (SI, EI) was gathered via 3 measurements: (a) in beginning MP (1st measurement), (b) completing MP (2nd), (c) 6 months after MP treatment (3rd). 204 respondents took part in the first measurement, 2.− 157 (77.0%), 3.− 109 patients (53.4%). From the detoxification ward patients, data was gathered based on 2 measurements: (a) in concluding detoxification treatment, (b) 6

months afterward. 201 patients took part in the first measurement, 6 months later – 94 patients (46.8%).

3) **Control Group** (n=**110**) was made up of respondents from universities.

<u>**Research Instruments:**</u>

1) **Tromsø Social Intelligence Scale**, TSIS (Silvera et al., 2001); adapted in Latvia by Kuznecova, Slosberga (Kuznecova, Slosberga, 2006). One factor (social skills) rates social activity, the two remaining – social cognition. The Social intelligence survey is made up of 21 assertions, 7 in each scale, creating 3 scales: (1) Social information processing scale; (2) Social skills; (3) Social awareness.

Responses are evaluated via a 7-level Likert Scale, with 1 being "strongly disagree", and 7 – "strongly agree". Points are summed up, but only after re-coding questions with a negative meaning. The more points a respondent receives, the higher the SI indicator.

2) Bar-On Emotional Quotient Inventory, EQ-i (Bar-On, 1997), adapted in Latvia by A.Gaitniece-Putane (2008). According to the Bar-On model, there are 5 EI factors instrumental in an individual's successful functioning: 1) *Intrapersonal ability,* that includes emotional self-awareness, assertiveness, self-regard, self-actualization and independence, 2) *Interpersonal ability,* that includes empathy, interpersonal relationships and social responsibility, 3) *Adaptability,* that includes problem solving, reality testing, and flexibility, 4) *Stress management*, that includes stress tolerance and impulse control and 5) *General mood,* that includes happiness and optimism. 133 assertions in the survey are evaluated on a 5-level Likert Scale for "does not or rarely pertains to me" to "often or always pertains to me". Points are summed up, but only after re-coding questions with a

negative meaning. The more points a respondent receives, the higher the EI indicator.

1.3. Statistical analysis

Descriptive statistic have used for group characterization, arithmetic mean and standart deviation were calculated.

χ^2 test, t−test and Mann−Whitney test was used to compare the groups. Mixed design dispersion analysis ANOVA and dispersion analysis ANOVA with repeated measures, taking into account Bonferroni test, were used as the main statistical methods applied in this research.

SPSS software version 16 was used in data processing.

2. RESULTS

In two stages all together, 1403 respondents were interviewed (doctors, SUD patients, control group members) and data from 3043 questionnaires analyzed.

2.1. Doctors' Survey Results
2.1.1. Doctors' social-demographic data

586 various medical specialists from a number of regions in Latvia, aged 24-74, average age – 46.8 (SD±10.8), 78% (457) of respondents were women. A majority are internal specialists (217; 37.0%), general practitioners – 149 (25.4%), psychiatrists – 94 (16.0%), surgeons, traumatologists −38 (6.5%), psychotherapists – 29 (4.9%), pediatricians – 27 (4.6%), addictions specialists – 25 (4.3%), dentists – 7 (1.2%). More than half of the above work in Riga (299; 51.0%), Pieriga region−18 (3.1%), Kurzeme −67 (11.4%), Latgale −60 (10.2%), Vidzeme −63 (10.8%), Zemgale −79 (13.5%).

In Riga, the field for most of the respondents (44.5%) is internal medicine. In Pieriga region the majority (38.9%) are also internal specialists and general practitioners (33.3%). The same applies for Kurzeme, with most (32.8%) in internal medicine, also in general practice (29.9%). In Latgale – 46.7%, Vidzeme −50.8% and Zemgale−39.2% are general practitioners.

2.1.2. Doctors' survey results based on specialization and work in regions

Asked to name SUD treatment method they are familiar with, the respondents say detoxification (96.8%), suggestion without a medication (86.3%) and Minnesota Program (83.6%). Respondents are the least informed about drug addicts rehabilitation communities (62.6%). But 1.0% noted that

they are not informed about any of the methods. Despite knowing about MP and drug addicts rehabilitation communities, 21.7% of respondents do not know any of the 3 Minnesota Programs available in Latvia and 44.9 % are not familiar with any of the rehabilitation communities. The least informed are surgeons/ traumatologists.

Of all the fields of medicine, addiction specialists themselves are best informed about SUD treatment, but by region – respondents in Vidzeme and Zemgale. Still, better informed about certain methods are other specialists, for example, psychiatrists about suggestion without medication, and subcutaneous administering of depot medication; psychotherapists – about MP. The least knowledgable about SUD treatment are dentists and surgeons/ traumatologists, but by regions – respondents in Kurzeme.

In response to the question, which of the treatment methods they would recommend to patients, a majority named the Minnesota Program (60.4%) and detoxification (60.2%), with one-fourth (25.8%) respondents recommending suggestion without injection and rehabilitation communities. Suggestion with depot subcutaneously recommend 22.9%, intravenously – 18.4%, substitution therapy for drug addicts – 21.2%. But 21.5% marked none of the above methods.

Detoxification is recommended the most by addiction specialists (88.0%), psychiatrists (80.9%) and general practitioners (75.2%), by region, Vidzeme's respondents, less in Riga. MP is most often recommended by addiction specialists (92.0%), psychiatrists (81.9%) and psychotherapists (79.3%). In addition, almost one half of addiction specialists recommend suggestion methods. Suggestion, with or without an injection, more often is recommended by Latgale respondents, (25.0–41.7%), less by those in Kurzeme (7.5%–25.4%). Those who do not advocate any of the treatments the least are in Vidzeme (7.9%), but the most are in Riga (29.8%).

Respondents not only recommend methods, but they are also a part of their daily professional practice, with detoxification the top method (30.7%). The other methods are practiced by 1–4%. But 65.4% said that they practice none of the methods. By specialization, the most treatment methods are practiced by addiction specialists (detoxification, suggestion with medication i/v and substitution therapy for drug addicts).

Region-wise, the above treatments are practiced the most by respondents from Vidzeme (46.0%) and Latgale (45.0%), the least in Riga (20.7%). Suggestion methods are practiced by respondents in Pieriga region the most – 5.6%.

Asked about self-help groups, respondents noted that they know the most about AA – 39.1% and where a branch is located in their respective region. 12.5% and 7.3% are informed about NA and GA respectively. 52.4% do not know whether any self-help entity is found in their region, but 8.9% are convinced that there are none. Compared by specialization, addiction specialists are the best informed about self-help groups (70.0%), the least – pediatricians (4.0%). Despite the fact that many are not informed about self-help groups, 66.0% recommend visiting them. In Kurzeme region, this recommendation is the strongest (77.6%), the least – Latgale (58.3%).

2.1.3. Viewpoint of doctors surveyed on shortcomings in substance use disorder treatment and necessary improvements

The responses by doctors were grouped by keyword and data analysis, using descriptive statistics. 28.2% of respondents pointed out that they know nothing about any shortcomings in SUD treatment. The remaining 71.8% expressed their opinion about the most critical problem areas, besides several could be mentioned as one. Most frequently (26.8%) mentioned is a lack of information on the part of both doctors and patients, as well as the

government's failure to care for the populace (22.5%); patient poor compliance and the refusal of medical attention (18.1%); patients' financial difficulties (13.8%) and a lack of cooperation among institutions (6.7%). Asked for suggestions for improving SUD treatment, 34.9% of respondents said that they did not know. The remaining 65.1% responded with specific ideas. Doctors most often pointed to the need to be better informed (24.8%), by improving access to treatment-related services (17.3%), lower fees for services (10.9%); preventive medicine, cooperation among institutions and access to psychotherapy (6.2−6.9%). The dissertation contains detailed data and survey responses.

