

# ADOLESCENT SUBSTANCE DEPENDENCY IN RELATION TO PARENTAL SUBSTANCE (AB)USE

## ODVISNOST OD DROG PRI MLADOSTNIKIH V POVEZAVI Z ZLORABO PSIHOTROPNIH SNOVI STARŠEV

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### Abstract

**Problem:** Relations between adolescents' substance dependency status (yes-no) as independent and adolescent self and family evaluations and parental indicators of substance dependency as dependent variables were studied.

**Methods:** All together 197 families were included (father, mother, adolescent - mean age of adolescent was 17.2 years). Rosenberg self – esteem scale, originally constructed semantic differential perceived family climate, Zung depression scale and SASSI-3 (Substance Abuse Subtle Screening Inventory) instrument were applied. Multivariate and univariate approach were applied to verify hypotheses about differences in dependent variables regarding the independent one also with estimated mothers' and fathers' dependency as two covariates.

**Results:** Level of depression was significantly higher, but level of self-esteem and family climate evaluation were significantly lower in dependent adolescents. Fathers of non-dependent adolescents and mothers of dependent adolescents were found more substance dependency vulnerable. Adolescent dependence status differed more frequently in fathers' than in mothers' SASSI-3 sub scores.

**Conclusions:** Results indicate that in group of substance dependent adolescent families with healthier and more engaged fathers participated in the study. Support for mothers' vulnerability and need for fathers' involvement in treatment of dependent adolescent is underlined.

**Key words:** parents, adolescents, substance abuse, self–esteem, family climate, depression

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### Izvleček

**Problem:** Stanje odvisnosti pri mladostnikih, ki smo ga določili na nominalni ravni ter opredelili kot neodvisno spremenljivko, smo ugotavljali v zvezi z naslednjimi odvisnimi spremenljivkami: mladostnikova raven samospoštovanja, depresivnosti in ocena družinskega vzdušja ter starševska izraženost kazalcev zlorabe psihotropnih snovi.

**Metoda:** Vključeno je bilo 197 družin (oče, mati, mladostnik – povprečna starost 17,2 let). Uporabljeni so bili naslednji kazalci: Rosenbergova lestvica samospoštovanja, semantični diferencial za oceno družinskega vzdušja, Zungova lestvica depresivnosti in (Substance Abuse Subtle Screening Inventory) vprašalnik za ugotavljanje izraženosti odvisnosti od psihotropnih snovi SASSI-3. Hipoteze smo preverjali z univariatnimi in multivariatnimi pristopi ob upoštevanju dveh kovariat (ocene izraženosti odvisnosti mater in očetov).

**Rezultati:** Pri odvisnih mladostnikih je bila ugotovljena pomembno višja raven depresivnosti, raven samospoštovanja in ocena družinske klime pa sta bili pomembno nižji. Očetje ne-odvisnih mladostnikov in matere odvisnih mladostnikov so se izkazali kot bolj ranljivi na področju kazalcev odvisnosti. Stanje odvisnosti pri mladostnikih je pogosteje razločevalo subskore SASSI-3 pri očetih kot pri materah.

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**Zaključek:** Rezultati kažejo, da so v skupini z odvisnimi mladostniki na vprašalnik odgovarjali bolj angažirani očetje. Poudarjena je potreba po večji podpori materam in večji vključenosti očetov v zdravljenje odvisnih mladostnikov.

**Ključne besede:** starši, mladostniki, zloraba psihotropnih snovi, samospoštovanje, družinsko vzdušje, depresija

## 1 Introduction

Adolescent substance use has become a serious concern worldwide; family influence has been established as one of the strongest sources of risk and protection of adolescent substance abuse (SA) (1). Adolescents' satisfaction with family life is negatively connected with the use of psychoactive substances on the part of adolescents (2, 3). McMague et al. (4) state that adolescents who have experienced/used alcohol to a greater extent, came from families which they perceived as non-cohesive and without strong intellectual, religious or democratic guidelines. The most protective results of family cohesiveness were discovered in the post-adolescent group (5).

