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Alexithymia, attachment styles, and dissociative experiences in a sample of drug addicts

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ABSTRACT

Background: Many studies demonstrate that early trauma affects the development of cognitive and affective processing, the integration between thoughts and feelings and the ability to understand and regulate emotional experiences. Some researchers emphasize the role of dissociation.
Methods: In our study, we involved 62 participants that have completed the following questionnaires: TAS-20, TEC, DES-II, PBI, and RQ. The aim was to evaluate, through descriptive statistics, univariate variant analysis and hierarchical regression analysis, the correlation between alexithymia, traumatic, dissociative experiences, parenting style, and adult relational style in two groups.
Results: The results of our research have partially confirmed the significant differences between clinical group and control group. In the clinical group we observed dysfunctional parenting and relationship style in rapport with an alexithymic condition. In addition, alexithymia would also represent a risk factor for the development of an addictive behavior. Regarding to the relationship between dissociation and trauma, our data confirm a significant relationship between these two variables.
Conclusions: Our study underlines the importance to consider the role of emotional experiences linked to early traumatic experiences and dissociative defensive reactions.

Keywords: Addiction; attachment styles; dissociation; alexithymia; early trauma; parenting style

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Introduction

Pathological addictions are part of the '*Substance-Related and Addictive Disorders*' chapter in the DSM-5 and are included in 10 classes of substances that, if taken in excess, have in common the direct activation of the brain reward system involved in the reinforcement of behaviors and the production of memories (APA, DSM-5, 2014).

According to a psychodynamic point of view, pathological addictions concern to a morbid form characterized by the distorted use of a substance, an object or a behavior (Caretti *et al.*, 2008), to whose base there would be unresolved conflicts and traumatic experiences that would elicit intolerable disforic emotional states, from which the addicts would defend him with the use of the substance and with the behavior of dependence from it (Lingiardi and Mc Williams, PDM-2, 2018) as convey in the '*Self-medication hypothesis*', in which Khantzian (1985) affirm as "the drugs that addicts select are not chosen randomly. Their drug of choice is the result of an interaction between the psychopharmacologic action of the drug and the dominant painful feelings with which they struggle. [*For example*] Narcotic addicts prefer opiates because of their powerful muting action on the disorganizing and threatening affects of rage and aggression" (p.1259). And it is in this theoretical frame that the '*Evolutionary-relational model*' is inserted, where the addictive behaviors seem all to represent a dysfunctional attempt to oppose the uncontrolled come to light of childish traumatic pasts where the object-drug becomes the external regulator of traumatic emotions (Caretti, Craparo and Schimmenti, 2008).

Craparo and colleagues (2014) state as "early trauma disturbs the development of cognitive and affective processing, the integration of thinking and feeling, and the capacity to understand and express emotional states; these disturbances are linked to […] dissociation and alexithymia" (p.330), confirming the interrelation between alexithymia, dissociation and trauma among alcoholics. Suggesting that "the addictive behaviors have a dissociative nature that allows individuals to manage negative and unregulated emotions" (p.334).

Zdankiewicz-Ścigała and Ścigała (2018) show that a "child growing up in a cold, distant and emotionally negligent atmosphere might have difficulties developing emotional abilities such as self-awareness and introspection […] [*In*] this form of emotional maltreatment can impede a secure attachment between caregiver and care recipient and might result in the development of altered emotional abilities" (p.2) and highlight in their study the important relationships between early trauma, alexithymia, dissociation, and addiction; confirming that "alexithymia and dissociation may be considered as defense mechanisms, which form the traumatic development" (p.9) as Liotti and Farina expressed (2016).

In this regard, Somer (2019) reports that *emotional neglect* and *emotional abuse* were much more prominent trauma categories among recovering opioid use disorder patient than other adversities, suggesting the '*chemical dissociation hypothesis*' to explain the importance of opioids in distress regulation by trauma survivors. In his point of view, Somer shows that "the use of heroin by trauma survivors may represent an attempt to lessen the pain of trauma injuries when psychological dissociation has failed to do so" (p.3).