2.2. Patients' Survey Results
2.2.1. Patients' social-demographic data

The age of respondents had a wide range − 18 to 69, making the average − 39.7 (SD±11.2). 67.1% are males. 463 are alcoholics (74.7% of all PAS addicts) [men − 301 (65.0%), women −162 (35.0%)]; 157 (25.3%) are drug addicts [men−115 (73.2%), women − 42 (26.8%)]. 121 have a primary education (19.5%), secondary education− 404 (65.2%), higher−95 (15.3%). 344 are in relationships registered and non-registered (55.4%). Employed - 255 (41.1%). For detailed information, turn to the dissertation.

Since the results of survey questionnaires (EI, SI) after treatment in differing wards, the respondents were dividend into two sub-groups:

1) Detoxification patients (n=201) ages 18 to 66, average age 41.7±11.0; 141 males (70.1%); 169 (84.1%) alcoholics.

2) Minnesota Program patients (n=204) ages 18 to 65, average age 36.9±11.1; 125 males (61.3%); 162 alcoholics (79.4%). Both groups were equalized by age.

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2.2.2. Pacients data in connection with use of psychoactive substances

8.2% (51) patients (n=620) do not consider themselves addicts, notwithstanding that 32 (62.7%) noted that they had undergone treatment. Broken down by treatment method, 28 (54.9%) detoxification patients, 3 (5.9%) MP patients and 20 out-patients do not consider themselves addicts.

In naming key aspects of life that are most influenced by PAS use, a majority of patients marked relationships (74.4%), health (67.3%) and finances (64.2%). By percentage, the most consequences were mentioned by male drug addicts, but the least – female alcoholics. 6.8% female alcoholics, 5.0% alcohol and 1.7% drug addicted males said that PAS use has caused no negative consequences in their lives.

2.2.3. Data on treatment pacients have undergone

Respondents (n=620) pointed out they have undergone detoxification the most (70.2%). 27.9% have experienced suggestion without medication; MP− 19.7%; suggestion with i/v medication − 17.6%; suggestion with s/c medication − 12.3%; substitution therapy− 6.1%; rehabilitation communities− 2.4%.

Asked how times they have received the treatment they mention, 20,7% (whom detoxification used) said detoxification 5 or more times. 7.5% of respondents said suggestion without medication, while 20−35% − some form of treatment twice.

Almost one-fourth (24.8%) of respondents have attended a self-help groups, almost every fifth one (18.4%) has had individual psychotherapy, 6.5% − group psychotherapy. Over one-half of respondents (58.4%) had attended a self-help groups for up to 1 year, but individual and group psychotherapy up to

six months – 67.5% and 47.5%, respectively. 19.5% attended self-help groups up to 3 years, individual or group psychotherapy − 9.6% un 12.5%, respectively.

2.2.4. Patients' Emotional Intelligence indicators

The dissertation has full data on the results. In table 2.1 below showing a comparison between SUD <u>patients and control groups</u> in the EI survey, it is clear that the lowest average indicators are for the patient groups, except on the Interpersonal relationships scale (compared to Mann-Whitney U-criteria).

2.1. table

Emotional Intelligence descriptive statistical indicators for substance use disorder patients and control groups (sums for scales-Mean, Standard deviation)

Scales / factors	Men				Women			
	Research group (n=247)		Control group (n=60)		Research group (n=127)		Control group (n=50)	
	M	SD	M	SD	M	SD	M	SD
Emotional self-awareness	25.14	4.75	25.83	5.53	**23.80**	5.23	**28.60**	3.84
Assertiveness	22.12	4.25	23.48	4.28	**21.43**	4.80	**23.96**	5.07
Self-regard	**27.79**	5.62	**32.95**	6.09	**26.73**	6.32	**32.20**	5.42
Self-actualization	**30.16**	5.36	**34.58**	6.04	**29.45**	5.59	**34.76**	4.73
Independence	**19.94**	4.13	**22.72**	4.90	**19.16**	4.56	**21.24**	3.85
Empathy	29.21	4.91	29.50	3.98	30.34	4.79	30.88	3.38
Interpersonal relationships	37.92	6.11	37.87	6.05	**37.26**	6.65	**41.04**	5.05
Social responsibility	36.04	5.74	37.17	5.08	38.06	6.03	39.72	5.20
Problem solving	27.64	4.66	29.14	4.10	**26.33**	5.03	**28.86**	3.84

Scales / factors	Men				Women			
	Research group (n=247)		Control group (n=60)		Research group (n=127)		Control group (n=50)	
	M	SD	M	SD	M	SD	M	SD
Reality testing	**31.68**	5.20	**36.22**	5.87	**30.79**	6.14	**36.44**	5.86
Flexibility	**22.94**	4.80	**25.50**	4.00	**22.13**	4.65	**25.38**	5.16
Stress tolerance	**26.17**	5.13	**31.15**	7.06	**24.45**	5.40	**30.00**	5.04
Impulse control	**27.42**	7.02	**31.15**	7.90	**25.87**	6.92	**30.22**	5.67
Happiness	**29.68**	4.99	**34.07**	5.07	**28.70**	5.48	**33.70**	5.86
Optimism	**28.70**	4.60	**31.13**	4.84	**27.48**	5.54	**30.72**	4.58
Intrapersonal factor	**125.15**	17.55	**139.57**	22.12	**120.56**	20.71	**140.76**	18.99
Interpersonal factor	103.17	13.69	104.53	12.51	**105.65**	14.53	**111.64**	11.57
Adaptability factor	**82.27**	10.71	**90.93**	12.11	**79.24**	12.27	**90.68**	11.75
Stress management factor	**53.59**	9.67	**62.30**	13.20	**50.32**	10.27	**60.22**	9.76
General mood factor	**58.37**	8.28	**65.20**	9.21	**56.18**	9.50	**64.42**	9.79
Total EI	423.55	46.81	**462.95**	58.54	411.96	54.64	**467.72**	54.22

Statistically significant lower indicators (p≤0.05) in the men's patients group, compared to the men's control group, are seen in 9 scales: Self-regard, Self-actualization, Independence, Reality testing, Flexibility, Stress tolerance, Impulse control, Happiness and Optimism, and in 4 out of 5 factors, except Interpersonal, as well as the total EI. In the women's patient group statistically important lower indicators (p≤0.05), compared to the control group, are seen in 13 out of 15 scales, in all 5 factors and total EI.

In order to determine EI of the <u>alcoholics and drug addicts-patients</u> research group (see table 2.2.), the groups were compared to Mann-Whitney U-criteria (results of conclusive statistic can see in the dissertation). Statistically significant (p≤0.05) higher average indicators for male alcoholics, compared to drug addicts, in 6 scales: Self-actualization, Empathy, Social responsibility,

and Problem solving, Reality testing, Impulse control, in 3 factors: Interpersonal, Adaptability, Stress management and the total EI.