Self-esteem reflects an evaluative component of the self-concept, insofar as the level of self-esteem is low, it can become a permanent problem and central focus of the adolescent's life (6). The self-esteem of an adolescent is positively connected with parental acceptance and interest (7). Positive links have been established between the level of self-esteem of adolescents and perceptions of the closeness of parents (8). Through a simplified model, an adolescent's level of depression may be understood in the case of a dysfunctional family as its consequence (9) or a higher level of depression contributes to a lower evaluation of the family (10). However, high-quality parent-adolescent relationships predict lower levels of adolescent depression (11). The pathways through which parent-adolescent relationships may influence adolescent behaviors are not fully understood and almost no research examines these processes separately for mothers and fathers. Findings from National Longitudinal Survey on Youth, 1997 cohort, supported conclusions that the relationship between parents and their adolescent children relates to adolescent development primarily through its association with subsequent routine family activities, perceived parental awareness, and perceived parental supportiveness; coefficients were

slightly weaker for fathers than for mothers, both the father-adolescent and the mother – adolescent relationships are important (12).

Adolescents which have grown up in a family with alcohol problems are more at risk in developing SA and the development of other mental disturbances (13, 14). Parental alcoholism and peer substance use are the most predictive for adolescent SA (15, 16). A large substance use prevention trial showed that non-substance-using parents had a buffering effect on friends' influences to use substances, such that friends' use did not affect adolescent use when parents were non-users, and the effects of substance offers on refusal self-efficacy were weaker. The findings suggest that parent substance use should be addressed in adolescent substance use prevention programs, and that continuing non-use by parents should be reinforced (17). Paternal co-morbid psychopathology, antisocial behavior, and alcoholism, play critical roles not only with respect to parent-child relationships, but also as determinants of family functioning and family stability (18).

The general purpose of our research was to investigate the relation between adolescents' substance dependence status on one side and adolescents' self – esteem, perceived family climate and reported depression on the other side. Two covariates were also taken into account, fathers' and mothers' AUDIT (Alcohol Use Disorder Identification Test) (19) estimation of dependency. We were also interested into the question, if a.- adolescents with and without dependence symptoms differ in indicators of adolescents' dependency orientation, identified with SASSI-A instrument (The Substance Abuse Subtle Screening Inventory – adolescent form); additionally, we were interested, if adolescents' b.- mothers' and c.- fathers' SASSI-3 (The Substance Abuse Subtle Screening Inventory – adult form) (20, 21) dependent scores differ significantly regarding their adolescents' dependency status, as perceived from the side of relevant therapists. Hypotheses were as follows: 1.

Adolescents, admitted to substance dependence programme, significantly differ from adolescents, perceived as non – dependents in self – esteem, reported depression and perceived family climate. 2. a.- SASSI-A sub scores for adolescents significantly differ regarding “dependent” and “non – dependent” adolescents; b. - SASSI-3 sub scores for mothers significantly differ regarding “dependent” and “non – dependent” adolescents; c.- SASSI-3 sub scores for fathers significantly differ regarding “dependent” and “non – dependent” adolescents.

## 2 Subjects and methods

### 2.1 Participants

Each adolescent, participating in the research, belonged to one of 197 families. There were three types of families: a. families with no referred dependent member, neither parents, nor children (n = 104, 56 %

of the whole sample); b. families with drug dependent children (n = 29, 16 % of the whole sample), admitted at Center for illegal substance dependency treatment at University Psychiatric Hospital Ljubljana and c. families with alcohol dependent father (n = 52, 28 % of the whole sample), admitted at Center for alcohol dependency treatment at University Psychiatric Hospital Ljubljana. If there were more than one adolescent child in the same family, only the eldest one was included. 16.5 % of “families” with “dependent adolescents” returned questionnaires back, so as 29.4 % from “families with “non – dependent” adolescents.

Number of adolescent participants with regard to type of family is presented in Table 1, and with regard to inclusion in dependency treatment in Table 2.

