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Comparison of MMPI-A characteristics between juvenile offenders and adolescents who experienced child maltreatment

Confronto delle caratteristiche del MMPI-A tra minorenni autori di reato e adolescenti che hanno subito maltrattamenti

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Abstract

The Minnesota Multiphasic Personality Inventory–Adolescent (MMPI–A) is the self-report test most commonly applied to assess personality charatceristics, behavior difficulties, and psychopathology among adolescents. However, the literature on the use of the MMPI-A in different forensic populations remains limited. The current investigation was designed to identify differences in the MMPI–A scales between adolescents with a history of child maltreatment (CM), juvenile convicted of different type of offenses (JOs) or adolescents who never had contact with the Juvenile Justice and with no history childhood maltreatment. We found that adolescents in CM group had higher ANX, BIZ, LSE, and SOD scores compared with adolescents in JOs group; while they had higher BIZ, TRT and MAC scores compared with adolescents in control group. Adolescents in JOs group had higher LSE and MAC scores compared with adolescents in control group. Finding differences in personality profiles between different forensic populations could lead to the creation of more appropriate treatments as well as a better understanding of the possible responses to outcomes of treatments.

Keywords: MMPI-2-A, child maltreatment, Juvenile offenders, Personality assessment.

Riassunto

Il Minnesota Multiphasic Personality Inventory-Adolescent (MMPI-A) è il test di autovalutazione più comunemente applicato per valutare i tratti della personalità, le difficoltà comportamentali e la psicopatologia tra gli adolescenti. Tuttavia, la letteratura sull'uso dell'MMPI-A in diverse popolazioni forensi rimane limitata. L'attuale indagine è stata progettata per identificare le differenze nelle scale MMPI-A tra adolescenti con una storia di maltrattamenti subiti (CM), minori condannati per diversi tipi di reati (JO) o adolescenti che non hanno mai avuto contatti con la Giustizia Minorile e senza storia maltrattamenti infantili. Abbiamo scoperto che gli adolescenti nel gruppo CM avevano punteggi ANX, BIZ, LSE e SOD più alti rispetto agli adolescenti nel gruppo JOs; mentre avevano punteggi BIZ, TRT e MAC più alti rispetto agli adolescenti nel gruppo di controllo. Gli adolescenti nel gruppo JOs avevano punteggi MAC più alti rispetto agli adolescenti nel gruppo di controllo. Trovare differenze nei profili di personalità tra diverse popolazioni forensi potrebbe portare alla creazione di trattamenti più appropriati, nonché a una migliore comprensione delle possibili risposte agli esiti dei trattamenti.

Parole chiave: MMPI-2-A, maltrattamento sui minori, minorenni delinquenti, valutazione della personalità.

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Comparison of MMPI-A characteristics between juvenile offenders and adolescents who experienced child maltreatment

1. Introduction

The Minnesota Multiphasic Personality Inventory (MMPI; Hathaway and McKinley, 1943) is one of the tests most commonly used worldwide, in both clinical and forensic settings. It was developed to support psychodiagnostic assessments in adults (Woychyshyn et al., 1992) but soon after its publication it began to be used in adolescents, too, again in both clinical and forensic settings (Capwell, 1945). Although the MMPI rapidly became the self-report inventory most frequently employed to assess psychological disease in adolescence, it presents some problems, such as the test duration, inadequate norms, and lack of specific scales for adolescents (Archer et al., 1991).

The Minnesota Multiphasic Personality Inventory-Adolescent (MMPI-A; Butcher et al., 1992) was then developed to deal with these and other problems. The MMPI-A is now the self-report test most commonly applied to assess adolescent psychopathology (Archer and Newsom, 2000; Rinaldo and Baer, 2003; McGrath et al. 2002; Baum et al., 2009). The youth version was developed to improve measurement of personality, behavior difficulties, and psychopathology among adolescents. When analyzing research on the MMPI-A, therefore, it is useful to remember the constructs on which the test is based, having been designed to assess and measure adolescent psychopathology. In general, two ample constructs have been recognized, namely externalization and interiorization of symptoms, as the means of organizing and describing infantile and adolescent psychopathology. These ample factors have also been extended to adult psychopathology (Krueger et al., 2007; Kruh et al., 2005).