EI scale/factor statistical indicators for the research group, grouped by gender and addiction type

	Men (n=247)				Women (n=127)			
	Alcoholics (n=206)		Drug addicts (n=41)		Alcoholics (n=101)		Drug addicts (n=26)	
	M	SD	M	SD	M	SD	M	SD
Emotional self-awareness	25.25	4.75	24.61	4.75	23.99	4.87	23.04	6.49
Assertiveness	22.20	4.10	21.68	4.97	21.33	4.34	21.81	6.35
Self-regard	27.54	5.42	29.00	6.49	26.29	6.14	28.46	6.85
Self-actualization	**30.58**	5.52	**28.07**	3.91	29.81	5.57	28.04	5.57
Independence	20.14	3.77	18.98	5.56	18.91	4.49	20.12	4.79
Empathy	**29.61**	4.76	**27.17**	5.17	**30.76**	4.50	**28.69**	5.56
Interpersonal relationships	38.07	6.02	37.17	6.59	37.34	6.43	36.96	7.59
Social responsibility	**36.93**	5.37	**31.61**	5.50	**38.68**	6.02	**35.62**	5.51
Problem solving	**28.07**	4.59	**25.51**	4.43	**26.88**	5.00	**24.19**	4.63
Reality testing	**32.08**	5.14	**29.68**	5.12	31.06	6.29	29.73	5.52
Flexibility	23.05	4.72	22.41	5.22	21.89	4.62	23.04	4.72
Stress tolerance	26.23	5.17	25.85	5.00	24.57	5.38	23.96	5.57
Impulse control	**27.88**	6.98	**25.12**	6.85	26.26	7.13	24.38	5.93
Happiness	29.69	5.02	29.59	4.88	28.78	5.16	28.38	6.70
Optimism	28.93	4.46	27.54	5.13	27.84	5.23	26.08	6.54
Intrapersonal factor	125.71	17.01	122.34	20.01	120.33	20.11	121.46	23.28
Interpersonal factor	**104.61**	13.34	**95.95**	13.29	106.78	14.66	101.27	13.39
Adaptability factor	**83.20**	10.45	**77.61**	10.90	79.83	12.52	76.96	11.18
Stress management factor	**54.11**	9.60	**50.98**	9.71	50.83	10.78	48.35	7.85
General mood factor	58.62	8.18	57.12	8.79	56.62	8.58	54.46	12.52
Total EI	**426.25**	45.87	**404.00**	47.67	414.40	54.37	402.50	55.73

Female alcoholics, compared to female drug addicts, have statistically significant (p≤0.05) higher average indicators in 3 scales: Empathy, Social responsibility and Problem solving.

Descriptive statistic calculations (see table 2.3.) and mixed design dispersion analysis ANOVA were used to compare the EI indicators for detoxification and MP male patients in the first and third measurements. Statistically significant (p≤0.05) *time effect* have occurred in 6 scales (Independent, Interpersonal relationship, Problem solving, Flexibility, Stress tolerance, Impulse controle) and Interpersonal factor, the average indicators for detoxification patients are higher in 3rd measurement comparing with MP patients. It can be seen that in 6 months time statistically significant (p≤0.05) differences have occurred *between groups* in the all scales and all factors, except Self-regard scale.

2.3. table

Descriptive statistics: EI indicators in two testings for MP and detoxification <u>male patients</u>

Scales/ factors	1st measurement				3rd measurement			
	MP (n=73)		Detoxification (n=60)		MP (n=73)		Detoxification (n=60)	
	M	SD	M	SD	M	SD	M	SD
Emotional self-awareness	**23.60**	5.21	**26.70**	4.53	**24.97**	2.74	**26.62**	4.00
Assertiveness	**20.84**	4.97	**23.03**	3.35	**20.70**	2.20	**21.88**	2.69
Self-regard	26.58	6.22	28.35	4.31	28.32	3.48	28.70	3.05
Self-actualization	**29.70**	5.63	**30.93**	5.80	**28.52**	2.89	**30.13**	4.22
Independence	**20.38**	4.56	**19.42**	3.55	**19.51**	3.79	**23.20**	3.99
Empathy	**27.90**	5.30	**30.00**	5.03	**28.60**	3.50	**29.27**	4.33
Interpersonal relationships	**36.53**	6.74	**38.92**	5.55	**34.34**	2.99	**36.45**	2.57
Social responsibility	**34.81**	6.35	**36.98**	6.02	**34.82**	3.50	**35.53**	4.14
Problem solving	**26.82**	5.22	**28.98**	4.45	**28.85**	3.55	**29.02**	3.32
Reality testing	**30.71**	5.27	**32.48**	5.30	**29.56**	3.55	**31.40**	4.26
Flexibility	**22.59**	5.56	**23.17**	3.78	**23.62**	3.38	**25.42**	4.09
Stress tolerance	**25.08**	5.72	**26.98**	4.69	**29.63**	2.94	**31.02**	3.04
Impulse control	**27.30**	7.04	**28.07**	7.16	**25.47**	6.91	**25.85**	6.21

Scales/ factors	1st measurement				3rd measurement			
	MP (n=73)		Detoxification (n=60)		MP (n=73)		Detoxification (n=60)	
	M	SD	M	SD	M	SD	M	SD
Happiness	**28.70**	5.09	**30.60**	4.91	**27.97**	2.09	**30.93**	2.96
Optimism	**28.00**	4.56	**29.15**	4.91	**28.60**	3.41	**29.48**	3.46
Intrapersonal factor	**121.10**	20.38	**128.43**	14.79	**122.01**	8.85	**130.53**	11.92
Interpersonal factor	**99.25**	14.72	**105.90**	14.51	**97.77**	8.42	**101.25**	9.04
Adaptability factor	**80.12**	12.82	**84.63**	9.43	**82.03**	7.32	**85.83**	9.07
Stress management factor	**52.38**	10.86	**55.05**	9.62	**55.10**	8.24	**56.87**	7.04
General mood factor	**56.70**	8.57	**59.75**	8.42	**56.58**	4.26	**60.42**	5.19
Total EI	**409.55**	54.10	**433.77**	42.71	**413.48**	24.06	**434.90**	32.55

Note: F(2.129)

Statistisically significant (p≤0.05) *time effect* and difference *between groups* have occurred in the Independence, Interpersonal relationships, Problem solving, Flexibility, Stress tolerance scale and Interpersonal factor. In addition, on the Independence and Problem solving scales, statistically significant (p≤0.05) *time factor and group interaction* has occurred. There are no statistically significant (p>0.05) differences with the Self-regard scale.

Descriptive statistic calculation (see table 2.4.) and mixed design dispersion analysis ANOVA were used to compare female detoxification and MP patients' EI indicators in the first and third measurements. The results show that statistically significant (p≤0.05) *time effect* have occurred in 5 scales (Assertiveness, Self-actualization, Interpersonal relationship, Reality testing, Stress tolerance) and in Interpersonal factor. In addition, female patients of both departments have similar changes of average indicators in 4 scales: average indicators on the Assertiveness, Self-actualization, Reality testing scales dropped, but rised on the Stress tolerance scale, but average indicators on all

scales (except Reality testing scale) in the third measurement were higher for MP female patients.

Table 2.4.