According to Bowlby's theory (1969), Segura-García and colleagues (2016) support that "the emotional security provided by parents during childhood leads children to represent themselves and others by building internal working models necessary to developing personality and making decisions about own behaviours" and that, in different researches "a deficient style of parental bonding during childhood and adolescence has been frequently reported in the anamnesis of subjects with addiction" (pp.17-18). In their paper, they report that the most frequent parental bonding style among drug and alcohol abusers was the 'affectionless control' (Formica *et al*., 2017). Furthermore, there was a negative correlation between paternal care and the use of cocaine, heroin and LSD, a positive correlation between '*father overprotection*' and the substances taken. *Mother overprotection* correlated positively with all substances taken in account. And more, high level of *paternal care* correlated with earlier onset of drug abuse. In particular, the *paternal care* was at a low level in subjects who abuse heroin. They came to the conclusion that "paternal control seems to be related to drug abuse; if it matches up with a high level of care the onset of abuse tends to come earlier, and conversely in the case of a low level of care" (p.9).

At the same time, Kooiman and colleagues (2004) support that "it seems reasonable to assume that alexithymia is not only associated with inadequate parental care, but also with other forms of developmental interference" (p.108). In their research on psychiatric patients, they found that "the perceived lack of affection and the perceived overprotection shown by each of the parents is associated with the degree of alexithymia" but not so particularly strong. They suggest that this can be explained by the fact that "optimal emotional involvement of one of the parents could protect against the development of alexithymia in cases where the other parent's emotional involvement is perceived as inadequate or negative" (p.113). In short, they the authors argue that alexithymia "do not necessarily have to be the result of negatively perceived parental care or traumatic experiences, but could also be the result of modeling of non-expression of emotions by the primary caregivers" (p.114).

This data has been implemented throughout the meta-analysis carried out by Thorberg *et al.* (2011) that they highlight as "a lack of perceived maternal care and nurturing, and perceptions of neglect, overprotection and intrusive parenting are associated with alexithymia and the facets that relate to

feelings, but not thinking (EOT). Parenting characterized by low care and high overprotection has been described as 'affectionless control' and is considered the most pathogenic of the parenting styles. Perceived low maternal care may be experienced as a lack of emotional sensitivity to childhood needs, which may manifest in adulthood as alexithymia, and in particular, difficulties identifying and describing feelings. This is in line with early attachment theory proposing that the bonding with a significant caregiver is essential for the development of internal working models for communication, regulation of emotions and interpersonal functioning as well as clinical observations proposing that childhood trauma may have an impact on the development of alexithymia. Alternatively, alexithymia may be associated with perceived lack of emotional expression by the caregiver/parent, and not necessarily with early childhood trauma or poor parenting style per se.

Finally, there are discordant opinions in literature with regard to le link between trauma and dissociation. To one hand, some researchers argue that there is a relationship among traumas, above all precocious, and dissociative symptoms (Putnam *et al.*, 1996; Saxe *et al.*, 1993; Van der Kolk *et al.*, 1996) and to the other hand, other researchers who think that there is not a so strong evidence about this correlation, and that the correlations between self-reported traumatic experiences and dissociative symptoms reported in the literature are, at best, modest; other factors may act as a third variable in the relationship between trauma and dissociation; and high scores on the Dissociative Experiences Scale are accompanied by fantasy proneness, heightened suggestibility, and susceptibility to pseudomemories. These correlates of dissociation may promote a positive response bias to retrospective self-report instruments of traumatic experiences. Thus, the possibility that dissociation encourages self-reported traumatic experiences rather than vice versa merits investigation (Merckelbach and Muris, 2001).

Dalenberg and colleagues. (2012) answer to the '*Trauma and Fantasy Models of Dissociation*' with a research in which is shown as "there is strong empirical support for the hypothesis that trauma causes dissociation, and that dissociation remains related to trauma history when fantasy proneness is controlled. [*Finding*] […] little support for the hypothesis that the dissociation–trauma relationship is due to fantasy proneness or confabulated memories of trauma" (p.551).

Method

Subject

The research project involved 62 subjects: the target group was formed of 31 adults (25 men and 6 women), aged between 20 and 52 (M = 34.84, SD = 8.68), with drug addiction, of which 87.1% had a heroin addicted and 12.9% had a cocaine addicted. The diagnosis had been made by the Sert (Service for Drug Addiction) of Catania. The target group' educational levels were as follows:

45.2% had a high school diploma, 41.9% had a middle school diploma, and 12.9% had a primary school. In reference to the job status, 54.8% had an employment, 38.7% had not an employment, and 6.5% is a student.

