The Emotional Intelligence Features of Substance Use Disorders Patients: Pilot Research Results.

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ABSTRACT

Introduction: Previous research has revealed that differences in Emotional Intelligence (EI) competency existed related to gender and substance use disorders (SUD). Moreover, SUD patients had a high correlation between EI and drug/alcohol use[13, 14, 15, 16].

Objective: The aim of this pilot research project is to establish and describe SUD patient personality factors relating to Emotional Intelligence and its constituting competencies.

Method: *Bar-On Emotional Quotient Inventory - EQ-i* [3] was used as the research instrument, which was adapted in Latvia by A.Gaitniece-Putane[38], that includes five factors and 15 respective scales.

Result: The target population for this research were SUD patients (n=241) - 154 (63,9%) men, with an average age of 38,5 (SD=10,7) and 87 (36,1%) women, with an average age of 37,8 (SD=11,2; t=0,485; p=0,628) from two departments of Riga Centre of Psychiatry and Addiction Disorders. There were 183 alcoholics and 58 drug addicts in the participant group. There were statistically significant differences for alcoholics and drug addicts in two EI factors (*Interpersonal and Adaptation)* and on five scales (*Self-actualization, Empathy, Social Responsibility, Problem Solving, and Impulse Control Scales).* There were statistically significant differences between genders in the *Interpersonal* factor and on the *Empathy* and *Social Responsibility* scales. There were statistically significant differences for male alcoholics and drug addicts in the *Interpersonal* and *Adaptation* factors and on four scales (*Self-actualization, Empathy, Social Responsibility, Problem Solving)*, but no difference on the *Impulse Control* scale. There were statistically significant differences for female alcoholics and drug addicts on only one EI scale (*Problem Solving).*

Conclusion: SUD patient EI indicators had a tendency to higher indicators, which leads one to believe that addict patients had difficulty being critical towards themselves, their illness and

other people in their lives. This study requires additional investigation including repeat testing of the participant group six months after treatment as well as enlarging the sample group.

Keywords: emotional intelligence, alcoholics, drug addicts, gender difference.

Introduction

The first to have published the definition of Emotional Intelligence (EI) and substantiated its purpose were Salovey and Mayer[1]. Later, Goleman[2] wrote that EI encompasses self-confidence and impulse control, perseverance, diligence and motivation, empathy and social skills. Bar-On[3,4] defined Emotional Intelligence as an incognitive ability, competence and skill set that influences an individual's ability to achieve success and to cope with the challenges and pressures presented by the surrounding environment. This EI model contains many multifaceted aspects, which potentially could help successfully treat/improve an individual's functionality in the contact with others: beginning with emotional and impulse control and awareness; ability to solve problems, be flexible, optimistic, and have dignity; leading further to abilities, which influence interpersonal relationships – empathy and the ability to be socially responsible.

Much research has been done concerning EI, and the differences between genders in EI competency, but little research has been done addressing EI for substance use disorders (SUD) patients. Previous research revealed that the significant differences between genders did not show up collectively in EI[5], but rather in separate and individual factors[3,6,7,8,9,10]. Even so, there has been other research done showing the contrary whereby no differences were found between genders both in EI collective and separate factors[11,12].

A high correlation was found between EI and drug/alcohol use[13,14,15,16]. During a review of relevant literature Kun, Demetrovics[17] found that two EI elements (the regulating/decoding of emotions and the differentiation of emotions) played a meaningful role in SUD cases.

For men, low EI indicators had a correlation to their inability to perceive and use emotions, to comprehend, contemplate and experience events with negative results and consequences leading to alcohol and drug abuse and deviant behavior[14,18]. The rate of substance abuse was higher in men than in women[19,20]. Moreover, drug addiction lead to problems not only in the physical health but also in the mental health of patients creating even greater problems for them in both society and relationships. Research has shown[21] that drug addicts especially opiate addicts, have certain dissatisfaction with life, which could then influence the EI overall *General Mood* factor indicators. There is also other research[22,23], which emphasized that alcoholics have a lesser ability to decode their emotions than opiate addicts do. Individuals that were opiate addicts exclusively (without alcohol problems) had a noticeably greater ability to define their emotions than those with alcohol problems exclusively and than those who had both alcohol and opiate addiction problems.