Descriptive statistics: EI indicators in two testings for MP and detoxification <u>female patients</u>

| Scales/ factors	1st measurement				3rd measurement			
	MP		Detoxification		MP		Detoxification	
	(n=36)		(n=34)		(n=36)		(n=34)	
	M	SD	M	SD	M	SD	M	SD
Emotional self-awareness	**23.67**	5.25	**26.56**	3.56	**25.50**	2.62	**25.56**	2.85
Assertiveness	**21.83**	4.44	**23.94**	4.97	**21.53**	2.30	**21.24**	3.48
Self-regard	25.69	6.83	28.41	7.08	28.72	2.73	27.97	3.60
Self-actualization	**30.42**	5.86	**30.85**	4.68	**29.17**	2.43	**28.26**	3.23
Independence	20.00	4.70	20.88	4.93	19.14	3.59	18.85	4.69
Empathy	29.53	5.10	31.12	5.14	30.75	2.32	29.38	3.66
Interpersonal relationships	**36.72**	6.06	**40.15**	6.93	**36.78**	2.65	**35.24**	3.91
Social responsibility	37.28	7.20	37.97	6.23	36.36	2.99	36.00	3.17
Problem solving	26.17	5.47	26.71	5.61	28.50	3.51	27.15	3.18
Reality testing	**30.56**	6.20	**33.06**	5.47	**28.67**	3.79	**29.32**	4.76
Flexibility	22.94	4.52	23.26	4.40	24.31	4.09	23.44	2.83
Stress tolerance	**24.86**	5.46	**25.94**	5.27	**30.36**	3.05	**29.12**	3.11
Impulse control	26.75	6.18	25.41	7.38	23.72	6.92	24.12	7.09
Happiness	28.75	4.51	29.91	6.35	28.72	2.10	29.74	2.11
Optimism	**26.86**	5.71	**29.06**	5.80	**30.64**	3.77	**27.68**	5.02
Intrapersonal factor	121.61	21.45	130.65	19.45	124.06	9.33	121.88	10.96
Interpersonal factor	**103.53**	14.48	**109.24**	15.82	**103.89**	6.47	**100.62**	8.68
Adaptability factor	79.67	12.17	83.03	11.80	81.47	6.81	79.91	7.24
Stress management factor	51.61	9.63	51.35	10.34	54.08	8.74	53.24	7.47
General mood factor	**55.61**	8.64	**58.97**	11.03	**59.36**	3.78	**57.41**	4.99
Total EI	**412.03**	55.52	**433.24**	51.95	**422.86**	22.19	**413.06**	26.81

Note: F (2.66)

Reality testing and Emotional self-awareness scales show statistically significant (p≤0.05) difference *between groups*. Statistically significant (p≤0.05) *time factor and group interaction* has been in 4 scales (Emotional self-awareness, Empathy, Interpersonal relationship, Optimism), 2 factors (Interpersonal, General mood) and total EI: average indicators in the third measurement grew up for MP patients, while these indicators for detoxification patients fell down, and as a result, MP patients indicators were higher in these scales and factors, except similar average indicators on the Emotional self-awareness scale. In the female group there were no statistically significant (p>0.05) changes in the Self-regard, Independence, Social responsibility, Problem solving, Flexibility, Impulse control, Happiness scales and in the Intrapersonal, Adaptability and Stress management factors.

To determine changes for the MP group between three measurements, descriptive statistics calculations and dispersion analysis ANOVA with repeated measures was used, taking into account Bonferroni test. Data was recorded only for those respondents, taking part in all three measurements (n=109).

In the men's group, statistically significant changes (p≤0.05) were seen in 5 of 15 scales (Self-regard, Interpersonal relations, Problem solving, Flexibility, Stress tolerance). The changes (p≤0.05), as the average indicators grew for these scales, happened between the 1st and 2nd measurements in the Self-regard (see pic. 2.1.) and Flexibility scales, between the 2nd and 3rd – on the Stress tolerance scale (see pic. 2.2.) and between the 1st and 3rd on the Problem solving scale. Significant changes (p≤0.05) for the males, took place on the Interpersonal relationships scale as their average indicators decreased between the 1st and 3rd measurements. On the Reality testing scale, statistically significant (p≤0.05) differences appear between the 2nd and 3rd measurements, but there were no *time effect*.
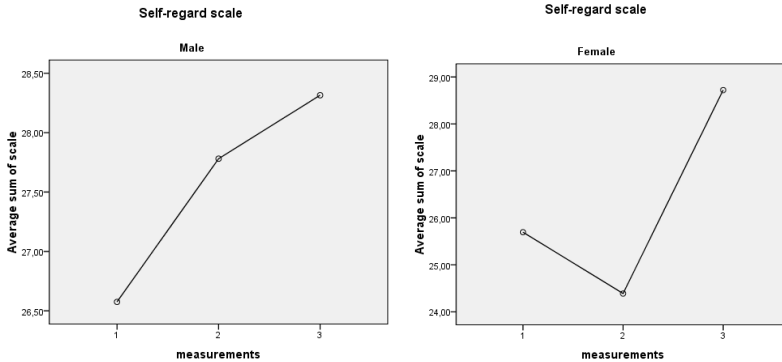
2.1. picture. Self-regard scale, changes in average indicators, 3 measurements, MP patients, males at left, females at right
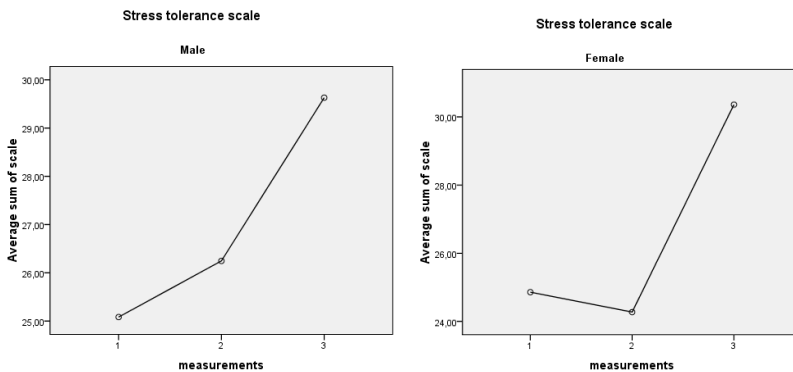
2.2. picture. Stress tolerance scale, changes in average indicators, 3 measurements, MP patients, and males at left, females at right

In the group of women, of the three measurements statistically significant changes (p≤0.05) have occurred on 4 of 15 scales: Emotional self-awareness, Self-regard (see pic. 2.1.), Stress tolerance (see pic. 2.2.), Optimism, and 1 factor – General mood, besides all changes occurred between the 1st and 2nd measurements, boosting their average indicators.

2.2.5. Patients' Social Intelligence Indicators

Statistically significant (p≤0.05) lower indicators are the case for patients (male and female) Social awareness scale and total SI, compared with control group respondents.

Alcohol and drug addicted men and women's SI comparison, using descriptive and conclusive statistics, shows that male drug addicts have higher (p≤0.05) indicators regarding Social skills scale and total SI than alcoholics. Women show no differences here, compare by addiction type.

Descriptive statistics' and mixed design dispersion analysis ANOVA were used on detoxification and MP men and women to determine changes in 6 months between 1st and 3rd measurements.

In comparing descriptive statistics' data between 1 and 3, it is clear that the mean has increased for MP males on all SI scales and the total SI. For detoxification patients, in repeat testing, the mean has grown in the Social skills and Social awareness scales, but dropped in Social information processing scale and the total SI.

As can be seen in conclusive statistics' data, statistically significant *time effect* (p≤0.05) between the first measurement and a repeat test 6 months later appear in the Social skills scale and the total SI, besides, the Social skills average indicator increases for both patient groups, while in the total SI – for MP patients. However, both average indicators are higher for the MP patients. *Time factor and group interaction* showed that there are statistically significant differences (p≤0.05) between the MP and detoxification groups on the Social information processing scale and the total SI (see 2.3 pic.). This points to the fact that changes have occurred in the groups, moreover, each in its own way: for MP patients, SI average indicators have increased and are higher than for detoxification patients.
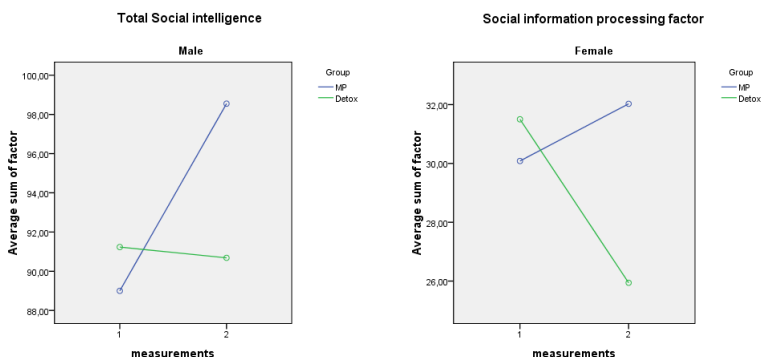
2.3. att. Time and group interaction in the total SI for the male group (L) and in the Social information processing scale for the female group (R)

Looking at the descriptive statistics, it is clear that the average indicators <u>for MP women</u> in the 3rd measurement grew on all scales and the total SI, while average indicators for detoxification patients grew only on the Social information processing scale, decreasing in all others. As a result, on the Social information processing scale and the total SI, MP patients have higher average indicators.

