THE MILLON ADOLESCENT CLINICAL INVENTORY (MACI) AS AN OUTCOME MEASURE FOR JUVENILE SEXUAL OFFENDERS

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THE MILLON ADOLESCENT CLINICAL INVENTORY (MACI) AS AN OUTCOME MEASURE FOR JUVENILE SEXUAL OFFENDERS

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THESIS ABSTRACT

THE MILLON ADOLESCENT CLINICAL INVENTORY (MACI) AS AN OUTCOME MEASURE FOR JUVENILE SEXUAL OFFENDERS

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Objective measures of personality and psychopathology are assessment tools frequently used to better inform treatment professionals. An increasingly popular objective measure of personality includes the Millon Adolescent Clinical Inventory (MACI) given its usefulness with a variety of clinical populations across numerous settings. Although the MACI has been used increasingly within a forensic context, no current empirical investigation has examined its utility as an outcome measure. In this study, we compared MACI mean scale scores, obtained from 306 male adolescents adjudicated for committing a sexual offense, to scores obtained following treatment. At the time of incarceration, the average age was 15.77 years (SD = 1.42 years) and subjects

were incarcerated for an average of 431.43 days (SD = 191.67 days). The results of the current study suggest that the MACI is a useful outcome measure. Significant increases between pre-treatment and post-treatment MACI testing administrations were observed for the Desirability, Dramatizing, Egotistic, Sexual Discomfort, Social Insensitivity, and Delinquent Predisposition scales. Post-treatment mean scale score decreases were measured on the Disclosure, Debasement, Introversive, Inhibited, Doleful, Oppositional, Self-Demeaning, Borderline, Identity Diffusion, Self-Devaluation, Body Disapproval, Peer Insecurity, Eating Dysfunction, Impulsive Propensity, Depressive Affect, and Suicidal Tendency scales. These differences are indicative of the positive impact of treatment as well as the negative consequences stemming from long-term incarceration with other offenders. Therefore, the Millon Adolescent Clinical Inventory is sufficient to detect clinically meaningful changes with juvenile sexual offenders. Directions for future research, and the importance of further exploring the MACI as an outcome measure, are discussed.

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INTRODUCTION

The Millon Adolescent Clinical Inventory (MACI; Millon, 1993) is widely recognized as a useful adolescent assessment tool. The MACI is particularly useful in a juvenile forensic setting thanks to its normative sample including delinquent/inpatient adolescents; its relative brevity and ease of administration; and its ability to identify and assess a breadth of distinct personality traits, clinically relevant concerns, and attitudes/beliefs of clinical importance (Salekin, Larrea, & Ziegler, 2002; Stefurak, Calhoun, & Glaser, 2004). To date, the MACI has been used in investigations studying a variety of clinical populations including juvenile sexual offenders (e.g., Oxnam & Vess, 2006; Richardson, Kelly, Graham, & Bhate, 2004), delinquent juvenile offenders (e.g., Stefurak & Calhoun, 2007; Taylor, Kemper, & Loney, 2006), as well as those who abuse substances (e.g., Lucenko, Malow, & Sanchz-Martinez, 2003; Malow, Devieux, & Jennings, 2001) or meet criteria for an eating disorder (e.g., Madison & Sarita, 2003; Barry & Grilo, 2002).

Although the growing interest in and use of the MACI is well documented, no investigation has yet examined the utility of the MACI as a measure of treatment outcome. The deficit may be a consequence of the disinclination to use standardized assessment measures as indicators of treatment outcome. Some researchers consider standardized assessment measures, with their strong trait loading, to be insensitive to change, thus, these researchers suggest other measures such as direct, clinical interviews

produce the most sensitive and important information regarding clients' outcomes (Choca, Shanley, and VanDenburg, 1992). Other researchers suggest an alternative perspective as they contend that objective personality instruments are well-suited to assess treatment response as a significant change in scale elevations suggest therapeutic change. Nonetheless, the use of standardized assessment measures as an outcome indicator is a frequent practice and has much to recommend. For example, ease of administration, standardization across studies, norm-based scales providing information relative to end-state functioning in a normal range are all significant strengths for using standardized assessment tools. A survey of the literature revealed hundreds of studies in which objective personality measures were used to empirically gauge treatment responsiveness. Notable investigations include Funari, Piekarski, and Sherwood's (1991) study which measured 12 scale decreases and 8 scale increases for 36 Vietnam veterans on the Millon Clinical Multiaxial Inventory (MCMI; Millon 1991). Also, Piersma and Boes (1997) assessed 104 inpatient psychiatric adults in a pre/post-treatment design in which a significant reduction of 5 scales and an increase on 3 scales was measured using the MCMI-III. According to these researchers, the follow-up administration suggested a more "balanced" profile compared to that obtained at admission.