There was 10.7 % of missing values from the beginning total of n = 197 families. No significant differences in frequency of (fe)male adolescents were found with regard to type of family ( $\chi^2(2) = 2.31, p = 0.316$ ).

No significant differences in frequency of

Table 1. *Number of female and male adolescent participants with regard to type of family, participating in the research.*

Tabela 1. *Število sodelujočih mladostnic in mladostnikov glede na tip družine in glede na vključenost v program zdravljenja odvisnosti.*

type of family / tip družine	gender / spol		
	female / ženske	male / moški	all / skupaj
without a registered dependent member / brez registriranega odvisnika	49	52	101
with a registered dependent child / z registriranim otrokom odvisnikom	9	17	26
with a registered dependent father / z registriranim očetom odvisnikom	19	30	49
all / skupaj	77	99	176

Table 2. *Number of female and male adolescent participants with regard to inclusion in dependency treatment.*

Tabela 2. *Število sodelujočih mladostnic in mladostnikov glede na vključenost v program zdravljenja odvisnosti.*

	gender / spol		
	female / ženske	male / moški	all / skupaj
included in dependency treatment / vključeni v program zdravljenja odvisnosti	9	17	26
not included in dependency treatment / niso vključeni v program zdravljenja	69	79	148
all / skupaj	78	96	174

(non)dependent adolescents were found with regard to gender ( $\chi^2(1) = 1.29, p = 0.256$ ).

The average age of adolescents was  $M = 17.22$  years, with  $SD = 1.27$  year, with 45 percents of female and 55 percents of male respondents (with 9 missing values). No significant differences were found in gender proportion regarding the adolescent substance dependency status (yes – no) ( $\chi^2(1) = 0.39, p = 0.53$ ): there were 73 female (mean age = 17.48,  $SD = 1.12$  years), and 88 male (mean age = 16.92,  $SD = 1.33$  years) adolescents in “nondependent” and 8 female (mean age = 17.25,  $SD = 1.03$  years) and 13 male adolescents (mean age = 17.54,  $SD = 1.56$  years) in “dependent” category. No significant age differences were found ( $F(1, 185) = 1.11, p = 0.29$ ) comparing adolescents, classified as dependent ( $n = 24, M = 17.46, SD = 1.44$ ) and non-dependent ( $n = 163, M = 17.17, SD = 1.24$ ).

There were significant differences in adolescent substance dependency status regarding three types of families ( $\chi^2(1) = 4.99, p = 0.026$ ). From 24 adolescents, a priori selected from families with “drug dependent adolescent members” (admitted at treatment at Center for illegal substance dependency treatment), 23 of them belonged to “dependent” category according to SASSI-A instrument.

## 2.2 Instruments

Relatively comprehensive questionnaire with 567 variables was applied, about one third of them for each family member, measuring different demographic, socio – economic data, about health status in different periods of life cycle, exposure to different kinds of violence, different dependency behaviors (alcohol, nicotine, drugs ...), levels of self-esteem and depression, evaluation of family climate etc. In actual report the following scales and questions from the total questionnaire were included: Zung's self – rating depression scale - 20 items (22) (Cronbach's alpha for children-adolescents = 0.86); Rosenberg's self – esteem scale - 10 items (23) (Cronbach's alpha for children-adolescents = 0.87); semantic differential for estimation of the climate in the family (15 bipolar continuums, selected according the demands of summative scale construction) (Cronbach alpha = 0.87).