One of the negative consequences of alcoholism, which could significantly influence EI indicators, was brain atrophy. This condition manifested itself sooner in women than in men[24,25,26] and an earlier onset of cognitive deficits in female alcoholics when compared to male

alcoholics[27,28]. Regarding psychosocial factors, men appeared to be more likely than women to manifest certain risk factors for alcohol use and problems (e.g., fewer perceived social sanctions for drinking, positive expectancies for alcohol use, personality traits such as impulsivity) and had fewer protective factors[29]. Foran's, O'Leary's[30] research found that men became violent more often than women did. Nevertheless, there is also research that found that chronic substance use was associated with higher levels of trait aggression among different factors in females than in males. Data suggests that aggression was more easily provoked in substance dependent females by the chronic use of alcohol and drugs than in males[31]. This could lead to lower EI indicators on the *Impulse Control* and *Problem Solving* scale. Women relapsing to substance use appeared to be more sensitive to negative effects and interpersonal problems[32,33]. In turn, this could be reflected in the Interpersonal factor. This agrees with research that found that women have higher arithmetic mean indicators in the *Interpersonal* factor[3,7,8] and on the *Emotional Self-awareness*, *Empathy*, *Interpersonal Relationships* and *Social Responsibility* scales[6]. SUD female were left by their husbands; whereas, wives tended to stay with their male substance abusers even ignoring their verbal abuse and physical aggression[34]. This could lead to lower results for women on the EI *Independence* and *Assertiveness* scales. This is directly related to research, which found that men have higher arithmetic mean indicators in the *Intrapersonal* factor[3] and on the *Self-regard* and *Independence* scales, in the *Adaptation* factor and on the *Problem Solving* and *Flexibility* scales and in the *Stress Management* factor (this was confirmed by Stein, Book[6]).

It can be concluded that there were differences in EI competency influenced by gender and SUD. The research has shown that as special training sessions increased so did the EI indicators such as *Emotional Self-awareness* and *Empathy*[35]. It was indeed possible to improve EI[36] and open up new treatment possibilities[37]. Up until now no research had been done in Latvia on SUD patients; the main emphasis in order to treat SUD patients in Latvia had been on the biological factors, with the aim to reduce the physical symptoms.

The following research questions have been put forth:

1) Are there differences in EI indicators between alcoholics and drug addicts?

2) Are there differences in EI indicators between addict men and addict women?

3) Are there differences in EI indicators between male alcoholics and male drug addicts?

4) Are there differences in EI indicators between female alcoholics and female drug addicts?

Material and Method

Research participants: „ Riga Centre of Psychiatry and Addiction Disorders" in two departments – (the Detoxification and Minnesota Program departments) the patients (n=241) consisted of 154 (63,9%) men aged from 18 to 66 with an average age of 38,5 (SD=10,7) and 87 (36,1%) women aged from 18 to 62 with an average age of 37,8 (SD=11,2; t=0,485; p=0,628). From the participants 183 were alcoholics [75,9% from the total count, including men (n=121; 66,1%), women (n=62; 33,9%)] and 58 were drug addicts [24,1% from the total count including, men (n=33; 56,9%) and women (n=25; 43,1%)]. Drug addict allocation was - 85,2% opiate addicts, 7,4%- amphetamine addicts and 7,4% - addicts of many psycho-active substances (F19).

Inclusion criteria: the patients were diagnosed SUD (F10.2-F19.2) according to ICD-10; the patients were at least 18 years old; the patients were in the Detoxification department of in-patient care (alcoholics following five days course therapy to reduce acute symptoms and drug addicts following ten days of therapy) or in the Minnesota Program (being admitted in this department ensured that the patients had a similar condition regarding uncontrolled psycho-active substances use); they had no acute condition; understood Latvian; gave informed consent and filled out the socio-demographic data form and EI test.