Additional objective measures of personality, beyond those developed by Millon, have also been used to measure response to treatment interventions. In fact, hundreds of studies have been published using a variation of the MMPI to measure treatment response with individuals diagnosed with a variety of disorders including an internalizing disorder, substance use disorder, or somatoform disorder. In these investigations, participants were frequently re-assessed following treatment in order to determine the utility of the

intervention based on the degree of change measured across testing administrations. Regarding offenders, Forbey and Ben-Porath (2002) stated that the MMPI-2 is a useful instrument as it is capable of measuring treatment progress and outcome. They further suggest that treatment providers consider administering the MMPI-2 frequently as it is suitable to empirically assess individual progress towards identified treatment goals. Although there is an extensive history using standardized assessment measures with adults to gauge treatment outcome, there are relatively fewer investigations into measuring treatment outcomes with adolescents.

A review of the literature revealed two studies using standardized personality measures as outcome measures in adolescents. First, using the MMPI and Jesness Inventory, Roberts, Schmitz, Pinto, and Cain (1990) observed significant changes across pre-treatment and post-treatment administrations for 50 adolescent psychiatric inpatients. Of the MMPI and Jesness scales administered, 9 of 13 and 7 of 11 significant scale differences were found, respectively, at post-test administration. Of note, the average time between administrations was only 58.5 days (range = 18 to 250 days). In a second example study, the Millon Adolescent Personality Inventory (MAPI; Millon, Green, & Meagher, 1982), a predecessor to the MACI, was used as a measure of treatment outcome for a sample of inpatient adolescents by Piersma, Pantle, Smith, Boes, and Kubiak (1993). In this study, Piersma et al. examined mean scale score differences for 157 hospitalized adolescents assessed in a pre-treatment/post-treatment configuration. Researchers in their investigation created two comparison groups based on an individual's primary intake diagnosis resulting in an internalizing group (N= 94) and an externalizing group (N=63). Results indicated significant decreases on the following

scales: Inhibited, Sensitive, Self-Concept, Personal Esteem, Sexual Acceptance, Peer Insecurity, Social Tolerance, Family Rapport, Academic Confidence, Impulse Control, Social Conformity, Scholastic Achievement, and Attendance Consistency. Following treatment, significant increases were measured on the Sociable, Confident, and Respectful scales. The externalizing group members reported changes in the same five Personality Style scales and four Behavioral Correlates scales while significant changes were observed on three of the eight Expressed Concerns scales (Self-Concept, Personal Esteem, and Family Rapport). The average length of stay for the externalizing group was 133.21days while the internalizing group average length of stay was and 137.78 days.

The Present Study

This study is an initial effort to demonstrate the validity of using standard assessment measures to monitor treatment outcomes with adolescents. We believe that the MACI administered before and after treatment would reflect the positive impact of treatment and negative consequences of incarceration with other offenders. Furthermore, a number of mean scale scores were hypothesized to remain stable between MACI administrations, which we believe represents the stability of personality traits and characterological qualities generally not targeted by treatment or affected by incarceration.

METHOD

Setting

The present investigation was conducted at the Mt. Meigs juvenile detention complex, a residential facility operated by the State of Alabama's Department of Youth Services. The Mt. Meigs complex, founded in 1906, consists of 13 dormitories and holds 312 adolescents at capacity. To be eligible for placement at Mt. Meigs, adolescents have either pled guilty to the referral charge(s), a lesser charge based upon a negotiated plea with the originating county's court system, or was found guilty by a juvenile court judge. In addition, the Mt. Meigs campus has been identified by Alabama Department of Youth Services as the treatment site for all juveniles adjudicated for a sexual offense throughout the state of Alabama. Through a contract with the state of Alabama, the Accountability Based Juvenile Sexual Offender Assessment and Treatment Program (ABSOP) was developed by a consortium consisting of the Auburn University Department of Psychology and the University of Alabama School of Social Work, with the collaboration of the Department of Youth Services. Members of the ABSOP team are responsible for assessing offenders upon arrival and serve as individual and group treatment providers for incarcerated individuals. Team members also assess offenders and administer the MACI to them at the conclusion of their treatment.