Externalizing behaviors includes "acting out" symptoms such as the abuse of substances, behavioral disturbances, taking risks, impulsiveness and aggressiveness (Alcorn et al.2013). Vice versa, interiorization of psychopathology is characterized by internal disurbances, typically negative affect problems (e.g. anxiety, sadness, fear, depression) and some cognitive states like worrying and brooding (Lackner and Fresco, 2016). Naturally, not all psychiatric symptoms and syndromes can be fully adapted to these two categories. For example, research has demonstrated that thought disturbances symptoms do not belong to either of the groups (Eisenberg, et al., 2005; Forbey and Ben-Porath, 2003). The MMPI A is used in both clinical and forensic settings. Efforts to establish the reliability and validity of the MMPI-A scale scores in forensic samples are essential in view of their potential implications in forensic assessments (Veltri et al., 2009; Vitacco et al.2002; Waschbusch et al., 2007). Some authors have pointed out that in juvenile justice systems, psychological assessments are often requested to aid the Judge to make decisions as to appropriate sentences, or in pre-trial litigation deliberations (Grisso, 1998). Others have stated that the MMPI-A has also been used as an assessment tool in cases of personal harm, to assess victims of sexual abuse and in child custody evaluations (Archer et al. 2003; Asscher et al., 2011). The use of the MMPI-A has been described in documented litigation decisions ranging from children's custody evaluations to assessments of competency and to transfers for final judgment, as for adults (Pen a et al., 1996; Pennuto and Archer, 2008). In any case, the literature on the forensic use of the MMPI-A and on comparisons in clinical fields remains limited (Veltri et al. 2009). The main problem is that many studies fail to use comparison groups at all, making the results of these studies difficult to interpret and/or generalize. Finding differences in personality between different forensic populations could lead to the creation of more appropriate treatments as well as a better understanding of the possible responses to outcomes of treatments. In addition, identifying personality differences could help to understanding the motivation behind offending, as well as the effects of childhood abuse on personality in adolescents.

Then, the purpose of the current study was to investigate the extent to which the MMPI-A profiles of adolescents with a history of child maltreatment (CM), could be successfully discriminated from those convicted of different type of offenses (Juvenile offenders group - JOs) or adolescents who never had contact with the Juvenile Justice and with no history childhood maltreatment (control group).

2. Method

2.1 Procedure

We conducted a retrospective study to compare the MMPI-A scores obtained by adolescents with a history of child maltreatment (CM), adolescents convicted of different type of offenses (Juvenile offenders group - JOs), and adolescents who never had contact with the Italian Juvenile Justice and with no history childhood maltreatment (control group). Therefore, we use data from our previous observational study designed and performed by Margari et al.2015; while adolescent in CM group were evaluated in the Child Maltreatment Unit between the years 2010 and 2015. Exclusion criteria included adolescents with chronic medical conditions, hearing, visual, or physical impairments, or specified genetic syndromes, and insufficient cognitive skills to complete the questionnaires. The

	CM (N=61)	JOs (N=21)		
	Mean±sd	Mean±sd	F	p-Value
HS	54,5 ± 11,2	52,9 ± 11,9	-.677	.499
D	54,7 ± 9,8	50,6 ± 8,7	-1.363	.173
Hy	53,1 ± 10,3	48,8 ± 7,5	-1.205	.228
PD	56,5 ± 13,2	53,9 ± 11,6	-.911	.362
MF	50,2 ± 9,6	47,2 ± 7,8	-1.412	.158
PA	57,2 ± 11,6	56,5 ± 9,4	-.154	.877
PT	53,3 ± 9,4	51,7 ± 12,6	-1.005	.315
MA	54,4 ±11,4	52,1 ± 11,2	-.948	.343
SI	51,66 ± 7,8	49,1 ± 9,5	-1.053	.292
ANX	56,7 ± 11,9	49,8 ± 9,5	-2.145	.03*
OBS	52,6 ± 10,7	52,38 ± 12	-.511	.609
DEP	51,8 ± 9,8	48,8 ± 10,1	-1.601	.109
HEA	56,6 ± 12,5	53,7 ± 13,1	-1.160	.246
BIZ	58,9 ± 12,8	51,2 ± 11,9	-2.617	.008*
ANG	52,4 ± 11,9	49,4 ± 11,2	-.740	.460
CYN	50,4 ± 12	43,4 ± 7,9	-.415	.678
LSE	53,9 ± 9,4	47,1 ± 10,5	-3.094	.001*
SOD	52,7 ± 8,5	47,7 ± 6,7	-2.374	.017*
FAM	56 ± 13	49,7 ± 10,2	-1.979	.054
SCH	55,5 ± 10,7	55,1 ± 12,8	-.532	.595
TRT	56,72 ± 13,3	53,1 ± 14,6	-1.400	.162
MAC	58,1 ± 11,2	62,6 ± 12,3	-.891	.373
ACK	54,2 ± 11,6	56,3 ± 11,9	-.579	.563
PRO	55,5 ± 11	55 ± 12,6	-.373	.709
A	52,3 ± 10,1	51,1 ± 11,2	-.729	.466
R	50,6 ± 11,3	49,3 ± 7,7	-.293	.770
SC	57,3 ± 12,2	51,9 ± 13,1	-1.925	.054