The Substance Abuse Subtle Screening Inventory (SASSI-3) (20, 21) was also applied (with the permission for research application from the author). The following sub scores are obtained with SASSI-3: FVA = face valid alcohol (acknowledged use of

alcohol); FVOD = face valid other drugs (acknowledged use of other drugs); SYM = symptoms (true/false items that relate directly to substance misuse); OAT = obvious attributes (characteristics commonly associated with substance misuse. For adolescents: clinical experience has shown, that elevated OAT scores indicate personality characteristics, associated with low frustration tolerance, resentment, self pity, impatience and intolerance); SAT = subtle attributes (basic personal style similar to substance dependent people. For adolescents: SAT score reflects a tendency for individuals to be detached from their feelings, they difficultly fully accept the significance of substance usage in their lives. They also have relatively little insight into the basis and causes of their problems); DEF = defensiveness (DEF tries to determine, if the client denies the existence of a substance abuse problem. As defensiveness decreases, FVOD, OAT, FVA and SAT scores should increase. DEF may or may not be related to substance abuse and that may reflect either an enduring character trait or a temporary reaction to a current situation. Individuals with high DEF scores may focus on blaming situational and social environmental factors for their problems. Low DEF score is also indicative of emotional pain.), DEF 2 = defensiveness (only in adolescent version; opposite to sub score DEF; correctional factor for respondents hiding substance abuse specifically); SAM = supplemental addiction measure (differentiated high DEF clients with substance dependence disorders from other high DEF clients); COR = correctional (similarity to people with extensive legal difficulties); RAP = random answering pattern (assesses whether or not responses are meaningful). FAM means family vs. controls. Adult scale is based on the responses of the enabling spouses of the chemically dependent people; the FAM measures the extent to which the client may be codependent. It also measures the difference between codependent and chemically dependent people. A set of decision rules was developed for the SASSI-3, identifying people with great or small probability of having substance dependency problem. Following of these rules enables the estimator to insure the adequate accuracy of categorization. SASSI-3 disposes also with individual subscale validity (24). Kolmogorov – Smirnov test of normality showed for »climate« ( $Z = 1.53, p = 0.02$ ), for »depression« ( $Z = 1.43, p = 0.03$ ) and for »self-esteem« ( $Z = 1.29, p = 0.07$ ). Only for self-esteem null – hypothesis was accepted; anyway, it seems, that K-S test for »climate« and »depression« is too severe criterion of difference from (approximate) normal distribution. On the other

side, all SASSI sub-scores distributions significantly differed from the normal one (all  $p < 0.05$ ).

AUDIT and SASSI were validated regarding other ("outer") classifications. So as SASSI, also the AUDIT validity could be tested regarding the classification by the side of experts. The rates of agreement between the counselors and decision rules are described also as data validation (20). In our research, both kinds of estimation almost perfectly coincided with classification distinction from the side of experts – counselors (for SASSI, for example: Chi sq. (2, N = 161) = 1.27,  $p = ns$  for nondependent mothers, but with 50 % of cells with expected counts less than 5; Chi sq. (2, N = 167) = 91,  $p = 0.00$  for (non)dependent children, with 16.7% of cells with expected counts < 5, and Chi sq. (2, N = 139) = 84.90,  $p = 0.00$ , with 0% of expected counts < 5, for (non)dependent fathers).

Research was approved from the side of Ethical commission of Health Ministry of Slovenia.

### 3 Results

Table 3 provides Arithmetic Means and Standard Deviations for dependent variables (adolescent evaluation of family climate, self-esteem and depression) regarding adolescent substance abuse

status (yes / no).

One factor MANOVA, exploring differences in perceived family climate, self – esteem and depression level by adolescents as a function of adolescent dependency status also yielded some significant results. Multivariate effect was found as significant for Pillai's, Wilks and Hotelling test, all  $p = 0.00$ , but non- significant for each of two covariates (Pillai's Trace for adolescents' dependency status (no/ yes) as source of variation ( = 0.156),  $F = 10.52$ ,  $p = 0.00$ ,  $\eta^2 = 0.15$ ; Pillai's Trace for estimation of dependency for fathers as covariate ( = 0.026),  $F = 1.50$ ,  $p = 0.22$ ,  $\eta^2 = 0.03$ ; Pillai's Trace for estimation of dependency for mothers as covariate ( = 0.01),  $F = 0.56$ ,  $p = 0.64$ ,  $\eta^2 = 0.01$ ).