Participants

Participants consisted of 306 incarcerated, male adolescents adjudicated for committing a sexual offense in the state of Alabama. As a condition of their sentence, these individuals were mandated by their respective county court system to participate in an empirically-grounded sexual offender treatment and rehabilitation program. A treatment requirement established by ABSOP has each individual convicted of a sexual offense complete an extensive multi-modal assessment protocol, in which the MACI is a component, prior to beginning the treatment program. Because all juvenile sexual offenders from all Alabama counties are referred to DYS, ABSOP is essentially the exclusive provider of treatment services for adolescents convicted of a sexual offense charge. Participants' consent to use data gained from their clinical assessment process was obtained by giving offenders the option to share or not share their information for research purposes. During the course of the study, five individuals (1.7%) withheld consent and therefore opted not to participate. The average age at initial assessment was 15.77 years (*SD*= 1.42 years; Range: 11.00 years to 18.67 years), and their mean grade level was 8.62 (*SD* = 1.91; Range = 5^{th} grade thru graduated high school/obtained high school equivalency). Just over half of the sample (*n* = 157) was Caucasian (56.5%), 40.6% (*n* = 113) were African-American, 2.5% (*n* = 7) identified themselves as bi-racial, and 0.4% (*n* = 1) identified themselves as Hispanic.

Instrument

The Millon Adolescent Clinical Inventory (MACI). The MACI is a 160-item self-report inventory designed specifically for adolescents in clinical settings. The MACI assesses a range of personality styles, psychosocial concerns, and clinical symptoms via a

true-false question format (Millon, 1993). The 12 personality pattern scales reflect symptoms of Axis II personality disorders classified in the American Psychiatric Association Diagnostic and Statistical Manual (APA, 1994). Indications of psychopathology are also obtained via the 8 expressed concerns and 9 clinical syndromes scales. MACI scales are rated moderate-to-strong in both internal consistency (.69-.90) and test-retest reliability (.63-.92).

MACI raw scale scores are converted to base rate scores ranging from 0 to 115; scores greater than 75 indicate a characteristic is clinically present while scores exceeding 85 indicate clinical prominence for a measured characteristic. Base rate scores may be adjusted by scores based on responses to items comprising the validity indexes: Desirability (denying or minimizing emotional difficulties), Debasement (complaining excessively, exaggerating, or fabricating emotional problems), and Disclosure (willingness to self-disclose information). Base rate scores were used for analysis in the current investigation.

Procedure

Each individual was provided with a detailed consent form as well as an opportunity to converse about specifics regarding their possible participation in the ongoing body of research conducted at the Mt. Meigs campus. Potential participants were instructed that consent was strictly voluntary and that no negative consequence would occur if they did not participate in the research component of the clinical interview and assessment battery. Once consent was obtained, the procedures used to maintain confidentially of all information collected for research were explained to participants and all participants were encouraged to respond openly and honestly to all questions. A combination of advanced

clinical psychology graduate student clinicians and undergraduate psychology students orally administered the MACI to participants as part of the routine intake assessment conducted upon offenders' arrival at the Mt. Meigs correctional facility. Participants completed the MACI approximately 10 days following admission using standard pencil-and-paper administration with assessment team members reading the statements aloud to all participants. Responses were computer scored and entered into a computer database for the purpose of analysis. Post-treatment administration of the MACI occurred prior to release with the mean retest interval of 431.43 days following admission (*SD* = 191.67 days; range 36 to 1745 days).

RESULTS

Modifying Indices

Results of a multivariate analysis of variance (MANOVA) examining differences between MACI validity mean subscale scores between administrations was significant; Wilks' $\Lambda = .871$; $F(3, 608) = 29.97$, $p < .001$. Table 1 contains mean scale scores, standard deviations, test-retest correlations and univariate analysis results for the modifying indices. Based on observed differences in the Disclosure, Desirability, and Debasement scales following treatment, individuals were less open, less honest, and less self-revealing ($F(1, 610) = 14.57$, $p < .001$), attempted to appear more socially attractive, morally virtuous, and emotionally well-composed ($F(1, 610) = 22.61$, $p < .001$), and were less likely to complain excessively, exaggerate symptoms, or fabricate emotional problems ($F(1, 610) = 62.79$, $p < .001$).