Results from conclusive statistics show that in *time effect* statistically significant ($p \leq 0.05$) on the Social awareness scale: average indicators increased for MP women, but for detoxification women, they decreased. Nevertheless, the highest average indicators in the 3rd measurement are shown by these women. Statistically significant ($p \leq 0.05$) *time factor and group interaction* can be seen on the Social information processing factor (see pic. 2.3.): average indicators for MP female patients have climbed, while for female detoxification patients they tumbled; highest average indicators in the 3rd measurement - MP females. There were no statistically significant ($p > 0.05$) changes between the 1st and 3rd measurements on the Social skills scale and the total SI.

In comparing SI results for <u>MP patients</u> both male and female, in all three measurements, descriptive and conclusive statistical data (Bonferroni test)

show that statistically significant *time effect* appears in the total SI for men, furthermore, the changes occurred between the 1st and 3rd measurements. The remaining results did not show any statistically significant changes or differences.

3. DISCUSSION

When initiating the discussion part of the research, its restrictions has to be pointed out. The questionnaires− patient and doctors ones, are not psychometricaly tested (validity, reliability), but this was not the goal of the research. Questionnaires have to be valuated as an instrument for marking out problems so that makes more conscious addiction treatment situation from the viewpoint of doctors and patients. Considering that the answers of respondents were contradictory, we can observe that these answers measure people's perceptions, but not reality.

8.4% of doctors practisizing in Latvia were questioned. Those questioned doctors numerically random statistical reliability indicators, but as a restriction of this research the use of the available selection has to be pointed out. It is possible that such a poor response of respondents is caused by lack of interest or expierence of doctors in correspondind matter. Questionning electronically also can be mentioned as a restriction that could cause difficulties in receiving answers and answering back to those respondentswhich were out of electronical resources for any reason.

But nevertheless social-demographic data of doctors and their distribution in regions (except region of Pieriga) is very close to that one that exists in population (CDPC, 2011). According to distribution of doctors specialities, have to point out that more represented are psychotherapists (80%), psychiatrists (37%) and addiction specialists (42%) specialities (CDPC, 2012b), to whom SUD patients with mental disorders or acute somatic disorders turn for help. Less questioned were specialists in internal medicine field (5%) and dentists (0.5%)− that is also to be mentioned as a restriction of the research. In scientific literature of the researches according to doctors attitude towards SUD patients, their awareness about addiction problems, we can find out, that mostly doctors of one kind of speciality are questioned (general practitioners,

emergency physicians etc.) (Tang et al., 2005; Rapley et al., 2006). It was important to mark out the significance of this problem in this research, therefore physicians of different specialities were questioned. Selection of patients numericaly conform indicators of statisticaly validate selection and also is close to the distribution in population according to gender, addiction, average age of treated patients, but nevertheless as a restriction of research the available selection use has to be mentioned. Selection of patients for the research was made according the included criteria. The biggest number of patients who interrupted research is determined by lack of patients retention, and cooperation, as well as with EI and SI questionnaries that had to be answered in Latvian, also the long time that people had to spend when answering and also difficulties to make measurements after 6 months. This occurred to be common in other cases of researches described in scientific literature, with 40−50% of SUD patients who interrupted the research (De Wildt et al., 2002; Murgraff et al., 2007), therefore addicted patients are motivated by cash prizes, increasing them at every repeated measurement (El-Bassel et al., 2005). In many researches, especialy where clinical groups are used, number of respondents is not so big or they are not randomized, but the available selection is used (Moyer, Finney, 2002). Conclusion of authors making systematic review, is that randomized as well as unrandomized, researches could supplement each other, if we look at treatment effectivity or valuation of improvements for SUD patients. It is important to point out that demographic data of those who interrupted research does not differ statistically from data of respondents who continued taking part in the research. Psychometricaly tested questionnaires of EI and SI were used in the research, however they were selfestimation questionnaires, and considering the structure of personality of SUD patients, the difficulties in testing reality, lack of retention could influence the results of this research.

3.1. Viewpoint on addiction and treatment methods based on doctors' survey

The research conducted has determined that a doctors' information level on SUD treatment, advice to patients thereof, and use in daily professional practice differs from medical specialization to specialization and region.

Among those who were surveyed, only a few specialists are fully informed, and only about certain methods, i.e. psychiatrists and addiction specialists about detoxification, psychotherapists about MP. Therefore, and rightly so, when asked about shortcomings in SUD treatment, many name a lack of information on the part of doctors and patients alike. A number of dentists, surgeons, internal specialists, even general practitioners, noted that they are not familiar with any SUD treatment method. An additional probe would be enlightening on the fact that there are addiction specialists who are poorly informed about substitution therapy, rehabilitation communities for drug addicts, MP and suggestion methods. This indicates that they are incapable of providing PAS addiction patients full value medical attention, making the need clear for information on SUD treatment for specialists of all branches, even addiction specialists.

Regionally, the best informed about treatment are in Vidzeme, primarily about suggestion methods, along with respondents from Zemgale (about substitution therapy, MP). The latter is probably because Jelgava Hospital has an MP ward. Respondents from Kurzeme are less informed.

Regarding which SUD treatment method to recommend to PAS-addicted patients, two-thirds of doctors said that most often they recommend MP and detoxification. In comparing data with methods chosen by the patients themselves, we see that three-fourths have undergone detoxification, but MP – only one-fifth. This leads one to believe that (1) either the specialist insufficiently explains the necessity of such treatment, or (2) the patient's

defense mechanism (denial) stymies "doctor's orders". These facts echo what the surveyed physicians note about the low motivation and compliance among patients. This in turn coincides with scientific research that only a part of PAS addicts receive adequate treatment (Booth et al., 2001; Heinz et al., 2003), therefore educational solutions are necessary for doctors and patients.

Regionally, respondents in Latgale, Vidzeme and Pieriga environs recommend their patients suggestion methods, but at the same time Latgale and also Zemgale doctors seldom suggest MP, even though Zemgale has one of the state-subsidized MP. Both of these regions have the largest number of registered alcohol dependent individuals and cases of alcohol-related psychosis (CDPC, 2012b). Quite possibly there is a connection between a physician's attitude toward PAS addicts and amount of information about specific treatment, which calls for an examination of this in further research.