Box's test of equality of covariance matrices was almost non-significant on 5% risk level ( $p = 0.049$ ), what factually confirms hypothesis about equality of co variances (multivariate analogy with homogeneity of variances in univariate approaches).

Levene's test of equality of error variances confirmed homogeneity of variances neither for perceived climate ( $F(1, 175) = 10.95$ ,  $p = 0.00$ ), nor for perceived depression ( $F(1, 175) = 6.02$ ,  $p = 0.015$ , but equality of variances was assumed for self-esteem ( $F(1, 175) = 2.24$ ,  $p = 0.14$ ).

Univariate access showed significant differences ( $p < 0.05$ ) for each of three dependent variables: evaluation

Table 3. *Arithmetic Means and Standard Deviations for dependent variables regarding adolescent substance dependency.*

Tabela 3. *Aritmetične sredine in standardne deviacije odvisnih spremenljivk glede na odvisnost mladostnikov od psihoaktivnih snovi.*

	adolescent dependency odvisnost mladostnikov	m	sd	n
family climate / družinsko vzdušje	no / ne	72.13	16.85	155
	yes / da	62.23	11.29	22
self-esteem / samospoštovanje	no / ne	39.56	6.38	155
	yes / da	32.14	8.09	22
depression / depresivnost	no / ne	36.6	7.54	155
	yes / da	44.91	9.73	22

Note. Evaluations from the side of adolescent: Family climate = evaluation of the climate of own family (higher score means more positive evaluation); Self-esteem = Rosenberg's self-esteem score (higher score means more positive evaluation); Depression = Zung's depression scale (higher score means *higher* level of depression).

of family climate, level of depression and self – esteem (perceived family climate  $F(1, 174) = 8.25, p = 0.005, \eta^2 = 0.046$ ; perceived depression  $F(1, 174) = 22.70, p = 0.00, \eta^2 = 0.12$ ; self-esteem  $F(1, 174) = 23.74, p = 0.00, \eta^2 = 0.12$ ).

No significant covariate effect connecting any of dependent variable was found for AUDIT estimation of dependency for mothers (perceived family climate  $F(1, 174) = 0.64, p = 0.42, \eta^2 = 0.00$ ; perceived depression  $F(1, 174) = 0.57, p = 0.45, \eta^2 = 0.00$ ; self-esteem  $F(1, 174) = 1.28, p = 0.26, \eta^2 = 0.01$ ) and also for AUDIT estimation of dependency for fathers (perceived family climate  $F(1, 174) = 3.23, p = 0.07, \eta^2 = 0.02$ ; perceived depression  $F(1, 174) = 0.06, p = 0.81, \eta^2 = 0.00$ ; self-esteem  $F(1, 174) = 1.01, p = 0.32, \eta^2 = 0.01$ ).

Discriminant analysis was computed also in order to estimate the relative contribution of studied variables to the discrimination of adolescent substance abuse status, reflecting also adolescent dependency status evaluated from the side of therapists (“dependent” adolescents were identified and admitted to treatment by mental health professionals). The first and the only one extracted discriminant functions was highly

significant (Wilks Lambda = 0.85, Chi sq. (3) = 28.32,  $p = 0.00$ ). The null hypothesis about the homogeneity of covariance’s was just accepted on 5% risk level (Box’s  $M = 13.23, F \text{ approx} = 2.09, p = 0.05$ ). Structure matrix showed the following correlation between predictors/manifest variables and discriminant function: - 0.87 for depression, 0.87 for self esteem and 0.47 for evaluation of family climate.

According to the values of group centroids (with value = - 1.12 for “dependent” and 0.16 for “non – dependent”) for significant ( $p < 0.05$ ) discriminate function it could be suggested, that discriminate function differentiates “strongly” between those who were evaluated as substance dependent and non – dependent. Classification results showed that 76 percents of respondents were classified correctly into the non – dependent, and 70 percents into the dependent group. It’s quite a valid consequence of therapists’ diagnosis (classification).