Exclusion criteria: if the patients came only for the motivational course; or refused to fill out forms or EI test or did not complete them fully.

The socio-demographic data of participants can be seen on Table 1.

77,0% women and 59,7% men noted that they had children. 48.7% men and 64.3% women claimed to be in a relationship with a partner (registered or unregistered).

In this research, the ratio of men and women did not reflect the addict men and women ratio in the general population (in 2010 it was 4:1 in Latvia). Even following the addict allocation in the general population (in 2010 the alcoholic and drug addict ratio was 7:1) the research sample did not conform to this ratio but came closer to match the allocation for in-patient care (in 2010 it was 5:1).

Research instruments: *Bar-On Emotional Quotient Inventory - EQ-i*[3], which was adapted in Latvia by A.Gaitniece-Putane[38]. Bar-On developed Emotional Intelligence model is divided into five factors and 15 respective scales, which establishes good functionality for the individual: 1) *Intrapersonal factor*, which incorporates *Emotional Self-awareness*, *Assertiveness*, *Self-regard*, *Self-actualization* and *Independence*; 2) *Interpersonal factor*, which incorporates *Empathy*, *Interpersonal Relationships* and *Social Responsibility)*; 3) *Adaptability*, which includes *Problem Solving*, *Reality Testing* and *Flexibility*; 4) *Stress Management*, which incorporates *Stress Tolerance* and *Impulse Control*; 5) the *General Mood* factor, which includes *Happiness* and *Optimism*. The survey had 133 assertions that were evaluated on a five point gradation on the Likert scale from "'it never or rarely relates to me'" to ''it very often and always relates to me.'' The point totals are then summed up taking into account that all questions with negative meaning need to be deciphered first due to the fact that in these questions the points are given in reverse order. In this way, the more points earned the higher emotional intelligence indicators become. The Bar-On EI test internal consistency is determined using *Cronbah's alpha* indicators (see Table 2), these ranged from 0,62 to 0,88.

The participants were asked to fill out a *socio-demographic data form* as well (providing information on their education, employment and family status).

Research setting: This research was done at the „ Riga Centre of Psychiatry and Addiction Disorders" in two departments: in the Detoxification and Minnesota Program departments. In the Detoxification department, there were 40 beds. Alcohol intoxication or withdrawal patients were there five days, drug addict patients - ten days. There were four doctors (addiction specialists), one psychologist assistant, nurses and nurse assistants.

The Minnesota Program department (bed count - 12) has been combined with the Motivational Department. This was why some patients tended to go through the motivational course exclusively (7-12 days long) without going through the Minnesota Program course (28 days long). Two doctor - addiction specialists/psychotherapists, one psychologist and one psychologist assistant worked in this department. The patients were accepted into the department only after a five day period free of psycho-active substances also following the Detoxification course.

In the Minnesota program department from January 1st 2010 to December 31st 2010 of 167 patients 142 satisfied the inclusion criteria and the EI test was completed by 105 patients (73,9%). In the Detoxification department from June 1st 2010 to October 1st 2010 of 618 patients that received treatment during this period in this department, 417 satisfied the inclusion criteria and the EI test was completed by 136 patients (32,6%). The largest part of remaining patients or 67% consisted of patients that could not speak Latvian or refused to complete the EI test or forms because of no benefit to them or an apathetic attitude to do such tasks or they did not completed the form or test.

Data processing was done using SPSS version 16 (Statistical Package for the Social Sciences; SPSS Inc., Chicago, IL, USA) and the Microsoft EXCEL software program. For data analysis, descriptive statistical methods, conclusive statistics and t-tests were used. The *Cronbah's alpha* coefficients were calculated for each factor and the scales created containing coefficients.

Results

The Bar-On EI test internal consistency was determined using *Cronbah's alpha* coefficient (see Table 2). On this table, *Cronbah's alpha* coefficients were inserted from the Bar-On original research[3] and the test adaptability research done in Latvia[38].

The mean EI statistical indicator comparison of alcoholics and drug addicts can be seen on Table 3.