Survey physicians also come in contact with SUD treatment in their practices. Addiction specialists most practise detoxification, but over one-half prescribing suggestion method with medication i/v. Since this method is not in evidence-based, it may be in tandem with the stance taken by doctors mentioned in published studies, that (1) patients themselves are to blame for their illness and they should be punished (Tang et al., 2005) or it (2) points to the specialist's belief in some "magical" method (Raikhel, 2010), (3) or inability to perceive patients as dysfunctional persons (Miller, Hester, 2003). An additional probe would be enlightening on the fact that not one single surgeon/ traumatologists surveyed marked that in their daily profession they use the suggestion method with medication s/c, even though according to Technology that this procedure is conducted by a addiction specialist in tandem with a surgeon (NHS, Technology). This possibly could be connected to the relatively small number of surgeons surveyed. Food for thought are also in the responses showing that one-third of general practitioners prescribe detoxification on a daily basis, even though this is not their specific

responsibility, and it is unclear whether these patients are motivated to undergo further treatment. Also interesting to note is that practically all doctors in all branches of medicine surveyed, except dentists, pointed out that they utilize MP in their practice. This however is an in-patient program whose foundation is group therapy. Quite possibly the doctors' positive responses in this regard were their wish to show that they are familiar with MP and its principles. An additional probe would be necessary here with more specific information from doctors. Regionally, respondents from Kurzeme, Latgale and Vidzeme have no experience with suggestion with medication s/c. This could be because of (1) surgical procedure that requires additional equipment, cooperation with a surgeon, etc. (NHS, Technology) or (2) doctors' experience that the result does not differ from placebo effect (Blanc, Daeppen, 2005) or maybe (3) the method's side effects and post-operation complications (Blanc, Daeppen, 2005). Substitution therapy is practiced everywhere, except Vidzeme, and this coincides with NHS's information on methadone clinics in Latvia (NHS, 2011).

In the rehabilitation process, self-help groups also play a key role, i.e. AA, NA, GA. Despite the fact that over one-half of respondents say that they do not know whether there are any such groups in their region, with some saying that they believe that there aren't, still two-thirds of doctors recommend patients attend these groups, which could be connected to information about how effective they are (Kelly et al., 2010).

On the issue of the SUD treatment system's problem areas and necessary improvements, one-third of respondents have no opinion while one-fourth mention insufficient information and the state's inability to care for its inhabitants – both patients and physicians. Research findings also point to a tendency for doctors to be dissatisfied and concerned about the current situation in health care and the nation. Devastation following the economic crisis has also hit the SUD treatment sector – assistance possibilities have decreased

overall, hospitals and rehabilitation centers shut down, number of beds in SUD treatment department reduced, staff laid-off (NHS, 2010a; CDPC, 2012d). Just as serious is the patient's lack of motivation and financial woes that have been examined in other research studies (Tucker et al., 2004; Vaillant, 2005). Therefore, in order to improve the SUD treatment system, respondents mention information, access to services and lower fees as the most important aspects.

3.2. Viewpoint on addiction and treatment methods based on patients' survey

A majority of patients interviewed as a part of this survey revealed that they have undergone SUD treatment previously, with detoxification mentioned as the most common method. This is connected to the addiction-inflicted acute intoxication, abstinence syndrome (Prat et al., 2009), which require medical attention. Furthermore, a number of patients have undergone detoxification repeatedly. Still, considering that this merely eases an acute condition and does not treat the malady and addiction is chronic and progressive, patients often seek other methods. The second most widely used is suggestion without medication, possibly because it is practiced by not only medical professionals, but also by faith healers, psychics, etc. Mentioned a bit less is suggestion with medication i/v. The suggestive element is instrumental here and even though it is not evidence-based by research studies, survey participants have used it often and repeatedly. This also points to a patient's ignorance about their illness, the state of denial, magical thinking, belief in miracles (Vaillant, 2005; Kernberg, Caligor, 2005). As scientific studies have reported, it is characteristic of drug addicts to have erroneous understanding of addiction and the chances of terminating PAS use (Vaillant, 2005). This apparently signals the need to educate patients with knowledge about the illness's essence, the consequences

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and evidence-based treatment methods. Less than one-fifth of those surveyed had undergone MP which echoes what researchers have determined – that only a handful of patients receive the necessary treatment (Booth et al., 2001). Still, this is more than the number mentioned by German researchers (Heinz et al., 2003), where only 5% of patients receive medical attention focusing on the biopsychosocial nature of the illness.

3.3. Emotional Intelligence of substance use disorder patients

The research study concluded that there are statistically significant variances in the EI indicators for the research group and control group in all five factors (Intrapersonal, Interpersonal, Adaptability, Stress management and General mood), with their being higher for control group participants. This is aligned with published scientific studies that point to the PAS addict's lower emotional intelligence in comparison to the control group (Brown et al., 2009). Therefore one can conclude that PAS addicts overall have a lower emotional capacity personally and toward others, in controlling emotions, the ability to form adequate and successful relationships and also the ability to adapt to social surroundings. One can learn to acquire and develop such abilities by accumulating life's experience. We can surmise that the socialization process for PAS addicts has plodded along with limited success (Miller, Hester, 2003; Nolen-Hoeksema, Hilt, 2006), which is indicated by the weaker EI components than for those in the control group.

In the male patients' group, only in the Interpersonal factor was there no statistically significant differences compared to the control group. The results clearly reflect the pacient's contradictions in self-perception. Lower results than that of the control group are seen in a majority of scales and factors, but in the Interpersonal factor which is about relationships with other people; SUD pacients see no deficiencies on their part. In examining

individual scales, like Empathy, Interpersonal relationships (males only) and Social responsibility, one can see similar mean indicators in the research group and the control group. Therefore, an addict should be able to realize the feelings that other people have, their interests, needs, understand and cooperate with them. This contradicts the data from the questionnaires patients filled out, that declared that specifically relationships suffer the most, which also contradicts published studies (Stein et al., 2008; Lesch et al., 2011) that point out that an addict's behavior takes an egocentric, self-satisfaction position with a tendency to use other people for their own, usually dependency-based, needs.

Alcoholic men and women show higher mean indicators on several EI scales and factors, compared to drug addicted men and women. Research findings show that both alcoholic men and women have higher indicators in the Intrapersonal factor's Self-actualization scale. This signifies that alcoholics tend to have a greater capacity for a sensible life, can set personal goals and reach them, seek to develop their talent and skills, compared to drug addicts. This is confirmed by scientific studies that note that a drug addict's Ego is chronically and deeply disturbed, which results in a lack of resources for a stable existence and capability to set and reach goals (Miller, Hester, 2003). A drug addict's priority is satisfying primitive needs, which is abetted by a low education level and lack of social skills (Lee, Pang, 2008). This is reflected in the research's social-demographic data where a majority of drug addicts have a primary education only which suggests seeking a profession to guarantee future existence evidently was not a particular goal of theirs. In helping the drug addict, it would be important to inform and offer alternatives to deviant behavior teach how to set goals and strive to achieve them, all to curb the risk of criminal activity. There are no such programs in Latvia (IeM, 2011), and that could mean that the crime risk remains and drug addiction spreads even wider.

Alcoholics have statistically significant higher indicators in the Interpersonal factor and its Empathy and Social responsibility scales. This leads one to believe that alcoholics are more able to act according to conscience, adhere to social norms and prove that they can be a cooperative participant in any social group. Research literature has plenty of information on the low social responsibility of drug addicts (Huang et al., 2011; Kelley et al., 2010; Bennett et al., 2008). This indicates that, compared to drug addicts, alcoholics are better equipped for cooperation, supportiveness, and a sense of belonging to a specific social group. However, addiction causes a decreased sense of responsibility in both drug and alcohol dependent individuals (Bromley, Nelson, 2002). The high indicators seen on the Social responsibility scale for alcoholics, that show no statistically significance difference from control group data, are certainly up for discussion as apparently patients experience difficulty in critically evaluating level of responsibility in their families and society as a whole.

Even though it is pointed out (Kun, Demetrovics, 2010) that alcoholics tend to over exaggerate intensity of emotion (especially negative) they show high empathetic ability as drug addicts. This leads one to believe that the alcoholic is more capable than the drug addict in realizing and understanding what others feel. This coincides with studies that conclude that alcoholism is not related to a general lack of empathy, but sooner with differences in the emotional and cognitive empathy pattern (Maurage et al., 2011). The authors (Bar-On, 2000; Blair, 2005) make the point that a lack of empathy can stimulate development of psycho-pathy, and such personality disorders are more characteristic of drug addicts.