Table 4 provides differences in adolescents’ SASSI-A sub scores between adolescents being classified as “non – dependent” and “dependent” ones.

Dependent and non-dependent adolescents differ significantly in each SASSI-A sub score, except in RAP,

Table 4. Differences in adolescents’ SASSI sub scores between adolescents being classified as “non – dependent” and “dependent” ones (Mann Whitney).

Tabela 4. Razlike med podrezultati SASSI(oblika za mladostnike) glede na uvrščenost v skupini “neodvisniki” in “odvisniki” (test Mann-Whitney).

SASSI subscores / podrezultati SASSI	adolescent dependency / odvisnost mladoletnika	n	mean rank / poprečni rang	Z	P
FVAa	no / ne	167	90.07		
	yes / da	22	132.41	- 3.56	0.00
FVODa	no / ne	167	85.67		
	yes / da	22	165.82	- 7.70	0.00
OATa	no / ne	167	87.70		
	yes / da	22	150.39	- 5.07	0.00
SATA	no / ne	167	86.19		
	yes / da	22	161.86	- 6.26	0.00
DEFa	no / ne	167	100.05		
	yes / da	22	56.66	- 3.51	0.00
DEF2a	no / ne	167	89.24		
	yes / da	22	138.70	- 4.02	0.00
CORa	no / ne	167	89.19		
	yes / da	22	139.14	- 4.06	0.00
RAPa	no / ne	167	94.96		
	yes / da	22	95.32	- 0.03	0.97

Note: FVA = face valid alcohol ; FVOD = face valid other drugs; SYM = symptoms; OAT = obvious attributes; SAT = subtle attributes; DEF = defensiveness; DEF 2 = defensiveness opposite to DEF; COR = correctional; RAP = random answering pattern; a = adolescent

which was expected. Except in DEF score, dependent adolescents obtained significantly higher scores than non-dependent ones. Lower defensiveness was found in dependent adolescents (with opposite scores in DEF 2, which was expected).

Table 5 provides differences in fathers' SASSI-3 sub scores regarding adolescents' categorization into "non – dependent" and "dependent" ones.

Significant differences in SASSI-3 scores for fathers were found in FVA, SYM, SAT, DEF, SAM and COR ( $p < 0.05$ ), while non – significant differences were found for FVOD, OAT and RAP ( $p > 0.05$ ). FAM was associated with risk level  $p = 0.07$ . Fathers of non – dependent adolescents obtained significantly higher scores than fathers of dependent adolescents in COR, SAM; DEF,

SAT, SYM and FVA.

Table 6 provides differences in mothers' SASSI-3 sub scores regarding adolescents' categorization into "non – dependent" and "dependent" ones (Mann Whitney) Significant differences in SASSI-3 sub scores for mothers regarding adolescents' dependency category were found in FVA, SYM and FAM (all  $p < 0.05$ ), while FVOD was associated with risk level 0.06. Non – significant differences ( $p > 0.05$ ) were found for OAT, SAT, DEF, SAM, COR and RAP. Mothers of non – dependent adolescents manifested significantly lower FVA, SYM and FAM scores than mothers of dependent adolescents.

Table 5. Differences in fathers' SASSI sub scores regarding adolescents' categorization into "non – dependent" and "dependent" ones (Mann Whitney).

Tabela 5. Razlike v podrezultatih instrumenta SASSI(oblaka za očete) , glede na uvrščenost mladostnikov v skupino "odvisniki" in skupino "neodvisniki " (test Mann-Whitney).