Personality Patterns

Results of the MANOVA examining differences between personality pattern scales between administrations was significant; Wilks' $\Lambda = .859$; $F(12, 599) = 8.20$, $p < .001$. Significant decreases in personality pattern mean scores were measured on the post-treatment administration. Participants were less likely to keep to themselves and appeared less quiet and more emotional (Introversion; $F(1, 610) = 36.38$, $p < .001$), reported feeling less shy and less discomfort around others (Inhibited; $F(1, 610) = 8.44$, $p < .01$), reported fewer feelings of melancholia and hopelessness (Doleful; $F(1, 610) =$

34.90, $p < .001$), reported a more stable self-image, less irritability, and fewer passive-aggressive or resistant behaviors (Oppositional; $F(1, 610) = 21.07$, $p < .001$), reported greater self-esteem, fewer feelings of inadequacy, and fewer acts of self-criticism (Self-Demeaning; $F(1, 610) = 14.23$, $p < .001$), and reported a reduced sense of emotional turmoil (Borderline Tendency; $F(1, 610) = 35.09$, $p < .001$. Next, an increase on the Conforming scale post treatment indicates individuals reported a greater level of seriousness, respectfulness, and increase in attempts to make the "right" choice in ambiguous situations; $F(1, 610) = 41.53$, $p < .001$. Also, subjects were measured to report an increase in traits associated with narcissism and a reduction of empathy based upon the significant decrease in the Egotistic scale following treatment; $F(1, 610) = 36.24$, $p<.001$. Furthermore, based on the post-treatment increase on the Dramatizing scale, individuals reported a greater degree of being emotionally expressive, an increase in intense yet brief relationships with others, and an increase of feelings of boredom related to routine patterns and long-standing relationships; $F(1, 610) = 35.60$, $p < .001$. Table 2 contains Personality Pattern testing results.

Expressed Concerns

Results of the MANOVA examining differences on Expressed Concern scales between administrations was significant; Wilks' $\Lambda = .892$; $F(8, 603) = 9.11$, $p < .001$. Following treatment, participants reported fewer concerns regarding self-identity or concerns related to identified future goals (Identify Diffusion; $F(1, 610) = 24.00$, $p < .001$), fewer concerns related to self-esteem, fewer feelings of inadequacy, and less self-criticism (Self-Devaluation; $F(1, 610) = 29.87$, $p < .001$), fewer concerns related to physical appearance and development (Body Disapproval scale; $F(1, 610) = 17.43$, $p <$

.001), and a reduced degree of sadness over social rejection and fewer feelings of isolation (Peer Insecurity scale; $F(1, 610) = 6.92$, $p = .01$). Based on measured post-treatment increases on the Sexual Discomfort and Social Insensitivity scales, participants reported greater feelings of discomfort related to their sexual impulses ($F(1, 610) = 6.10$, $p = .01$) and a greater indifference towards others ($F(1, 610) = 24.43$, $p < .001$). Results of the Expressed Concerns analyses are found in Table 3.

Clinical Syndromes

Results of the MANOVA examining differences on Clinical Syndrome scales between administrations were significant; Wilks' $\Lambda = .889$; $F(7, 604) = 10.78$, $p < .001$. Following treatment, participants reported a reduction in behavioral and cognitive aspects of eating disorders (Eating Dysfunctions; $F(1, 610) = 28.19$, $p < .001$), a reduced likelihood to act out feelings with minimal provocation (Impulsive Propensity; $F(1. 610) = 7.06$, $p < .01$), an increased level of activity, increased effectiveness in tasks, and a decreased tendency to feel guilt or express feelings of despair regarding future events (Depressive Affect $F(1. 610) = 60.64$, $p < .001$), and a reduction of thoughts, ideation, or plans related to suicide (Suicidal Tendency $F(1, 610) = 21.92$, $p < .001$). Based on an increase on the Delinquent Predisposition scale following treatment, participants were more likely to violate others' rights; $F(1, 610) = 21.92$, $p < .001$.

DISCUSSION

This study compared juvenile offenders' pre-treatment and post-treatment responses on the MACI. Offenders, as a result of their adjudication for a sexual offense, were incarcerated in a secure facility for juvenile offenders. Differences were measured on 23 MACI scales; of those, differences were measured on all Modifying Indices, 9 of the Personality Pattern scales, 6 Expressed Concern scales, and 5 Clinical Syndrome scales.