The control group was composed of 31 healthy adults (25 men and 6 women), aged between 19 and 49 (M = 33.84, SD = 8.71). The control group' educational levels were as follows: 48.4% had a high school diploma; 25.8% had a middle school diploma; 19.4% had a bachelor's degree, and 6.5% had a primary school. In reference to the job status, 71% had an employment, 12.9% had not an employment, and 16.1% is a student.

No statistical differences were detected between the target and control groups based on age (F = 0.01; p = 0.92) and education levels (F = .12; p = 0.73), but the same analysis shows a statistical difference on the status job (F= 15.02; p<.001) between the target (M= 2.16; S.D=.97) and control groups (M=2.58; S.D=.72).

The target group was recruited by Sert (Service for Drug Addiction) of Catania. A convenience sampling was used to recruit the participants of the control group; in particular, the participants were consecutively selected in order of appearance according to their convenient accessibility (also known as consecutive sampling).

The instruments were distributed by qualified researchers, and participants were given 40 minutes to complete them.

Research was conducted between 2016 and 2017. The research procedures described in this article were performed in compliance with the American Psychological Association and the Italian Psychological Association ethical guidelines for research.

Ethical approval for the study was obtained by the IRB, Internal Review Board, of Faculty of Human and Social Sciences at the "Kore" University of Enna.

All participants signed statements of their informed consent which were then approved by the ethics committee. All subjects were informed that participation was not paid, and they were made aware that they could withdraw from the study at any time.

Measures

The participants completed the Toronto Alexithymia Scale, the Traumatic Experiences Checklist, the Dissociative Experiences Scale II, The Dissociative Experiences Scale Taxon, the Parental Bonding Instrument, and the Relationship Questionnaire.

The 20-Item *Toronto Alexithymia Scale* (TAS-20; Taylor, Ryan and Bagby 1985) is a self-report questionnaire, which measure - on a five-point Likert scale- a total alexithymia score (TAS Total) and three subscales, which reflect the three main facets of the alexithymia construct:

1. factor scale TAS F1 assesses difficulties in identifying feelings (DIF); an example-item is the following: "I am often confused about what I feel exactly";
2. factor scale TAS F2 concerns difficulties in describing feelings (DDF); an example-item is the following: "It is difficult for me to find the appropriate words for my feelings";
3. factor scale TAS F3 reflects concrete externally oriented-thinking (EOT); an example-item is the following: "I would rather solve problems than just describe them".

The TAS Total score was used to classify the subjects in cases and controls. A cut-off of 61 was used to diagnose alexithymia and categorize the subjects into non-alexithymic (TAS Total score = < 60) and alexithymic (TAS Total score = < 61). In reference to the criterion-related validity, Cronbach's alpha coefficient is equal to.70 (Taylor, Ryan and Bagby 1985); Cronbach's α for the present study is 0.83.

The *Traumatic Experiences Checklist* (TEC; Nijenhuis *et al*., 2002) is a self-report that measures 29 types of potential trauma, including the following dimensions: emotional neglect, emotional abuse, physical abuse, sexual harassment, sexual abuse and bodily torea. With respect to these dimensions, the TEC addresses the setting in which the trauma occorred, in particular, the family of origin, extended family and/or any other setting.

The TEC is a valid self-report instrument which can be used in clinical practice and research. In reference to the criterion-related validity, Cronbach's α for the presence of emotional trauma is 0.78, for sexual trauma is equal to 0.65, for the bodily torea is 0.77 (Nijenhuls, Kruger and Van der Hart, 2002). Cronbach's α for the present study is equal to 0.84.

The *Dissociative Experiences Scale II* (DES; Bernstein & Putnam, 1986) is a self-report tool that assesses the presence, the quantity and the type of dissociative experiences through 3 subscales:

1. dissociative amnesia (concerning actions that the subject does not remember), an example-item is the following: "Some people have the experience of finding themselves in a place and have no idea how they got there";
2. absorption and imaginative involvement (being immersed in a certain activity to the point of becoming completely unaware of the external environment), an example-item is the following: "Some people find that sometimes they are listening to someone talk and they suddenly realize that they did not hear part or all of what was said";
3. depersonalization-derealization (altered perception of the Self and the environment), an example-item is the following: "Some people sometimes have the experience of feeling as though they are standing next to themselves or watching themselves do something and they actually see themselves as if they were looking at another person".

It consists of 28 items arranged on an analogue scale and scores range from 0 to 100. The cut-off value indicating the presence of pathological dissociation concerns scores ≥20: scores above 20 are generally associated with a diagnosis of disorder dissociative (according to DSM-IV-TR).