SASSI-3 sub scores	adolescent dependency / odvisnost mladoletnika	n	mean rank / poprečni rang	Z	P
FVAf	no / ne	167	98.87		
	yes / da	22	65.64	- 2.71	0.007
FVODf	no / ne	167	95.53		
	yes / da	22	90.95	- 7.44	0.46
SYMf	no / ne	167	97.70		
	yes / da	22	74.52	- 1.99	0.046
OATf	no / ne	167	96.82		
	yes / da	22	81.20	- 1.27	0.203
SATf	no / ne	167	97.93		
	yes / da	22	72.77	- 2.07	0.04
DEFf	no / ne	167	98.99		
	yes / da	22	64.73	- 2.78	0.005
SAMf	no / ne	167	99.25		
	yes / da	22	62.70	- 2.97	0.003
FAMf	no / ne	167	97.58		
	yes / da	22	75.39	- 1.81	0.07
CORf	no / ne	167	98.64		
	yes / da	22	67.36	- 2.54	0.01
RAPf	no / ne	167	97.03		
	yes / da	22	79.57	- 1.56	0.12

Note: FVA = face valid alcohol ; FVOD = face valid other drugs; SYM = symptoms; OAT = obvious attributes; SAT = subtle attributes; DEF = defensiveness; SAM = supplemental addiction measure; FAM = family vs. controls; COR = correctional; RAP = random answering pattern; f = father

Table 6. *Differences in mothers' SASSI sub scores regarding adolescents' categorization into "non – dependent" and "dependent" ones (Mann Whitney).*

Tabela 6. *Razlike v podrezultatih SASSI(oblika za za matere), glede na uvrščenost mladostnikov v skupino "neodvisniki" in skupino "odvisniki".*

SASSI-3 sub scores	adolescent dependency / odvisnost mladoletnika	n	mean rank / poprečni rang	Z	P
FVA <sub>m</sub>	no / ne	167	89.75		
	yes / da	22	134.89	- 3.76	0.00
FVOD <sub>m</sub>	no / ne	167	93.73		
	yes / da	22	104.64	- 1.87	0.06
SYM <sub>m</sub>	no / ne	167	91.76		
	yes / da	22	119.61	- 2.69	0.007
OAT <sub>m</sub>	no / ne	167	93.10		
	yes / da	22	109.45	- 1.33	0.18
SAT <sub>m</sub>	no / ne	167	94.87		
	yes / da	22	95.98	- 0.09	0.93
DEF <sub>m</sub>	no / ne	167	94.44		
	yes / da	22	99.27	- 0.39	0.69
SAM <sub>m</sub>	no / ne	167	95.35		
	yes / da	22	92.36	- 0.24	0.81
FAM <sub>m</sub>	no / ne	167	91.14		
	yes / da	22	124.30	- 2.70	0.01
COR <sub>m</sub>	no / ne	167	93.90		
	yes / da	22	103.32	- 0.77	0.44
RAP <sub>m</sub>	no / ne	167	95.16		
	yes / da	22	93.75	- 0.13	0.89

Note: FVA = face valid alcohol ; FVOD = face valid other drugs; SYM = symptoms; OAT = obvious attributes; SAT = subtle attributes; DEF = defensiveness; SAM = supplemental addiction measure; FAM = family vs. controls; COR = correctional; RAP = random answering pattern; m = mother

## 4 Discussion

Adolescents' dependence status almost completely coincided with previously existing categorization of adolescents into the category of dependents (on the basis of their inclusion into treatment programmes) (no significant difference in RAP sub score is expected because its function is to assess whether or not response are meaningful). Lower DEF sub score (DEF 2 sub score has the opposite trend as expected) in dependent adolescent means lower defensiveness (being included in treatment it can be also understood as their openness to therapeutic interventions), as well as higher level of emotional pain (which is reflected also in higher levels of depression).

Adolescents' self-esteem, perceived family climate and reported depression degree significantly differ

regarding their dependence status: dependent adolescents reported significantly higher depression level, expressed less positive evaluation of own family climate and lower levels of self – esteem. Reported depression and self – esteem were found as very highly contributing to the differences between dependency status (yes / no) in adolescents. Dependent adolescents can be evaluated as significantly more vulnerable on intra- (depression and self-esteem) as well on inter-personal relations (perceived family climate). Dependent adolescents need a lot of parental support in their treatment: research identifying key demographic, parent, and adolescent characteristics that influence engagement in outpatient drug abuse treatment showed, that engagement in treatment was related to more positive parental expectations for their adolescent's educational achievement, higher