When comparing alcoholic and drug addict patient EI scale mean indicators (see Table 3) it can be seen that alcoholics had statistically valid higher indicators on the *Self-actualization* (M=3,4; SD=0,7; p=0,010), *Empathy* (M=3,8; SD=0,6; p=0,014), *Social Responsibility* (M=3,8; SD=0,6; p<0,001), *Problem Solving* (M=3,5; SD=0,6; p<0,001), *Impulse Control* (M=3,0; SD=0,8; p=0,025) scales and in the *Interpersonal* (M=3,7; SD=0,5; p=0,002) and *Adaptability* (M=3,2; SD=0,4; p=0,013) factor indicators.

The mean EI statistical indicator comparison of SUD men and women can be seen on Table 4.

When comparing EI indicator differences between genders (see Table 4), women had statistically significant and higher indicators on the *Empathy* (M=3,9; SD=0,6; t=2,968; p=0,003) and *Social Responsibility* (M=3,9; SD=0,5; t=4,144; p<0,001) scales and in the *Interpersonal* factor indicators (M=3,8; SD=0,5; t=2,863; p= 0,005), than men did. In the remaining factors and scales no significant differences were detected (p>0,05).

The mean EI statistical indicator comparison for male alcoholics and male drug addicts can be seen on Table 5.

Statistically significant and higher mean evaluations for male alcoholics when compared to male drug addicts (see Table 5) were on the *Self-actualization* (M=3,4; SD=0,7 vs. M=3,2; SD=0,5; p= 0,017), and *Empathy* scales (M=3,7; SD=0,6 vs. M=3,4; SD=0,6; p= 0,005), *Social Responsibility (*M=3,7; SD=0,6 vs. M=3,2; SD=0,5; p <0,001) and on the *Problem Solving* scales (M=3,6; SD=0,6 vs. M=3,2; SD=0,6; p =0,004). The mean factor indicators for male alcoholics when compared to male drug addicts had statistically significant and higher indicators in the *Interpersonal* factor (M=3,7; SD=0,5 vs. M=3,3; SD=0,4; p= 0.002) and in the *Adaptation* factor (M=3,2; SD=0,4 vs. M=3,0; SD=0,5; p= 0.026).

The mean EI statistical indicator comparison for female alcoholics and female drug addicts can be seen on Table 6.

For women, statistically significant differences (p=0.026) (see Table 6) were found in the *Problem Solving* ability mean evaluations, which were higher (M=3,5; SD=0,6) in female alcoholics than in female drug addicts (M=3,1; SD=0,6).

The mean indicators of other factors for both female alcoholics and female drug addicts did not have any statistically significant differences.

Discussion

Research in Latvia had not previously been done on SUD patient Emotional Intelligence and its influence on social relationships and on a patient's quality of life. By comparing the findings to the Bar-On data and the EI research done in Latvia[38,39,40], which had nothing to do with SUD patient research, one can see that the SUD patient EI indicators had a tendency to be significantly higher. This leads one to believe that SUD patients had difficulty being critical to themselves, to SUD and its consequences as well as in relationships with others in their lives.

The research results show that the Emotional Intelligence factor and scale mean indicators were statistically significant and higher for alcoholics than for drug addicts. This was true regardless of gender in scales and factors indicators – *Self-actualization, Empathy, Social Responsibility, Problem Solving (*only for female alcoholics on this scale*), Impulse Control* scales and in the *Interpersonal* and *Adaptability* factors. This concurs with scientific literature findings concerning drug addict difficulties from an emotional and social aspect[41,42,43].

From a psycho-dynamic point of view this could point to the drug addict's possible difficulty in understanding their own personality. This in turn, could cause a chronic internal feeling of emptiness and inadequacy and mitigate their ability to perceive reality, which has come about due to deficient personality development in which parent deprivation, traumatic experiences and self-destructive tendencies are prevalent[44,45].