Child maltreatment (CM); Juvenile offenders (JOs); Hypocondrias (HS); Depression (D); Hysteria (Hy); Psychopathic Deviate (PD); Masculinity-Femminility (MF); Paranoia(PA); Psychastenia(PT); Schizophrenia(Sc); Hypomania(Ma); Social Introversion(SI); Anxiety(ANX); Obsessiveness (OBS); Depression (DEP); Health Concerns (HEA); Bizzarre Mentation (BIZ); Anger (ANG); Cynism (CYN); Low Self-Esteem (LSE); Social Discomfort (SOD); Family Problems (FAM); School problems (SCH); Negative tratment indicators (TRT); MacAndrews Alcoholism Scale (MAC); Alcohol/Drug Problem Acknowledgement(ACK); Alcohol/Drug Problem Proneness (PRO); Anxiety Scale (A); Repression Scale (R); Schizophrenia (SC); *p <0.05

Table 1. Differences in MMPI-A scales between CM and JOs groups

control group consisted of participants who never had contact with the Italian Juvenile Justice. Written consensus was obtained from parents or legal guardians of all participating teenagers. The research project was authorized by the Research Office of Juvenile Justice Section of the Ministry of Justice of the Italian State.

2.2 Participants

The sample consisted of 106 male participants, with an age range from 14 to 16 years, divided into three groups: 61 adolescents of the CM group; 21 adolescents of the JOs group; and 24 adolescents of the control group. The study inclusion criteria included: 1) Being between 14 and 16 years of age; 2) Italian-speaking; 3) Having a normal intelligence quotient (IQ ≥ 70) level; 4) Having had at least five years of school education; 5) No genetic syndromes, active neurological or psychiatric disease; 6) Their participation would not harm their treatment alliance with the childcare workers; 7) Having resided in the center for at least 20 days (only for CM group); 8) JOs were included in the Italian probation system.

All participants in the CM group were maltreated adolescents removed from their parents care due to abuse or maltreatment. These adolescents were placed in residential care (Child Maltreatment Unit) after notification of the Juvenile Justice System. Residential care refers to long-term care given to adolescents who stay in a residential setting rather than in their own home or family home. Adolescents in residential care could have contact with their birth family. This is arranged by the multidisciplinary team (child neuropsychiatrist, psychology, pedagogist, social workers, child abuse expert consultant) of the Unit.

The JOs were recruited in the Social Services Offices of Juvenile Justice of Puglia (Italy). The JOs were included in the Italian probation system and were enrolled in the study within 2 years of the crime. The purpose of offender probation is to safely supervise youth charged with criminal conduct in the least restrictive placement, to promote the growth and maturation of the minor and to promote the reconciliation between the offender and the victim. The JOs with previous psychiatric disorders were excluded from the study because the Italian justice system considers a suspect not punishable if he was suffering from a psychiatric disorder at the time of committing the offense.

The control group consisted of participants who never had contact with the Italian Juvenile Justice. The control group was recruited from schools located in Puglia. We selected a random sampling, based on the availability of parents or subjects to participate in the study.

2.3. Measures

A data collection form was used to characterize the study subjects, which included the following information: age, sex, educational qualification (middle school), abuse types (physical, neglect, sexual, and psychological), offense types (sexual toucher offense, oral genital contact, pornographic material, physical aggression, psychological and verbal offenses, group or individual offense), child's age when the first abuse or offense occurred (<3 year, 4-7 years, 8-11 years, 12-15 years, >15 years).