At post-test, juvenile sex offenders who have been in treatment on average of 14 months present themselves as more socially assumed and less likely to complain or fabricate emotional problems. In addition, they were less open regarding self-disclosures and, thus, slightly more guarded in their approach to the psychological inventory. In personality functioning, these boys were considerably less introverted and inhibited, much more expressive and open in their approach to others, and yet, at the same time, more conforming, less oppositional, and far less self-deprecating. The picture is that these boys are becoming far less, to use an old-fashion word, neurotically inhibited, more at ease socially, and comfortable with being more compliant with social norms. There is a marked shift toward what would be seen as a healthier internalization style and with a corresponding decrease in the symptoms of internalization. Likewise, in expressed concerns, this more solid sense of their social functioning is complimented by a stronger sense of identity, less inclination to self-devalue, and far less disapproval of their bodies. The picture that emerges is of a child whose psychological identify is becoming like a

better fitting set of clothes and as a consequence, they are just more comfortable with who they are and their recent development. These changes are consistent with the expressed intent and therapeutic practices of treatment staff. Without exception, the therapists who work with these boys devote considerable time and effort toward ameliorating the psychological burdens associated with the levels of psychological problems found in these boys.

Along with the changes suggestive of positive treatment gains, post-treatment results suggest that unintended treatment effects occurred as well. For example, significant increases on the Delinquent Predisposition, Social Insensitivity, and Egotistic scale suggest incarceration with delinquent peers may result in iatrogenic effects. These iatrogenic effects, most likely related to group-based treatment and incarceration, are consistent with findings found in both adult and juvenile literature. For example, adults reported an increase of paranoia, greater manipulativeness, and a reduction in concerns related to how they are perceived by others following incarceration (Walker, 1983). Furthermore, these results are consistent with iatrogenic effects measured with delinquent adolescents in community-based group therapy. Current results support observations by Dishion et al. (1999) and McCord (1992) who reported that delinquent peers have an ability to shape and maintain deviant behaviors for delinquent youth as they measured an increase in antisocial attitudes and behaviors. Therefore, it may be likely that the measured increase in antisocial beliefs among participants post-treatment, in the current investigation, may be directly related to the emphasis of group therapy with other delinquent peers.

A portion of these findings from the current investigation are in-line with previous research using objective measures of personality as an outcome measure with adolescents. For example, Roberts et al. (1990) measured a significant decrease, between MMPI administrations, on the Depression scale indicating that juvenile offenders reported fewer feelings of being unhappy, depressed, or pessimistic. Similarly, this current investigation measured a significant decrease in the Depressive Affect scale which suggests a meaningful reduction in symptoms related to a depressive disorder. Although no conclusive statements regarding treatment efficacy can be made without a control group, the assessment and treatment of depressive symptoms is a universal pre-treatment goal for ABSOP participants given the elevated prevalence rate of symptoms within this population. Therefore, staff members are hypersensitive to these symptoms and attempt to assess, monitor, and treat symptoms across interventions. This post-treatment decline on MACI scales assessing symptoms of depression was expected, to some degree, given the frequent inclusion of interventions on individual service plans. Again, the degree of change directly related to participating in treatment is unknown without an adequate control condition.

Also, similar findings across studies were measured regarding validity indices and body functioning/image. Additionally, subjects in the current investigation and Roberts et al. (1990) responded similarly on validity indices following treatment. In both studies, subjects responded in a less forthcoming manner suggesting a greater level of defensiveness and reduction in self-disclosure. Furthermore, subjects across both studies responded in a manner indicative of a reduced attempt to exaggerate psychopathology. Within the current investigation, these findings are not surprising as participants are

cognizant that any response of concern may alter their upcoming post-treatment evaluation or risk-assessment and subsequently delay their release. Furthermore, this current investigation and the Roberts et al. (1990) study measured a significant post-treatment reduction in scales that assess negative body perceptions and concerns as indicated by a significant reduction in the Body Disapproval scale and Hypocondriasis scale, respectively.

A unique finding of this investigation is that we measured what we believe to be iatrogenic effects related to incarceration, based on a significant increase on the Delinquent Predisposition, Egostistic, and Social Insensitivity scales, whereas other studies (e.g., Roberts et. al (1990); Piersma et al. (1991) failed to measure such effects. Piersma et al. (1991) classified inpatients into a Disruptive Behavior group based on a primary diagnosis of either conduct disorder, oppositional defiant disorder, or attention deficit disorder. Following treatment, these individuals presented as more cooperative, responsible, outgoing, self-assured, and self-confident compared to their admission ratings based on significant differences on the MAPI Sociable, Confident, and Respectful scales. Furthermore, Roberts et al. (1990), who also assessed a group of juvenile delinquents in which sex offenders comprised a significant portion of the sample, reported a significant reduction in the Psychopathic Deviate scale (Pd) following treatment. Based on Pd scale content, this indicates that individuals reported a greater respect to authority figures, a reduced likelihood of engaging in delinquent activities, and a greater level of concern regarding others' rights and property. The disparity of these results regarding post-treatment delinquency may be a result of several key differences between these investigations. First, participants in the Roberts et al. (1990) investigation