Even so, many studies have shown that emotional abilities, social skills and relationships for alcoholics were hindered. The Hungarian researchers[17], in doing a literature review of Emotional Intelligence and SUD ascertained that emotional intensity overestimation, especially negative

emotions, which were most often tended to be associated with every facial expression seen were inherent for alcoholic patients. The studies[22,23] emphasized that alcoholics had a lower ability to decode emotions than opiate addicts did. In our study, the alcoholics were the group that showed better EI ability than drug addicts did. Perhaps this was due to the fact that from the drug addict group the opiate addicts were not separated out from other drug addicts. Even so, the opiate addicts accounted for the largest part of the participant drug addict group.

The *Social Responsibility* scale results show that alcoholics had a higher degree of social responsibility than drug addicts did. This related to other studies concerning the low employability rate of drug addicts[46,47,48], the problems in rearing children when these relationships were usurped in favor of substance abuse[49,50,51,52,53], violence at home, and criminal activities[53,54,55]. Nonetheless, the high results for alcoholics on the *Social Responsibility* scale could indicate their insufficient ability to critically evaluate their SUD and its consequences and influence on different yet important areas of personal life; this is because SUD greatly reduces the level of social responsibility[56,57]. Therefore, it was surprising to see the high indicators and statistically significant differences on the *Empathy* scale.

On the *Impulse Control* scale it was statistically significant that drug addicts showed great difficulty in controlling their impulsive behavior. In contrast, different studies[34,58,59,60,61,62,63,64] indicated that difficulty in self-control was inherent not only in drug addicts but also in alcoholics. It is possible that these high results can be explained by an alcoholic`s wish to show themselves in a socially positive light. Often, alcoholics point out that their impulsive behavior was not due to any internal factors for example, a brief loss of self-control, but rather due to external factors such as their surrounding environment, which is hostile towards them. They lay blame on the environment for alcoholics must constantly defend themselves being in it. This leads one to believe that addicts have certain cognitive defects, which can create a tendency to look for the causes of their problems in the surrounding environment, which are related to psycho-dynamic viewpoints[34,65,66,67,68].

Statistically significant differences can be seen in the *Interpersonal* factor indicators for addict women and addict men. This is related to research done in Latvia and several observations by renowned authors in this field that there were differences between genders within this factor and females had higher indicators in the *Interpersonal* factor[3,7,8,38]. Interpersonal ability indicates that a person has the ability to understand and interact and get along with other people. In the *Interpersonal* factor, the fact that women had higher indicators could be explained by their female role in society, which is perceived as an orientation towards people, their emotions, personal interests, and their wish to communicate and cooperate with others. In addition, the male versus female ratio in the research did not reflect the addict men and addict women in the general population (in 2010 it was 4:1). However, it is possible that this ratio does indeed reflect a greater compliance for females (than males) partaking in this study.

These results evoke several questions - Did men already possess lower interpersonal ability prior to their addiction? Did the development of addiction create interpersonal ability loss or reduction? Did abstaining from alcohol/drugs influence interpersonal ability improvement? Taking into account the socio-demographic data of participants and the fact that over two thirds of women have preserved their relationships while less than half of men on the other hand, have stayed in relationships with a partner. One tends to believe that women in the participant group

seemed to be able to maintain interpersonal relationships at a greater rate (than men) despite their addiction.

There are notable differences between the genders on the EI factors featured scales – on the *Empathy* and *Social Responsibility* scales. This is related to the Stein, Book[6] and Bar-On[3] studies. Men had a lower degree of empathy ability when compared to women[69,70], therefore, also a reduced ability to perceive the emotions of others and to express their own anxiety and understanding. It must be taken into account that the *Empathy* scale results once interpreted came out with results that were conditionally high for men, which could tend to be insufficiently critical in evaluating their own ability to empathize and has a tendency to show a wish to provide socially acceptable answers.

In this study, the participants did not have differences between the genders on the *Impulse Control* scale. However, differences between genders were statistically significant on the *Social Responsibility* scale. Social responsibility means as a person is able to prove cooperating together as a capable, constructive member of a social group, who supports the accepted social rules and works for the good of the group[3]. SUD intrinsically affects the degree of social responsibility in a negative way. Even so, female alcoholics seemed to have a greater degree of social responsibility than addict men did[71,72]. Still, the high results on the *Social Responsibility* scale could point to an insufficient ability of patients to critically evaluate SUD and its consequences as well as its influence on important areas in personal life.