In reference to the criterion-related validity, Cronbach's α is equal to 0.92 (Bernstein and Putnam, 1986). The first Italian version of the DES (Mazzotti & Cirrincione, 2001) was used in this study; good psychometric properties were reported in the present study, such as good internal consistency (Cronbach's α =0.80). Cronbach's α for the present study is equal to 0.93

The *Dissociative Experiences Scale Taxon* (DES-T; Waller & Ross, 1997) is an eightitem subscale of the full-scale DES (these are numbers 3, 5, 7, 8, 12, 13, 22 and 27). An example-item is the following: "Some people sometimes have the experience of feeling as though they are standing next to themselves or watching themselves do something and they actually see themselves as if they were looking at another person".

The format is the same as the full-scale DES, with each item scored on a scale from 1 to 100 and the overall score being the mean of the eight items. The DES-T distinguishes pathological dissociation more accurately than does the full-scale DES, with a cutoff score of 20 capturing nearly 90% of cases of DID and DDNOS. DES is a valid and reliable tool for the measurement of dissociative experiences both in clinical samples and in control groups, revealing a similar factorial structure in groups of psychiatric patients and normal subjects.

The Cronbach Alpha for the DES-T was .78 (Waller & Ross, 1997). Cronbach's α for the present study is 0.80

The *Parental Bonding Instrument* (PBI; Parker *et al*. 1979) is a questionnaire consisting of 25 items, divided into two parts (one for mother and one for father), which retrospectively measure the perception of behavior of the parents during childhood. The instrument investigates the processes of parenting across two domains, parental care and control or overprotection, from the combination of which four types of attachment were classified: a) affectionate constraint (high scores in both scales); b) optimal parenting (high care and low protection); c) affectionless control (high protection and low care); d) and neglectful parenting (low care and low protection). Cut-off scores for the Italian population are the following: in reference to the men group, mother's care (M. = 31.21, *S.D*= 4.59), mother's control (M=12.17, *S.D*= 6.01), father's care (M. = 27.90, *S.D*= 7.56), and father's control (M=11.89, *S.D*= 5.65); in reference to the women group, mother's care (M. = 27.65, *S.D*= 7.55), mother's control (M=16.30, *S.D*= 8.60), father's care (M. = 25.10, *S.D*= 8.13), and father's control (M=13.55, *S.D*= 8.09).The Italian adaptation reports the following estimates of internal consistency of the tool: 0.75 for mother's care, 0.84 for mother's overprotection, 0.83 for father's care, and 0.88 for father's overprotection (Scinto *et al*., 1999). Cronbach's α for the present study

are the following: for mother's care is equal to 0.73, for the mother's control equal to 0.81, for father's care is equal to 0.94, for the father's control equal to 0.83.

The *Relationship Questionnaire* (RQ; Bartholomew & Horowitz, 1991) is a questionnaire which measures the adult attachment style. The RQ is a single item measure, made up of four short paragraphs, each describing a prototypical attachment pattern as it applies in close adult peer relationships, that is secure, fearful, preoccupied and dismissing. Participants are asked to rate their degree of correspondence to each prototype on a 7-point scale.

The RQ can either be worded in terms of general orientations to close relationships, orientations to romantic relationships, or orientations to a specific relationship. It can also be reworded in the third person and used to rate others' attachment patterns.

The RQ was designed to obtain continuous ratings of each of the four attachment patterns, and this is the ideal use of the measure.

Results

Analysis Methods

All analyses were conducted with SPSS 23.0.

The descriptive statistic was used to assess the presence of alexithymia, the traumatic experiences and dissociative experiences, the type of parenting and adult relationship style, comparing means scores of all participants and cut-off scores.

Student's *t*-test for independent samples was used to compare the mean score between groups (target versus control).

The univariate analysis of variance (ANOVA one-way) was used to measure the influence of independent variables (age, education level, and status job) on all dependent variables in all group.

An analysis of linear hierarchical regression was used to detect the predictive influence of the traumatic experience on the presence, the quantity and the type of dissociative experiences only in a target group.

Analyses of hierarchical regression for separate blocks were used to detect the predictor variables of the possible presence of alexithymia and the use of dysfunctional relationship styles in all participants, including the following blocks: a) anagraphic data (gender, age, educational level, status job and group); b) parenting; c) traumatic experiences; d) dissociative experiences.