The assessment included the administration of the Minnesota Multiphasic Personality Inventory-Adolescent (MMPI-A). The MMPI-A (Butcher et al., 1992) was used for the assessment of personality characteristics. The MMPI–A is a 478- item true– false questionnaire and contains adolescent specific scales and other unique features designed to make the instrument especially appropriate for adolescents. The questions asked on the MMPI-A are designed to evaluate the thoughts, emotions, attitudes, and behavioral traits that comprise personality. In the MMPI–A normative sample, Butcher et al reported Clinical scale alpha coefficients ranging from .43 (Clinical Scale 5) to .88 (Clinical Scale 8) for boys and from 40 (Clinical Scale 5) to .89 (Clinical Scale 8) for girls (Butcher et al., 1992). In the current study, for each scale, a T-score of 65 was considered as the level of clinical significance in the 95th percentile.

2.4 Data Analysis

Clinical and socio-demographic data were subjected to statistical analysis. Descriptive analysis was conducted for all featuring of the three samples. Fisher's exact test was used to compare categorical variables (gender). Raw scores obtained from each subscale of the MMPI-A were transformed into t-scores to allow for consideration of how an individual's response compares with that of the population norms. For MMPI-A the borderline and clinical scores were put together (%). To compare continuous variables between groups (CM vs JOs; CM vs control; JOs vs control), the nonparametric Mann–Whitney U-test was used. A p-value of less than 0.05 was considered as statistically significant. For statistical processing we used the data processing program the Statistical Package for Social Science version 20.0

3. Results

All the participants were middle-school boys. The mean ages of CM, JOs and control were 15.4 ± 1.5, 15.2 ± 1.4 and 15.6 ± 1.1 years, respectively. No statistical differences between groups in age (CM vs JOs p = 0.91; CM vs control p = 0.23; JOs vs control p = 202) were found. In the CM group, neglect is the most common type of abuse (68.8%), followed by physical abuse (16.4%), emotional abuse (8.2%), and sexual abuse (6.6%). In JOs group, the 66.7% were accused of sexual offenses (sexual touching offense, oral-genital contact, porno- graphic material, physical aggression and psychological and verbal offenses), and the 33.3% were convicted of different type of offenses (e.g. offense against the person, against property) but with no history of sexual offense.

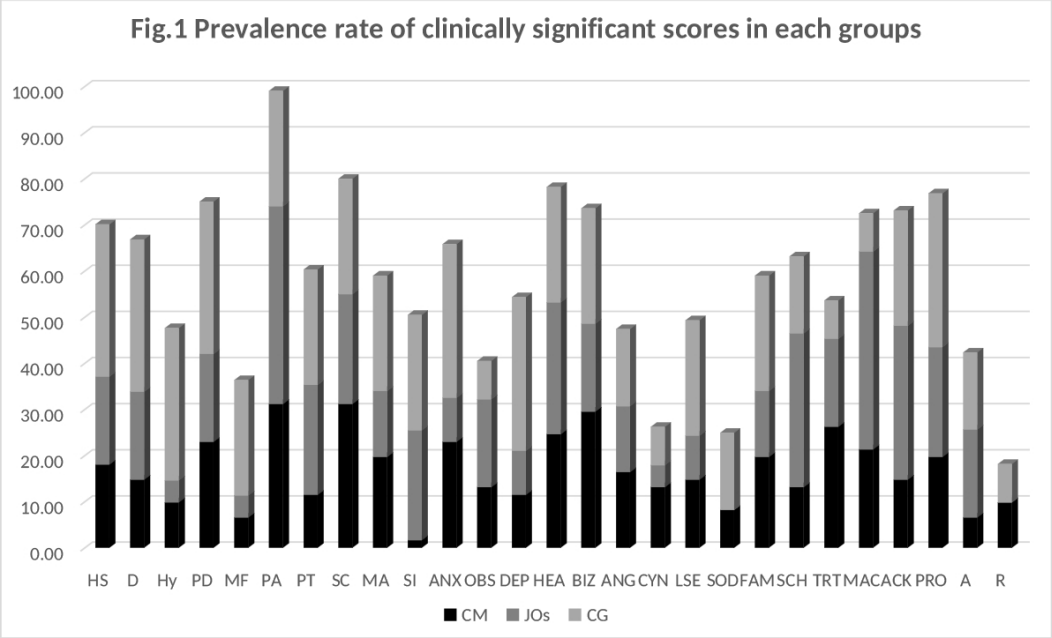

Figure 1. We report the prevalence of subjects who exceed the cut-off for each MMPI-A scale