parental reports of youth externalizing symptoms, and higher levels of family conflict perceived by the youth (25). Family income, gender, juvenile justice status, minority group status, family structure, parental age and psychopathology, and treatment characteristics did not distinguish treatment-engaged from unengaged adolescents. The results suggest that both parent and youth perceptions are pivotal to whether or not adolescents are engaged in psychotherapy. These findings lead the authors to recommend adolescent engagement interventions focusing on both the youth and his or her parents and suggest a content focus for adolescent engagement interventions (25). It is logically to presume that parents should be functional enough by themselves to be supportive to their children.

In our results FVOD, OAT and RAP SASSI-3 sub scores were associated with risk level  $p > 0.05$  so in the case of fathers', as in the case of mothers' results. Greater number of significant differences appeared for fathers' than for mothers' SASSI-3 sub scores regarding the adolescents' dependence status, and obvious the dichotomizing factor was alcohol and not other substance (ab) use. Fathers of non-dependent adolescents showed greater alcohol use, greater number of symptoms connected with alcohol abuse, greater number of subtle symptoms of personal style, similar to substance dependent people, showed higher defensiveness indicating also greater tendency to avoid the acknowledging any signs of personal limitations and faults; fathers of dependent adolescents were found to have more expressed signs of emotional pain. Fathers of non-dependent adolescents scored higher on co-dependency status and have more similarities to people with maladapted behavior. Mothers of dependent adolescents showed higher alcohol use, higher use of other substances, higher number of symptoms connected by substance abuse, and higher symptoms of people, living with a dependent family member. We were surprised by the findings, expecting vice-versa results regarding mothers' and fathers' functioning. Our results indicate fathers of dependent adolescents being "healthier" on substance use and abuse spectrum, and mothers of dependent adolescents being "more vulnerable" on substance abuse and use spectrum. One of the possibilities is that in group of families with adolescents, admitted to illegal substance dependency treatment, only families with "healthier" and more engaged fathers answered the questionnaire. On the other hand, 28 % of families belonged to the group of fathers in alcohol

addiction treatment: more than two-thirds were not fathers with alcohol problem, so it is expected that the influence of more than two-thirds of non-treated parents is greater.

The results are challenging our clinical experience. Namely in most cases mothers are involved in treatment of adolescents as support by the rule and fathers are seldom active in participating in child's treatment. It seems that the capacity of emotionally engaged fathers is underestimated. Literature data claim that we little know about the extension of parental substance abuse (26). Regarding to our results, we underestimated mothers' (of dependent adolescents) problem with substance abuse and followed only the clinical and research findings that father's alcohol dependency influence risk for adolescent substance abuse more than parental personality characteristics (27). Mutual stressful influence between substance dependent person and family members is expected in clinical experience, but it is very rarely the topic of research (28). The importance of examining parent-adolescent interactions with a bi-directional paradigm should be considered: parents influence the behavior of their children but the reverse also occurs, with adolescents exerting influence that changes the behavior of their parents (29, 30). It seems that greater mothers' vulnerability of dependent adolescents in our study is influenced by bi-directional stress transmission because mothers are used to be more engaged with adolescents (31). "The engagement" is supposed to be understood into the context, with possibilities of dysfunctional »infection«. In one of rare studies about influence of dependent patients on their family members, 52 % of relatives reported about higher alcohol, other substances intake, more eating because of their relative's drug problem, and 82 % reported about long-term negative feelings (32).

## 5 Conclusion

In the research about adolescent perception of peer and parental support as predictive factors of drug use, only perception of low fathers' support proved to be risk factor for greater drug use (neither peer neither mothers' support didn't prove to be significantly predictive) (33). We would like to underline that fathers' involvement in dependent adolescents' treatment should be greatly supported; fathers are not needed only as direct supportive factor in adolescent treatment, but also as indirect factor through supportive role to mothers / spouses.

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