Analyzing the research results the following research limitations must be taken into account:

- Only the accessible patient sample was used; a control group was not used, which may have affected the research results. In future, to improve similar research results it would be necessary to compare the indicator results to control group indicators.

- The male to female ratio in this study did not reflect the addict male to addict female ratio in the general population. Therefore, in future, it would necessary to enlarge the research sample group and compare them by gender.

- The addict group ratio in the research did not reflect the general population as well. In further research, the addict group needs to be enlarged and compared by addiction group.

Despite these limitations, this study provides information on emotional intelligence of SUD patients as well as shows their difficulty in critically evaluating their own emotional and social abilities. It is important that Emotional Intelligence be defined as a dynamic construct, which is able to develop and enhance itself during your lifetime making it an invaluable, psycho-social tool in helping and treating addict patients. In working with alcoholics and drug addicts it is important to note and emphasize prolonged therapy and its benefits so that one can develop a critical attitude towards oneself and surrounding environment. This in turn, promotes the patient interest and wishes to continue therapy treating alcoholism and drug addiction; especially for detoxification department patients, who go through a short treatment course to lessen acute symptoms only.

Conclusion

1. Differences were found between alcoholics and drug addicts in two EI factors (*Interpersonal* and *Adaptability)* and on five scales (S*elf-actualization, Empathy, Social Responsibility, Problem Solving, Impulse Control* scales*).*

2. There were differences between genders in the *Interpersonal* factor and on the *Empathy*, *Social Responsibility* scales.

3. Differences existed for male alcoholics and drug addicts in the *Interpersonal* and *Adaptability* factors and on four scales (*Self-actualization, Empathy, Social Responsibility* and *Problem Solving).* There were no differences on the *Impulse Control* scale.

4. Differences were found between female alcoholics and drug addicts on one EI scale (*Problem Solving)*.

5. It could be seen that for addict patients their EI indicators had a tendency for significantly higher indicators, which leads one to believe of the drug addict patient hardship in being critical of oneself, to SUD and to others in their lives.

6. It is essential to continue this research by repeat testing of the participants six months after treatment, enlarging the research group, comparing data with control group data, which could lead to improving the validity of this research.

7. In working with alcoholics and drug addicts it is important to take measures in order to promote the development of the patient's critical attitude towards oneself and surrounding environment.

Conflict of Interest: None declared.

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Table 1: The socio-demographical data of the participants.

		Male (n=154)		Female (n=87)	
		N	%	N	%
Education	Elementary	33	21,4	17	19,5
	High School	46	30,0	31	35,6
	Vocational/Trade School	56	36,3	27	31,0
	University	19	12,3	12	13,8
Employed	Yes	50	32,5	20	23,0
	No	104	67,5	67	77,0
Family Status	Married	35	22,7	27	31,0
	Divorced	31	20,1	14	16,1
	Widowed	5	3,2	5	5,7
	Lives alone	43	27,9	12	13,8
	In Unregistered Relationship	40	26,0	29	33,3
Children	Yes	92	59,7	67	77,0
	No	62	40,3	20	23,0

Table 2. *Cronbah's alpha* **indicators in this study compared to the adaptability test study done in Latvia**[38] **and to the Bar-On original study**[3]**.**

Scales and Factors	In this study (n=241)	Gaitnieces-Putānes study (n=381)	Original Bar-On study (n=8378)
Emotional self-awareness	0,76	0,74	0,79
Assertiveness	0,72	0,69[#]	0,76
Self-regard	0,78	0,83	0,86
Self-actualization	0,79	0,76	0,76
Independence	0,83	0,67[#]	0,72
Empathy	0,72	0,66[#]	0,74
Interpersonal relationships	0,74	0,77	0,76
Social responsibility	0,71	0,73	0,69[#]
Problem solving	0,71	0,76	0,77
Reality testing	0,64[#]	0,66[#]	0,73
Flexibility	0,62[#]	0,75	0,70
Stress tolerance	0,67[#]	0,76	0,80
Impulse control	0,81	0,81	0,80
Happiness	0,66[#]	0,79	0,79
Optimism	0,73	0,75	0,79
Intrapersonal factor	0,88	0,91	-
Interpersonal factor	0,86	0,83	-
Adaptability	0,78	0,81	-

Stress management	0,79	0,84	-
General mood	0,79	0,85	-

#- validity not sufficiently high

,,-,, Bar-On has not provided information

Table 3. The mean EI statistical indicator comparison of alcoholics and drug addicts.