3.1 Personality characteristics

In Figure 1, we report the prevalence of subjects who exceed the cut-off for each MMPI-A scale. The most commonly elevated scales among the CM group were paranoia (Pa, 31%), schizophrenia (Sc, 31%), and bizarre mentation (BIZ, 29%). The most commonly elevated scales for the JOs group were paranoia (Pa, 31%), MacAndrew Alcoholism Scale (MAC, 43%), school problems (SCH, 33%), and ACK (Alcohol/Drug Problem, 33%).

The differences detected in MMPI-A scores between CM, JOs and control group are reported in Table 2, 3, and 4. We found that adolescents in CM group had higher ANX ($p = 0.03$), BIZ ($p = 0.008$), LSE ($p = 0.001$), and SOD ($p = 0.017$) scores compared with adolescents in JOs group. Further, we detected statistically significant differences between CM and control groups in BIZ ($p = 0.006$), TRT ($p = 0.003$) and MAC ($p = 0.009$). Finally, statistically significant differences between JOs and control groups in LSE ($p = 0.02$) and MAC ($p = 0.003$) scores were found.

4. Discussion

The aim of the study was to compared the MMPI-A scores obtained by adolescents with a history of child maltreatment, JOs and adolescents who never had contact with the Italian Juvenile Justice and with no history of childhood maltreatment. Regarding CM group, our results overlapped those of other studies. In particular, we found higher A-ANX, A-LSE, A- SOD, A-BIZ and A-TRT scores compared with JOs and control group. Only one study (Forbey et al., 2000) examined differences between psychological, behavioral, and psychosocial characteristics of abused adolescents and non-sexually abused peers specifically using the MMPI-A, while several other studies described abused child and adolescents as characterized by psychological distress, anxiety and poor self-esteem (Freshwater et al., 2001; Johnson, 2004; Lev-Wiesel, 2008; Forbey, et al., 2000). In fact, adolescents with a history of child maltreatment might learn to believe the world is a dangerous place, that they are only liked when they do what the abuser wants and that they deserve to be abused (Ainscough and Toon, 2000). In particular, adolescent psychological and behavioral problems are predicted by early physical maltreatment which caused more negative developmental outcomes than the same type of harm occurring at later ages. In fact, older children have developed stable attachment patterns, senses of self, more mature forms of information processing and control over their environments which helped them to better cope with maltreatment (Keiley et al., 2001). As found by Lansford and colleagues adolescents maltreated during childhood report more absences from school and levels of aggression, anxiety/depression, dissociation, posttraumatic stress disorder symptoms, social problems, thought problems, and social withdrawal higher than those of their non-maltreated counterparts (Lansfordetal.,2002). Moreover, increasing exposure to frequent, severe punishment, or harsh and abusive treatment during childhood was associated with significant increases in rates of psychiatric disorder in young adulthood, especially anxiety disorders and major depression (Fergusson and Lynskey, 1997). It was also find associations between childhood sexual abuse and alcohol and drugs consumption during adolescence. Victims of sexual abuse were 1.60 times as likely to engage in regular alcohol use and binge drinking, 1.80 times as li-