Descriptive statistics

A descriptive statistical analysis was conducted in order to investigate the mean scores which target and control groups report on dependent variables. In reference to the *Toronto Alexithymia Scale*, on the control group only 6.5% presents mean scores higher than the cut-off; otherwise, on the target group, 61.3% presents mean scores higher than the cut-off.

In reference to the *Dissociative Experiences Scale Taxon*, on the control group, 19.4% had an average score higher than the cut-off indicated in the literature; otherwise, on the target group, the same analysis shows that 41.9% presents mean scores higher that the cut off scores.

In reference to the *Parental Bonding Instrument*, another descriptive statistical analysis was conducted in order to investigate the mother's parenting. The results on the control group show that: 32.3% had a neglectuful parenting, followed by 25.8% with optimal parenting, 22.6% with affectionless control, and 19.4% with affectionate constraint parenting. The same analysis of the data was conducted on the father's parenting: results show that 38.7% had an optimal parenting, followed by 29% with negligent parenting, 22.6% with affectionless control parenting, and 9.7% had an affectionate constraint parenting. In reference to the target group, the descriptive statistical analysis conducted in order to investigate the mother's parenting shows that: 32.3% manifests the affectionate constraint parenting, 29% had a negligent parenting, followed by 19.4% which presents an affectionate constraint and an optimal parenting.

The same analysis conducted on the father's parenting shows that: 51.6% manifests an optimal parenting, 25.8% neglectful parenting, followed by 19.l4% with an affectionless control, and 3.2% with an affectionate constraint parenting.

In reference to the *Relationship Questionnaire*, on the control group, 67.7% manifests a dismissing attachment, followed by 19.4% with fearful attachment, and only 12.9% with a secure relationship attachment; otherwise, on the target group, the same analysis shows the following data: 45.2% presents a dismissing attachment, 25.8% a fearful attachment, 16.1% characterized by a secure attachment, and 12.9% by a preoccupied relationship attachment.

The analysis of T-test for independent group is conducted in order to investigate the possible presence of alexithymia, traumatic experiences, dissociative experiences and the types of parenting, comparing the mean scores of control and target groups (Table 1).

Subscales	Control group		Target group		Levene's Test		Student's Test		
	M.	S.D.	M.	S.D.	*F*	*P-value*	*T*	*df*	*P*
Tas-20									
DIF	1.82	.73	2.96	1.06	3.38	.07	-4.96	60	<.001
DDF	2.18	.95	2.89	1.17	3.70	.06	-2.62	60	.01
EOT	2.28	.587	2.69	.88	2.26	.14	-2.14	60	.04
TEC									
Emotional Neglect	0.65	1.25	2.45	3.94	19.62	<.001	-2.43	60	.02
Emotional Abuse	0.74	1.69	2.13	3.44	17.47	<.001	-2.01	60	.04
Physical Abuse	0.16	0.64	0.90	1.68	20.72	<.001	-2.29	60	.03
Sexual Harassment	0.65	1.17	1.19	1.72	4.64	.03	-1.47	60	.15
Sexual Abuse	0.06	0.36	0.52	1.09	21.87	<.001	-2.19	60	.03
Bodily Threat	0.00	0.00	0.45	0.96	43.94	<.001	-2.62	60	.01
DES II	13.25	11.50	20.70	15.98	4.50	.04	-2.10	60	.04
DES – T	5.68	3.69	6.06	3.71	.14	.71	-.41	60	.68
PBI									
Mother'scare	2.51	0.44	2.25	0.70	3.58	.06	1.72	60	.09
Mother's control	0.97	0.54	1.04	0.57	.73	.40	-.51	60	.62
Father's care	1.95	0.67	1.36	1.04	10.17	<.001	2.65	60	.01
Father's control	0.95	0.52	0.90	0.64	.44	.51	.31	60	.76

Note: *p < 0.001. two-tailed; p < 0.01. two-tailed; p < 0.05. two-tailed.*
Note: The research involved 62 subjects: the target group was formed of 31 adult (25 men and 6 women), aged between 20 and 52 (*M* = 34.84, *SD* = 8.68); the control group was composed of 31 healthy adult (25 men and 6 women),aged between 19 and 49 (*M* = 33.84, *SD* = 8.71).
Abbreviation: DIF = difficulty identifying feelings; DDF= difficulty describing feelings; EOT= externally-oriented thinking style.