	Alcoholics (n=183)		Drug addicts (n=58)		t	p-value
	Mean	SD	Mean	SD		
Emotional self-awareness	3.2	0.6	3.2	0.6	-0,099	0.921
Assertiveness	3.2	0.6	3.2	0.8	0,023	0.984
Self-regard	3.1	0.7	3.2	0.7	-1,059	0.291
Self-actualization*	**3.4**	**0.7**	**3.2**	**0.5**	**2,239**	**0.010**
Independence	2.8	0.6	2.8	0.8	0,545	0.640
Empathy*	**3.8**	**0.6**	**3.5**	**0.7**	**2,745**	**0.014**
Interpersonal relationships	3.5	0.6	3.4	0.6	1,025	0.306
Social responsibility*	**3.8**	**0.6**	**3.4**	**0.6**	**4,322**	**<0.001**
Problem solving*	**3.5**	**0.6**	**3.2**	**0.6**	**3,696**	**<0.001**
Reality testing	3.2	0.5	3.1	0.5	1,880	0.061
Flexibility	2.8	0.6	2.9	0.7	-0,226	0.821
Stress tolerance	2.9	0.5	3.0	0.6	-0,671	0.503
Impulse control*	**3.0**	**0.8**	**2.8**	**0.7**	**2,251**	**0.025**
Happiness	3.3	0.6	3.3	0.7	0,854	0.394
Optimism	3.6	0.6	3.6	0.7	0,806	0.421
Intrapersonal factor	3.1	0.5	3.1	0.5	0,417	0.677
Interpersonal factor*	**3.7**	**0.5**	**3.5**	**0.5**	**3,104**	**0.022**
Adaptability*	**3.2**	**0.4**	**3.0**	**0.5**	**2,495**	**0.013**
Stress management	3.0	0.5	2.9	0.5	1,314	0.190
General mood	3.5	0.5	3.4	0.6	1,145	0.254

* $p \leq 0.05$

Table 4. The mean EI statistical indicator comparison of SUD men and women.

	Female (n=87)		Male (n=154)		t	p-value
	Mean	SD	Mean	SD		
Emotional self-awareness	3.1	0.6	3.2	0.6	-0,948	0.344
Assertiveness	3.2	0.7	3.2	0.6	-0,251	0.802
Self-regard	3.1	0.7	3.1	0.7	-0,852	0.395
Self-actualization	3.4	0.6	3.4	0.6	-0,223	0.823
Independence	2.8	0.6	2.9	0.6	-0,799	0.425
Empathy*	**3.9**	**0.6**	**3.7**	**0.7**	**2,968**	**0.003**
Interpersonal relationships	3.5	0.6	3.5	0.6	0,179	0.858
Social responsibility*	**3.9**	**0.5**	**3.6**	**0.6**	**4,144**	**<0.001**

Problem solving	3.4	0.6	3.5	0.6	-1,127	0.261
Reality testing	3.2	0.5	3.2	0.5	0,431	0.667
Flexibility	2.9	0.5	2.9	0.6	0,061	0.952
Stress tolerance	2.9	0.6	3.0	0.6	-1,446	0.149
Impulse control	2.9	0.7	3.0	0.8	-0,675	0.500
Happiness	3.3	0.6	3.4	0.6	-1,095	0.275
Optimism	3.6	0.6	3.7	0.6	-1,153	0.250
Intrapersonal factor	3.1	0.5	3.2	0.5	-1,144	0.254
Interpersonal factor	**3.8**	**0.5**	**3.6**	**0.5**	**2,863**	**0.005**
Adaptability	3.1	0.4	3.2	0.4	-0,464	0.643
Stress management	2.9	0.5	3.0	0.5	-1,529	0.128
General mood	3.4	0.5	3.5	0.5	-1,186	0.237

* p ≤ 0.05

Table 5. The mean EI statistical indicator comparison for male alcoholics and male drug addicts.