	CM (N=61)	CG (N=24)		
	Mean±sd	Mean±sd	F	p-Value
HS	54,5 ± 11,2	56,5 ± 17,3	-.470	.638
D	54,7 ± 9,8	54,5 ± 14,5	-.969	.333
Hy	53,1 ± 10,3	54,33 ± 10,0	-.411	.681
PD	56,5 ± 13,2	56,5 ± 9,1	-.245	.807
MF	50,2 ± 9,6	52 ± 10,1	-.695	.487
PA	57,2 ± 11,6	52,42 ± 13,6	-1.692	.091
PT	53,3 ± 9,4	52,6± 12,8	-.420	.674
MA	54,4 ±11,4	53,7 ± 9,9	-.147	.883
SI	51,66 ± 7,8	49 ± 10,1	-1.232	.218
ANX	56,7 ± 11,9	51,7 ± 12,5	-1.703	.089
OBS	52,6 ± 10,7	51,3 ± 6,9	-.372	.710
DEP	51,8 ± 9,8	54,1 ± 11,7	-.411	.681
HEA	56,6 ± 12,5	53,5 ± 10,1	-1.859	.063
BIZ	58,9 ± 12,8	50,3 ± 13,7	-2.746	.006*
ANG	52,4 ± 11,9	51,9 ± 7,9	-.205	.837
CYN	50,4 ± 12	52,7 ± 9,1	-1.614	.106
LSE	53,9 ± 9,4	54,7 ± 12,8	-.578	.563
SOD	52,7 ± 8,5	49,3 ± 9,8	-1.871	.061
FAM	56 ± 13	53,2 ± 8,6	-.548	.584
SCH	55,5 ± 10,7	50,8 ± 8,6	-1.801	.072
TRT	56,72 ± 13,3	47,4 ± 8,4	-2.915	.003*
MAC	58,1 ± 11,2	49,9 ± 10,2	-2.582	.009*
ACK	54,2 ± 11,6	50,5 ± 8,4	-1.251	.211
PRO	55,5 ± 11	53,2 ± 11,4	-1.126	.260
A	52,3 ± 10,1	51,2 ± 9,9	-.469	.639
R	50,6 ± 11,3	48,5 ± 11,1	-1.430	.153
SC	57,3 ± 12,2	52,8 ± 12,5	-1.485	.138

Child maltreatment (CM); Control Group (CG); Hypocondrias (HS); Depression (D); Hysteria (Hy); Psychopathic Deviate (PD); Masculinity-Femminility (MF); Paranoia(PA); Psychastenia(PT); Schizophrenia(Sc); Hypomania(Ma); Social Introversion(SI); Anxiety(ANX); Obsessiveness (OBS); Depression (DEP); Health Concerns (HEA); Bizzarre Mentation (BIZ); Anger (ANG); Cynism (CYN); Low Self-Esteem (LSE); Social Discomfort (SOD); Family Problems (FAM); School problems (SCH); Negative tratment indicators (TRT); MacAndrews Alcoholism Scale (MAC); Alcohol/Drug Problem Acknowledgement(ACK); Alcohol/Drug Problem Proneness (PRO); Anxiety Scale (A); Repression Scale (R); Schizophrenia (SC); *p <0.05

Table 2. Differences in MMPI-A scales between CM and Control groups

	JOs (N=21)	**CG (N=24)**		
	Mean±sd	Mean±sd	**F**	**p-Value**
HS	52,9 ± 11,9	56,5 ± 17,3	-.321	.748
D	50,6 ± 8,7	54,5 ± 14,5	-.847	.397
Hy	48,8 ± 7,5	54,33 ± 10,0	-1.122	.262
PD	53,9 ± 11,6	56,5 ± 9,1	-.825	.409
MF	47,2 ± 7,8	52 ± 10,1	-1.560	.119
PA	56,5 ± 9,4	52,42 ± 13,6	-1.666	.096
PT	51,7 ± 12,6	52,6± 12,8	-.456	.649
MA	52,1 ± 11,2	53,7 ± 9,9	-.868	.385
SI	49,1 ± 9,5	49 ± 10,1	-.137	.891
ANX	49,8 ± 9,5	51,7 ± 12,5	-.434	.665
OBS	52,38 ± 12	51,3 ± 6,9	-.366	.714
DEP	48,8 ± 10,1	54,1 ± 11,7	-1.507	.132
HEA	53,7 ± 13,1	53,5 ± 10,1	-.619	.536
BIZ	51,2 ± 11,9	50,3 ± 13,7	-.370	.711
ANG	49,4 ± 11,2	51,9 ± 7,9	-.984	.325
CYN	43,4 ± 7,9	52,7 ± 9,1	-1.403	.161
LSE	47,1 ± 10,5	54,7 ± 12,8	-2.276	.02*
SOD	47,7 ± 6,7	49,3 ± 9,8	-.481	.631
FAM	49,7 ± 10,2	53,2 ± 8,6	-1.560	.119
SCH	55,1 ± 12,8	50,8 ± 8,6	-.984	.325
TRT	53,1 ± 14,6	47,4 ± 8,4	-1.119	.263
MAC	62,6 ± 12,3	49,9 ± 10,2	-2.885	.003*
ACK	56,3 ± 11,9	50,5 ± 8,4	-1.478	.139
PRO	55 ± 12,6	53,2 ± 11,4	-.274	.784
A	51,1 ± 11,2	51,2 ± 9,9	-.456	.648
R	49,3 ± 7,7	48,5 ± 11,1	-1.058	.290
SC	51,9 ± 13,1	52,8 ± 12,5	-.046	.964