Alcoholics show statistically significant higher mean indicators in the Adaptability factor and its Problem solving scale. A conclusion can be drawn that alcoholics have a more developed ability to identify and define problem situations, plan the right step in solving them, effective decision making. The

differences mentioning can be verified with alcoholics overall showing a greater knack for social adaptation in society, ability to have sturdier relationships, gain support from next of kin and demonstrate greater social success in both the work place and in school. The social-demographics of those surveyed attests to this – alcoholics showed higher education, employment and registered relationship level, compared to drug addicts. Taking into account alcoholism's roots are in teenage/early adult years, when a person has already absorbed basic skills and know-how in order to conform to society's norms, then we can imagine that a person with alcohol dependency can deal with life's situations better. The beginning for drug abuse is most thought to be early teenage or mid-teen years; the addiction's dynamic and development is rapid, therefore addicts often do not learn the basic skills and know-how in order to conform to society's norms (Hambley et al., 2010).

Research results also show that alcoholics have statistically significant higher mean indicators in the Stress management factor and its Impulse control scale. Even though studies (Nolen-Hoeksema, 2004; Lesch et al., 2011) indicate that difficulties with self-control are apparent among both category addicts, alcoholics have less trouble with this. This in turn shows that the alcoholic can control emotions better, stifling any impulsive physical move thereof, aggressive outbursts, and feelings of hatred. Personality defects in drug addicts are deeper and heavier, which echo the findings in psychodynamic theory (Kernberg, Caligor, 2005; Khantzian et al., 2005).

In analyzing changes in the EI indicators for SUD patients 6 months following treatment in a detoxification and MP ward. It is clear that for MP respondents, EI changes in time for the men's group occurred similarly, with indicators increasing on the Problem solving, Flexibility and Stress tolerance scales but falling on the Interpersonal relationships scale while different changes have occurred on the Independence scale. In addition, on the Problem solving and Independence scale, there are changes in time, time factor and

group interaction effect, and differences between groups that point to the impact of treatment on the groups. Changes in the Independence scale from the viewpoint of psychodynamic theory can be explained by its losing its grandeur as a result of MP therapy, with gaining and admitting the status of "addict" and lessening denial – an extremely important therapeutic effect (Anderson et al., 1999). The therapeutic process at MP is based on involvement-attachment, which can also lessen a patient's feeling of independence. The higher surge on the Problem solving scale for MP patients can be explained by the patient's increasing ability to formulate problems, seek and find solutions. People start to realize that despite hardships, they can be faced, not avoided, but resolved. This is a key aspect in healing an addict.

Interesting to note that the Interpersonal relationship scale's indicators decrease in the course of time. This could be explained by a possible initial non-objective view of relationship evaluation. Quite possibly a patient's abstinence from PAS also is significant, and that in turn influence behavior and attitude toward others, helping to better understand that interpersonal relationships are in disarray. How a person comes to one or the other ward differs. The detoxification route is for those with serious mental, somatic and neurological disorders, where the patient's own motivation to get well is minimal. If it exists at all, then as a wish to eliminate the suffering from abstinence syndrome needs to be addressed. Seeking help at MP is the patient's own decision based on defects in interpersonal relationships and they family's insistence on treatment (Tucker et al., 2004). In the dynamics provided by MP, patients begin to comprehend their relationship problems and the influence SUD has. These facts are in tune with the findings of other researchers (Miller, Rose, 2009). This is why it would be important to continue the research to find out what creates a similar effect for both groups.

On the Stress tolerance scale, the mean indicators climbed for men in both groups (MP and detoxification); even though they grew markedly for MP

patients, they are still higher for the detoxification pacients. If MP patients show heightened stress tolerance, and with it coping better with tense situations, enduring intense emotion without panic, actively dealing with stress, that could be explained with MP activities that concentrate on self-understanding and learning constructive ways to deal with stress, then as far as detoxification patients are concerned, explaining these facts to them would be up for discussion. Possibly (1) this is because of the detoxification patients' greater ability to find solutions in stressful situations, or perhaps (2) greater egocentricity, placing responsibility on the shoulders of family members, or maybe with (3) detoxification patients' difficulty in dealing with reality and their living in a fantasy world. Interestingly it would be certainly worth an additional probe.

On the Interpersonal relationships scale and the Interpersonal factor, statistically significant changes in time and in the time factor×group interaction are apparent that signals a connection to the treatment process. Mean indicators for detoxification women show a major drop, while growing slightly for MP patients. These changes in the women's group can be explained that there is increasing ability on the part of MP women to establish and maintain closer relationships than before. The majority of women in MP have been sent there by social services because they have denied parental privileges and their children are in crisis centers. In other words, establishing and nurturing mutually fulfilling relationships is problematic, just as giving and receiving affection and attachment. Also, they find it difficult to judge the influence their conduct has on relationships. This coincides with data found in research literature (Walter et al., 2003; Walitzer, Dearing, 2006; Lesch et al., 2011) on women's early trauma in relationships within the nuclear family, on destructive choices in later life, on the difficulty in developing and maintaining close and affectionate relationships with loved ones.

For MP females, Interpersonal factor indicators grow, but they shrink for females in detoxification, and this leads one to draw the conclusion that the former have increased ability to realize the feelings and needs of others, and cooperate more constructively.

In the 3 measurements for male MP patients, changes in the dynamic are seen on the scales: Self-regard, Interpersonal relationships, Problem solving, Flexibility and Stress tolerance; for the females – on the Emotional self-awareness, Self-regard, Stress tolerance, Optimism scales and General mood factors. An important aspect revealed by the research is that both gender MP respondents show a markedly steep climb in Self-regard and Stress tolerance. This leads one to surmise that post-treatment patients have greater ability to comprehend and accept themselves, weigh the pluses and minuses, overcome tense situations without avoiding them, seek solutions. Other studies have focused on a patient's thought process and behavioral changes and the acquiring of new skills as a result of MP (Dawson et al., 2005; Dawson et al., 2007), how crucial instruction and education are (Pedrero-Perez et al., 2011). Also - ability to deal with negative emotions, ability to control ones conduct, including not triggering immediate action from impulse, learning how to feel the yen for PAS, realizing this and overcoming it; all this serves to improve the patient's assertiveness and self-regard.

MP respondents also show a major increase on the Emotional self-awareness scale, which is particularly important for women, who tend to suppress emotion (anger, displeasure, fear), and who are vulnerable to subjugation. The improvement here can be explained by the intensive efforts in MP so that patients are able to understand, realize and verbalize their feelings and emotions. This is in line with the concept's researcher who describes increased empathy and emotional awareness after special training (Bar-On, 2006). Taking the point into account what appears in studies (Berking et al., 2011) that a key SUD treatment objective is to improve general emotional

regulation especially enduring negative emotions, it can be concluded that the results from the research conducted for this dissertation prove that this objective is being met. Another research study (Brown et al., 2009) disclosed that improvement comes via general relationship and emotional adaptation development exercises. Survey participants from MP say that they have experienced this approach during their 1-month treatment. This prompts an idea about the necessity of broadening a patient's educational and psychosocial training opportunities, as well as the necessity to conduct repeated sample tests over a lengthier period to better understand durability of changes.