Table 1 M and SD of all variables in the target and control groups

In reference to the *Toronto Alexithymia Scales*, the first analysis shows that, the target group reported average scores significantly higher than the control group in DIF (F=3.38, p<.001), DDF (F=3.71; p<.05) and EOT (F=2.26; p<.05) sub-scales.

Similarly, in reference to the *Traumatic Experiences Checklist*, t-test shows a significant difference for the the following variables: emotional neglect (F=19.62; p<.001), emotional abuse (F=17.47; p<.001), physical abuse (F=20.72; p<.001), sexual harassment (F=4.64; p<.05), sexual abuse (F=21.88; p<.001), and bodily threat from a person (F=43.94; p<.001). In particular, the target group manifest average scores significantly higher than the control group.

The same analysis shows as the target group manifest higher scores in the *Dissociative Experiences Scale* (F=4.5; p<.05) than the control group, although it underlines the absence of a significant different for the *Dissociative Experiences Scale Taxon* (F=.14; p=.71).

Compared to the parenting styles, *t*-test shows the presence of a significant difference between the target and the control group for the father's care (F=10.17; p<.01). In particular, the target group manifest average scores significantly lower than the control group.

Finally, in reference to the *Relationship Questionnaire*, *t*-test shows the absence of a difference between the target and the control group (F= 2.39; p=1.28).

The univariate analysis of variance (ANOVA one-way) was used to measure the influence of independent variables (age, education level, and status job) on all dependent variables.

In reference to the control group, the ANOVA showed how the gender variable affects only the externally-oriented thinking style [$F(1, 30) = 8.11$, $p < 0.01$] and the sexual harassment sub-scale [$F(1, 30) = 4.68$, $p < 0.05$]: the analysis of the average scores demonstrates that, in the sexual harassment sub-scale, women present higher scores than men (Men: M=.10, *S.D*=.01; Women: M=.33; *S.D*=.82), who manifest a higher level of the externally-oriented thinking style (Men: M=2.41, *S.D*=.55; Women: M=1.73; *S.D*=.39).

The second ANOVA shows the effect of age on the externally-oriented thinking style [$F(1, 30) = 4.19$, $p < 0.05$] and the mother's care [$F(1, 30) = 3.14$, $p < 0.05$]: in particular, in the externally-oriented thinking style, the group of the mature adults presents higher scores than the younger, who manifest higher perception of the mother's care.

The same analysis of the data shows that the level of education and the status job do not affect dependent variables ($p > 0.05$).

In reference to the target group, the univariate analysis of variance ANOVA (one-way) showed how age affects the dissociative experiences [$F(1, 30) = 12.31$, $p < 0.01$] and the father's control [$F(1, 30) = 5.43$, $p < 0.05$]: the analysis of the average scores demonstrates that women present higher scores than men in the dissociative experiences (Men: M=16.50, *S.D*=12.31; Women: M=38.22; *S.D*=18.64) and the perception of the father's control (Men: M=.78, *S.D*=.59; Women: M=1.41; *S.D*=.65).

The same analysis of the data shows that the age variable does not affect dependent variables ($p > 0.05$).

The third ANOVA shows the influence of the education level on the relationship style [$F(1, 30) = 6.29$, $p < 0.01$] and the mother's control [$F(1, 30) = 3.43$, $p < 0.05$]: in particular, Tukey's post hoc shows that subjects with the elementary license have a fearful attachment and a lower level of mother's control.

The same analysis of the data shows that the status job influences the perception of dissociative experiences [$F(1, 30) = 4.52$, $p < 0.05$]: the analysis of the average scores demonstrates that employed subjects (M=13.66, *S.D*=8.56) manifest a lower level of dissociative experiences than unemployed ones (M=29.32, *S.D*=18.34).

Linear hierarchical regression

An analysis of linear hierarchical regression was used to detect the predictive influence of the traumatic experience on the presence, the quantity and the type of dissociative experiences only in a target group. The multiple regression analysis shows how only the presence of the emotional abuse

is predictive of the dissociative experiences (β = −.44, $p < .05$) and it explains 29% of the overall variance.

Four analyses of hierarchical regression for separate blocks were used to detect the predictor variables of the possible presence of alexithymia and the use of disfunctional relationship styles in all participants, including the following blocks: a) anagraphic data (gender, age, educational level, status job and group); b) parenting; c) traumatic experiences; d) dissociative experiences.

The first analysis shows that belonging to the target group, having a lower level of the mother's control, a higher level of the emotional neglet and the dissociative experiences are predictive variables of the difficulty identifying feelings (Table 2).