	Male Alcoholics (n=121)		Male Drug addicts (n=33)		t	p-value
	Mean	SD	Mean	SD		
Emotional self-awareness	3,2	0,6	3,2	0,6	-0,185	0,853
Assertiveness	3,2	0,6	3,2	0,8	0,281	0,779
Self-regard	3,1	0,6	3,2	0,7	-0,661	0,510
Self-actualization	**3,4**	**0,7**	**3,2**	**0,5**	**2,051**	**0,017**
Independence	2,9	0,6	2,8	0,8	0,728	0,468
Empathy	**3,7**	**0,6**	**3,4**	**0,6**	**2,830**	**0,005**
Interpersonal relationships	3,5	0,6	3,4	0,6	0,749	0,455
Social responsibility	**3,7**	**0,6**	**3,2**	**0,5**	**4,695**	**<0,001**
Problem solving	**3,6**	**0,6**	**3,2**	**0,6**	**2,911**	**0,004**
Reality testing	3,2	0,5	3,0	0,6	1,598	0,112
Flexibility	2,9	0,6	2,8	0,7	0,597	0,552
Stress tolerance	2,9	0,6	3,0	0,6	-0,979	0,329
Impulse control	3,1	0,8	2,9	0,7	1,090	0,278
Happiness	3,4	0,6	3,4	0,6	-0,008	0,994
Optimism	3,7	0,6	3,6	0,6	0,394	0,694
Intrapersonal factor	3,2	0,5	3,1	0,5	0,434	0,665
Interpersonal factor	**3,7**	**0,5**	**3,3**	**0,4**	**3,224**	**0,002**
Adaptability	**3,2**	**0,4**	**3,0**	**0,5**	**2,249**	**0,026**
Stress management	3,0	0,6	3,0	0,5	0,307	0,759
General mood	3,5	0,5	3,5	0,6	0,362	0,718

* p ≤ 0.05

Table 6. EI statistical indicator comparison for female alcoholics and female drug   addicts.

	Female Alcoholics (n=62)		Female Drug addicts (n=25)		t	p-value
	Mean	SD	Mean	SD		
Emotional self-awareness	3,1	0,6	3,1	0,6	0,172	0,864
Assertiveness	3,1	0,6	3,2	0,9	-0,313	0,793
Self-regard	3,0	0,7	3,1	0,7	-0,718	0,475
Self-actualization	3,4	0,6	3,2	0,5	1,092	0,278
Independence	2,8	0,6	2,9	0,7	-0,682	0,497
Empathy	3,9	0,5	3,7	0,7	1,556	0,205
Interpersonal relationships	3,5	0,6	3,4	0,7	0,871	0,387
Social responsibility	4,0	0,5	3,8	0,5	1,560	0,123
Problem solving*	**3,5**	**0,6**	**3,1**	**0,6**	**2,271**	**0,026**
Reality testing	3,2	0,5	3,1	0,5	0,815	0,418
Flexibility	2,8	0,5	3,0	0,5	-1,489	0,140
Stress tolerance	2,8	0,5	2,8	0,6	0,074	0,941
Impulse control	3,0	0,6	2,7	0,7	1,962	0,053
Happiness	3,3	0,5	3,1	0,8	1,191	0,329
Optimism	3,6	0,6	3,4	0,8	1,179	0,242
Intrapersonal factor	3,1	0,5	3,1	0,5	0,077	0,939
Interpersonal factor	3,8	0,5	3,6	0,5	1,420	0,160
Adaptability	3,2	0,4	3,0	0,3	0,994	0,324
Stress management	2,9	0,5	2,7	0,5	1,523	0,132
General mood	3,5	0,4	3,3	0,8	1,518	0,245

* p ≤ 0.05