The upward trend in the mean indicators for the Optimism scale and General mood factor in the women's group can be explained by renewed hope and the ability to see the good in life. Substance-dependent women tend to have a low satisfaction level with life and themselves (Walter et al., 2003; Nolen-Hoeksema, 2004; Lesch et al., 2011). The development of these signs of depression could be due to inner or outside fact. Within one's own self, the factors can be sought in deformed interpersonal relationships, and/or low self-esteem and self-actualization. Deformed interpersonal relationships can bring about feelings of loneliness and lack of emotional support. Low self-esteem and limited self-actualization possibilities can result in emptiness and futility that without adequate self-expression options, lead to disgust with one's self and life in general. Unable to decipher one's own feelings, the task of adequately planning personal action in a given social situation becomes problematic. This coincides with other studies (Walter et al., 2003; Hernandez-Avila et al., 2004; Nolen-Hoeksema, 2004).

3.4. Social Intelligence of substance use disorder patients

In analyzing the differences in SI between SUD patients and the control group, it is clear that the differences are statistically significant, and

besides the patient group (men and women) show lower indicators in the total SI and the Social awareness scale, compared to the control group. This means that PAS addicts-patients have a defective ability in perceiving the inner state, motivation and behavior of themselves and others, and acting further based on this information. This is line with other findings (Ham, Garcia, 2010), that show that PAS addicts have lower SI indicators than the control group. Social awareness is characterized by recognizing aspects of culture(s), and how these aspects affect a person's conduct, and by knowing other people's needs before they are defined (Silvera et al., 2001; Gini, 2006). SI survey responses indicate that this scale's indicators are indeed lower for PAS addicts, just as in other research studies. However, one could initiate a discussion the fact that in the Emotional intelligence test Empathy scale's indicators for drug addicts are the same as the control group's, but in the Social intelligence test Social awareness scale indicators are reduced, although this factor involves empathy skills. This attests to the SUD patients' inconsistent self-evaluation, difficulty in judging themselves, and a narrow, subjective view of attitude towards others.

The research clearly shows differences in SI indicators between alcoholics and drug addicts, and in addition, in the Social skills scale and the total SI, statistically significant higher indicators are seen among the drug addicts. This would mean that drug addicts are persons with a considerable level of responsibility, have normal self-control, are able to cooperate and take part in group situations (Silvera et al., 2001; Gini, 2006). Comparing the patient group and the control group, we see no difference in the Social skills scale. Therefore, drug addicts rate themselves as responsible, cooperative and persistent. This contradicts the findings in several research studies on the social skills of PAS addicts, especially drug addicts who are generally known for criminal wrongdoing, violence, and being unable to cope (Stein et al., 2008; Kelley et al., 2010; Bennett et al., 2008). Still, the high results of drug addicts maybe can be explained by pointing out that even though they have trouble in

abiding by society's norms and to use them in daily life, they can feel a strong sense of belonging to their social group. This sub-culture can be characterized by specific norms, rules and traditions. The negative identity that they possess includes strong attachment and feeling of identity – for those behavioral norms that society does not consider socially desirable.

High social intelligence is allied with interest in social issues, the necessity of cooperating with others and well-developed talent as an organizer. People like this can always find the appropriate communication method with a range of conversation partners in varied situations; indeed, they have many roles in the repertory of various types (Silvera et al., 2001; Gini, 2006). In a very narrow sense the above could also pertain to drug addicts, in marking their talent for manipulation – to make the drug deal, break the law and swear to their families for years on end: "it won't happen again". The results all in all reveal the PAS addicts as unable to judge his own actions, therefore parallel to the self-evaluation surveys, in the future it would be necessary to include more objective research methods, like probing specific areas of the brain. The results also prompt thought on work with addicts both as out-patients and in-patients, and what can be improved. For one, paying extra attention in having them develop more critical self-evaluation, to their reactions' comparison to society's norms and mores, to assessment of situations and the development of social skills useful for society.

In analyzing the changes in 6 months post-treatment in both detoxification and MP, the results show that in the period between the 1st and 3rd measurements, the detoxification patients' SI indicators increased slightly or even decreased. At the same time, in the total SI the MP indicators increased on all scales and the total SI. In addition, males show a statistically significant changes in time and time×group factor interaction. The rising indicators point to the influence of the Minnesota program. This coincides with previous research studies (Dawson et al., 2005; Dawson et al., 2007) that state that

psychotherapeutic intervention focuses on changes in cogitation, behavior, and absorbing new skills.

Analyzing results on the SI changes for MP patients pre- and post-treatment, and 6 months later, we can see that despite mean indicator growth in both male and female groups in all scales, statistically significant changes are apparent only for the men in the total SI. This signifies improvement in their ability to understand themselves and others, and foresee the behavior of others as well. Perhaps this is based on cognition processes, emotional and social experience that patients gain from MP, as other studies have reported. Even so, the results require an additional probe to determine why there are result changes according to gender.

In both EI and SI, male patients show greater growth in the indicators, which indicates that their EI and SI changes more distinctly than SUD women patients. This in turn echoes the findings of other researchers about more serious psychiatric complications for women from drug use (Hernandez-Avila et al., 2004), about a tendency for SUD women to show external problems, with limited attention to the internal (Plant et al., 2009; Vaeth et al., 2009), about the more readily-diagnosed depression that female alcoholics have (Walter et al., 2003) and about faster-developing cerebral atrophy in PAS-addicted women (Hommer et al., 2001; Mann et al., 2005). Also the fact the SUD women often choose addicted and aggressive partners (Walitzer, Dearing, 2006), thus with serious personal functioning disorders in emotional and social aspects, can point to serious personality disorders for the SUD women themselves.

CONCLUSIONS

1. Doctors are informed about methods of substance use treatment and their recommendation to patients differs according to medical specialization and regional place of employment. Generally doctors are informed better about detoxification method, MP and suggestion without medication independent of region or speciality, in addition doctors more recomend to patients these methods. Doctors of different specialities and regions practice detoxification method in their daily work. Doctors mentioned as the primary shortcoming the lack of information about substance use disorder treatment.

2. Patients most often mentioned undergoing detoxification and treatment based on suggestion methods. Two-thirds of those surveyed underwent detoxification because it was medically necessary. Further treatment focusing on the essence of the illness has been utilized by only a small part of survey respondents.

3. There are statistically significant differences between the emotional and social intelligence mean indicators:
   ✓ Mean indicators in emotional and social intelligence for substance use disorder patients are lower than that of the control group;
   ✓ emotional intelligence indicators for alcoholics are higher than for drug addicts; but drug addicts show higher social intelligence indicators when compared to alcoholics;
   ✓ Statistically significant changes in the emotional and social intelligence dynamics for Minnesota Program and detoxification patients;
   ✓ Statistically significant changes in the dynamics have also occurred in the Minnesota Program male group on five out of fifteen emotional intelligence scales and four out of fifteen emotional

intelligence scales and one factor for Minnesota Program women, as well as the total social intelligence for the men.

Practical recommendations

1. Within this dissertation research the conclusions drawn provide motivation to rethink current substance use disorder treatment methods and to create substance use disorder treatment guidelines based on evidence obtained during this research concerning effective treatment methods.

2. It is essential to improve the education for doctors about addiction illness and its signs and possible consequences. In this way, specialists are stimulated to promote patients to undergo treatment forgoing passive or "magical" methods. In working with the patients, these specialists need to obtain knowledge of the relationship between personality mental disorders and somatic manifestations in order to promote early detection of risk factors and choose treatment methods suited to the special needs of each patient.

3. It would be necessary to inform substance use disorder patients of their addictions, the disorders that addictions cause, reducing patient in denial and "magical" thinking; in order to involve them in a long term treatment process in order to improve psychosocial functioning and successful adaptation in society without use of psychoactive substances.

4. It would be important to broaden Minnesota Program rehabilitation by allocating adequate funding, it can provide improvement of psychosocial functioning for substance use disorder patients.

5. It is essential to attract the attention of society to the importance of prolonged recuperation for substance use disorder patients; in turn, mitigating society's denial of substance abuse addictions.

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