Model	Measures	R^2	Adjusted R^2	SE	*B*	*T*	*P-value*
1	Group	.291	.279	.231	.539	4.963	.000
2	Group	.372	.316	.243	.517	4.517	.000
	Mother's control			.220	-.212	-1.870	.047
	Mother's care			.201	-.171	-1.528	.132
	Father's care			.146	-.020	-.161	.872
	Father's control			.214	.172	1.490	.142
3	Group	.442	.319	.253	.553	4.650	.000
	Mother's control			.242	-.205	-1.647	.106
	Mother's care			.216	-.224	-1.866	.068
	Father's care			.154	-.079	-.605	.548
	Father's control			.230	.132	1.067	.291
	Emotional Neglect			.064	.359	1.984	.050
	Emotional Abuse			.076	.202	1.025	.310
	Physical Abuse			.125	-.054	-.355	.724
	Sexual Harassment			.118	.030	.186	.853
	Sexual Abuse			.264	.215	1.043	.302
	Bodily Threat			.362	-.189	-.788	.435
4	Group	.535	.410	.240	.516	4.568	.000
	Mother's control			.225	-.204	-1.761	.085
	Mother's care			.214	-.101	-.852	.399
	Father's care			.145	-.058	-.469	.641
	Father's control			.224	.057	.472	.639
	Emotional Neglect			.061	-.240	-1.378	.175
	Emotional Abuse			.075	.053	.273	.786
	Physical Abuse			.118	-.120	-.834	.409
	Sexual Harassment			.110	.075	.494	.624
	Sexual Abuse			.248	.302	1.559	.126
	Bodily Threat			.339	-.264	-1.174	.246
	DES II			.010	.257	1.965	.045
	DES T			.032	.220	2.032	.048

Note**:* ** p <.01; * p <.05. ***Abbreviation: SE= Standard Error; β= Beta Standardized Coefficients

Table 2 - Model summary of hierarchical regression analyses for separate blocks that predicts DIF in all groups

Furthermore, belonging to the target group (β=.32, p<.01), having a higher level of the emotional neglet (β=.39, p<.05) can be considered as predictors of the difficulty describing feelings (10.8% of the overall variance explained).

Another regression analysis underlines that being women, belonging to the target group, having a higher level of the emotional abuse and dissociative experiences can be considered as predictors of the tendency to use the externally oriented thinking style (Table 3).

Model	Measures	R^2	Adjusted R^2	SE	*B*	*T*	*P-value*
1	Gender	.118	.103	.234	-.343	-2.826	.006
2	Gender	.188	.161	.227	-.343	-2.922	.005
	Group			.179	.266	2.268	.027
3	Gender	.221	.136	.255	-.334	-2.530	.014
	Group			.197	.257	2.002	.050
	Mother's control			.182	-.148	-1.133	.262
	Mother's care			.166	.077	.598	.552
	Father's care			.118	-.100	-.715	.477
	Father's control			.184	-.058	-.420	.676
4	Gender	.349	.190	.262	-.235	-1.738	.088
	Group			.199	.313	2.402	.020
	Mother's control			.199	-.014	-.100	.921
	Mother's care			.170	.022	.164	.870
	Father's care			.121	-.131	-.916	.364
	Father's control			.193	-.128	-.886	.380
	Emotional Neglect			.050	.167	.842	.404
	Emotional Abuse			.060	.534	2.475	.017
	Physical Abuse			.098	.031	.185	.854
	Sexual Harassment			.093	.152	.850	.399
	Sexual Abuse			.207	.183	.816	.419
	Bodily Threat			.284	-.287	-1.095	.279
5	Gender	.374	.188	.264	-.218	-1.593	.118
	Group			.204	.328	2.452	.018
	Mother's control			.199	-.010	-.069	.945
	Mother's care			.181	.060	.432	.668
	Father's care			.122	-.104	-.720	.475
	Father's control			.200	-.127	-.849	.400
	Emotional Neglect			.052	.176	.854	.397
	Emotional Abuse			.063	-.530	-2.315	.025
	Physical Abuse			.099	.011	.066	.948
	Sexual Harassment			.093	.167	.929	.357
	Sexual Abuse			.209	.204	.896	.375
	Bodily Threat			.287	-.296	-1.120	.269
	DES II			.008	-.040	-.260	.796
	DES T			.027	.173	1.360	.050

Note**:* ** p <.01; * p <.05. ***Abbreviation: SE= Standard Error; β= Beta Standardized Coefficients.