Juvenile offenders (JOs); Control Group (CG); Hypocondrias (HS); Depression (D); Hysteria (Hy); Psychopathic Deviate (PD); Masculinity-Femminility (MF); Paranoia(PA); Psychastenia(PT); Schizophrenia(Sc); Hypomania(Ma); Social Introversion(SI); Anxiety(ANX); Obsessiveness (OBS); Depression (DEP); Health Concerns (HEA); Bizzarre Mentation (BIZ); Anger (ANG); Cynism (CYN); Low Self-Esteem (LSE); Social Discomfort (SOD); Family Problems (FAM); School problems (SCH); Negative tratment indicators (TRT); MacAndrews Alcoholism Scale (MAC); Alcohol/Drug Problem Acknowledgement(ACK); Alcohol/Drug Problem Proneness (PRO); Anxiety Scale (A); Repression Scale (R); Schizophrenia (SC); *p <0.05

Table 3. Differences in MMPI-A scales between JOs and Control groups

kely to be current cigarette users, and 2.00 times as likely to have reported recent marijuana use (Hussey et al., 2006). This is consistent with our results that showed high A-MAC scores in CM group compared with control group. Even if a direct relationship between childhood maltreatment and adolescent alcohol and/or drug abuse has not been found, early onset and misuse of alcohol and/or drugs in maltreated children might represent a strategy developed to alleviate the pain. Thus, in these situations, alcohol and/or drug abuse may provide a temporary escape from an abusive environment. Moreover, alcohol and/or drug misuse may be a form of self-destructive behavior resulting from feelings often experienced by abused children such as poor self-concept, self-blame, and feelings of worthlessness (Ireland and Widom 1994). Therefore, it is possible to argue that childhood maltreatment is a robust risk factor for adolescent binge drinking (Shin et al., 2009). However, also being a victim of maltreatment and abuse during adolescence can lead to alcohol and drug use (Thornberry et al., 2010).

Even if Forbey and colleagues did not report in their study high A-BIZ score (Forbey et al., 2000), it is possible to explain this elevation in our study through the qualitative analysis of the literature. In fact, adolescents who produce elevated scores on A-BIZ scale are characterized by the occurrence of psychotic thought processes, strange and unusual experiences and paranoid symptoms including beliefs that they are being plotted against or controlled by others, poor reality testing (Archer, 2005). Experiences of abuse are related to cognitive distortion (Briere and Elliott, 1994), illogical thinking (Toth et al., 2011) and they may create a biological or psychological vulnerability for the development of psychotic symptoms, including subclinical psychotic experiences such as low-grade delusional ideation and auditory hallucinations (Janssen et al., 2004; Read et al., 2003; Sheffield et al., 2013). These results may be explained by consider each form of maltreatment such as emotional abuse and neglect, sexual abuse and physical abuse, as a trauma (Cook et al., 2005; Margolin and Vickerman, 2011; Saywitz et al., 2000). The term *childhood trauma* has been used to capture different adverse experiences such as sexual, physical and emotional abuse and neglect (Morgan and Fisher, 2007). Even if the relationship between childhood trauma and psychotic disorders remained unclear due to a lack of methodological rigor in scientific researches (Bendall et al., 2007); Read and colleagues stated that child abuse is correlated with psychosis in general and schizophrenia symptoms in particular (Read et al., 2001). However, studies that found a relationship between these two variables considered only the long-term effect of childhood abuse and maltreatment in adulthood but not the consequences of childhood trauma on psychotic and schizophrenic symptoms in adolescence (Read et al., 2005; Schenkel et al., 2005; Rosenberg et al., 2007). More specifically, Lundberg-Love and colleagues found that incest survivors reported significantly higher scores on the Schizophrenia Scale of the MMPI than their control group (Lundberg-Love et al., 1992). Despite these limitations, our results were confirmed by Forbey and colleagues' study (2000) in which analyses revealed significant differences between sexually abused and non-sexually abused adolescent (Forbey et al., 2000).