Table 3 - Model summary of hierarchical regression analyses for separate blocks that predicts EOT in all groups

Furthermore, a higher educational level (β=.30, p<.01) and a high level of dissociative experiences (β=.33, p<.05) can be considered as predictors of the relationship style (9.8% of the overall variance explained).

Discussion and Conclusion

This work partially disconfirmed the literature, according to which adult addicts had a dysfunctional parenting and relationship style; in actual fact, one third of the target group have an affectionate

constraint parenting with their mother, although, half of the population has a optimal parenting with their father.

This result confirms some studies showing the existence of relationships between a dysfunctional parent-child relationship (characterized by absence of care and excessive control) and the development of substance abuse problems (Torresani, Favaretto and Zimmermann, 2000).

Similarly, the half of the target group presents a dismissing relationship style, followed a quarter of ones with a fearful style; these data confirm the recent literature that highlights the presence of a greater frequency of fearful and avoidant styles in subjects that substance abuse, especially in heroin addicts (Schindler, Thomasius, Sack, Gemeinhardt and Kustner, 2007).

Comparing the target and control groups, it was possible to evaluate whether addicts presented alexithymia when compared to the control group with socio - demographic characteristics. Outcomes confirmed that in the control group only 6.5% presents mean scores higher than the cut-off; otherwise, on the target group, 61.3% presents mean scores higher than the cut-off. The data confirm the link between drug addiction and alexithymia and how alexithymia represents a risk factor, in predisposed subjects, for the development of an addiction (Gori *et al.*, 2014, 2017; Handelsman *et al.*, 2000).

In reference to the dissociative experiences 41.9% presents mean scores higher that the cut-off scores. Similarly, in reference to the traumatic experiences, data underlines that the target group manifests average scores significantly higher than the control group in the following dimensions: emotional neglect, emotional abuse, physical abuse, sexual harassment, sexual abuse, and bodily threat from a person. This fact confirms how subjects in the presence of a dysfunctional attachment style (insecure), fail to sufficiently develop their own self-regulation skills, developing dissociative strategies aimed at avoiding the activation of mental states that they would not be able to regulate (Mosquera, Gonzalez, & van der Hart, 2011; Pellerone, Tomasello & Migliorisi, 2017; Pellerone *et al*., 2017a).

The analysis of the predictive variables on the presence, the quantity and the type of dissociative experiences underlines that only the emotional abuse is predictive of the dissociative experiences.

In fact, the literature confirms the presence of a close correlation between trauma, abuse (especially in childhood) and the development of a Dissociative Disorder as instrumental to the attempt to control traumatic memories through detachment from them (Bradley, Greene, Russ, Dutra, and Westen, 2005; Pellerone *et al.,* 2017b). The relationship between trauma and dissociation would seem to be non-linear: dissociation is not a defense against the pain of trauma, as it is configured as a disintegration of consciousness and intersubjectivity (Craparo *et al.*, 2018).

Furthermore, our study underlines that being addicts with maternal parenting characterized by affectionless control, a higher level of emotional neglect and dissociative experiences are predictive variables of the difficulty identifying feelings. Similarly, being addicts characterized by a high level of emotional neglect can be considered as predictors of the difficulty describing feelings. Also, being adult women addicts with a higher level of the emotional abuse and dissociative experiences can be considered as predictor of the tendency to use the externally oriented thinking style.

From the above it is concluded that some situational factors indeed seem to enhance the development of alexithymia and in particular the presence of dysfunctional parenting and the dissociative experience, confirming the literature which emphasize as alexithymia can also be induced by situational factors such as massive psychological trauma in childhood or later in life (called secondary alexithymia, for descriptions see (Craparo, 2014; Craparo *et al.*, 2016; Iacolino *et al.*, 2017; Krystal, 1988).

Moreover, it appears interesting as only the emotional and emotional neglet seem to predict the alexithymia, while physical or sexual traumas were not associated with high alexithymic characteristics. The results show a first indication of differentiation between a "neglect" subtype and a "non-neglect" of alexithymia, as confirmed by the international literature (Aust *et al*., 2013).

Finally, a higher educational level and a high level of dissociative experiences can be considered as predictors of the relationship style, supporting the Model of Van der Kolk on the presence of inverse relationship between secure attachment and dissociative tendency (Calamari & Pini, 2003; Van der Kolk, 2017).

Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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