High Social Discomfort and Negative Treatment Indicators were also found by Forbey and colleagues. In fact, authors stated that abused adolescents tend to see their future as hopeless, and often show little interest or initiative in planning for it. They feel as if no one understands them and that no one truly cares about them; therefore, they believe that they have no one to turn to for help when they have problems. Consequently, they supposed that these adolescents may not be as responsive to treatment as their non-abused peers, and may be somewhat distrustful of their therapist (Forbey et al., 2000). In fact, one factor that has been identified by clinicians as essential for the successful treatment of abused children and adolescents is the establishment of a positive therapeutic alliance. However, the experience of maltreatment, particularly in the context of a caregiving relationship, may cause a trust decrease and problems in interpersonal relationships which could make alliance formation problematic for these adolescents (Eltz et al., 1995). Adolescents who produce elevated scores on the A-SOD scale tend to be uncomfortable in social situations, to avoid social events and to find difficulties in interactions with others (Archer, 2017). Therefore, this elevation in our CM sample reflected their difficulties in relationships with others, including peers because of a generalized fear.

MMPI-A has been widely used in the evaluation of the juvenile delinquency. According to our findings, several studies carried out with the use of MMPI-A reported significant elevations on Paranoia scale. Cashel, and colleagues found that Scales 4, 9, 2, 6, and 8, had the highest average elevations in a sample of 99 juvenile offenders (Cashel et al., 1998). Morton and colleagues hypnotized and confirmed that low scores on Scale 5 and elevations on Scales 4 and 6 are the most characteristic MMPI–A clinical scale scores in this sample of juvenile delinquents (Morton et al., 2002). Espelage and colleagues' MMPI analysis revealed four distinct profiles (two for male and two for female juvenile offenders) among a sample of 141 incarcerated JOs, concluded that male and female exhibited qualitatively distinct psychiatric profiles. However, authors found that one of the two males profiles (labeled Disorganized) and one of the two females profiles (labeled Irritable-Isolated) presented the same Paranoia scale elevation (Espelage et al., 2003). Pena and colleagues found that delinquent boys scored significantly higher than the nondelinquents on the Paranoia scale and, consistent with our results, also on MAC-R and ACK supplementary scales (Pena et al., 1996). Glaser and colleagues considered 72 males juvenile offenders divided into three groups: offenders who committed crime against person, against property, or drug/alcohol offense. They found elevations on ACK for each of these three categories but also on A-sch content scale, especially for males who committed drug or alcohol offense (Glaser et al., 2002). However, elevations on ACK and MAC- R supplementary scales and on A-sch content scale were re-

ported also by other studies (Morton et al., 2002; Toyer and Weed, 1998).

The limited nature of the male sample chosen and the fact that only one psychodiagnostic test was used, and no more tests as required by correct psychodiagnosis in the forensic field in particular, do not allow particular generalizations on the research conducted. Future research with larger samples could allow wider generalizations. Another limitation of our scientific article is the presence of only male subjects, but this is due to the fact that judicial statistics indicate a large prevalence of male subjects among juvenile sex offenders.

5. Conclusion

The multidimensional perspective of personality characteristics, as measured by the MMPI–A, helps capture the differences in profiles between adolescents with a history of child maltreatment, those convicted of different type of offenses or adolescents who never had contact with the Juvenile Justice and with no history childhood maltreatment. Even if we do not have a large sample, the results of the research that we present, show that the MMPI A test is a gold standard tool to examine the personality, functioning and characteristics of different forensic populations. The ability to show differences between CM and JOs groups utilizing the MMPI-A allows treatment providers to extrapolate personality characteristics which may be present in the two groups. Future research should seek more detailed information regarding the relation between specific variables of abuse (e.g., age of onset, duration, child's age when the first abuse occurred) and psychological, behavioral, and psychosocial characteristics. The examination of the literature, together with more in-depth research, also conducted with other psychodiagnostic instruments such as the Rorschach test will reveal further aspects on the personality characteristics of the subjects examined also in relation to other aspects of a criminological profile.

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