were described as psychiatric inpatients who were hospitalized for approximately 50 days, on average. Participants from the current investigation reported significant symptoms of psychopathology; however, not to the level requiring an inpatient placement. The reported level of psychopathology and subsequent placement differences may account for a portion of these measured differences regarding post-treatment delinquent attitudes. Furthermore, boys at Mt. Meigs were exposed to delinquent peers considerably longer to that of previous investigations as the average length of incarceration was approximately 431 days (*SD* = 191.67 days). Within this correctional setting, the social culture among students is very receptive to those individuals who display delinquent attitudes and behaviors. In order to "fit-in" with the prevailing culture, students may be engage in delinquent behaviors which is likely to be looked upon favorably by peers (e.g., elevated in peer status, increase in peer respect/admiration). We believe these behaviors are reinforced by peers in order to earn social acceptance among various peer-groups. This significant increase in the average length of stay, compared to previous investigations, allows for more opportunities to reinforce delinquent behaviors and solidify antisocial attitudes, therefore, the significant post-treatment gains in pro-delinquent attitudes may reflect effects of an extended incarceration with juvenile delinquents.

An important limitation of this investigation should be noted. As all juvenile offenders were mandated to participate in both group and individual therapy as a component of treatment, no wait-list or control group population was available for comparison. Therefore, no statements regarding the efficacy of treatment are suggested as no control group was available. A conservative interpretation would be to view the

utility of the results as simple MACI test-retest data over an extended time period. However, it is believed that these results provide additional outcome data based on several observations. First, all scales assessing static variables remained consistent at post-test. Specifically, participants reported similar responses regarding physical and sexual childhood abuse across both testing administrations supporting an initial hypothesis. Furthermore, reports of perceived family difficulties remained constant across administrations which is a likely outcome as participants had limited to no contact with family members during incarceration. The item content of these scales suggested that responses, if valid, should remain fairly consistent given that acts of prior abuse and perceived family difficulties were hypothesized to remain stable throughout incarceration.

Overall, the MACI administrations revealed significant changes on mean scale scores across testing administrations. Based on the measured differences, treatment providers are better informed to alter treatment practices, both at the individual and group level. For example, the MACI provides objective evidence in which treatment providers may reference in order to alter treatment practices if individuals are failing to report gains based on administration comparisons. ABSOP treatment staff translated these results into treatment practices both at the group and individual level. At the group level, juvenile sexual offenders reported greater and more frequent antisocial attitudes, as measured by the Delinquent Predisposition scale. Given this finding, treatment providers at Mt. Meigs have established additional screening criteria in an attempt to identify individuals with frequent delinquent attitudes and beliefs and segregate them from individuals who have been identified as most likely to be negatively influenced by these extremely delinquent

peers. At the individual level, the MACI as an outcome measure has been used to inform treatment staff regarding symptoms of psychopathology in order to better inform risk-assessment perceptions as well as outpatient treatment suggestions. Here, the initial baseline level of functioning (pre-treatment assessment) was compared to the post-treatment administration in order to measure change across MACI variables.

Clearly, as no adequate "no-treatment" control group was available for this investigation, additional studies are needed to examine the MACI as a measure of treatment outcome with juvenile sexual offenders. In order to make statements regarding treatment efficacy, an adequate comparison control group is needed as no conclusive statements regarding current treatment interventions can be made. Potentially, juveniles incarcerated for non-sexual crimes may be a target control population as their incarceration involves far less individual and group psychotherapy. Once an adequate control group is identified, future research monitoring treatment gains over time and across settings would be warranted. Furthermore, additional post-release MACI administrations at regular intervals may continue to inform treatment providers with data regarding current progress.

Summary

This study is an initial effort to demonstrate the validity of using standard assessment measures to monitor treatment outcomes. MACI administrations before and after treatment of 306 juveniles incarcerated for sexual offense revealed changes in their mean scale scores which we believe reflects the positive impact of treatment and negative consequences of incarceration with other offenders. Furthermore, a number of mean scale scores also remained stable between MACI administrations, which we believe

represents the stability of personality traits generally not targeted by treatment or affected by incarceration. Although this study lacks a control group against which statistical comparisons can be made, this study offers evidence that the MACI can detect changes in clinical traits over time, and therefore suggests the MACI may be a useful measure of treatment outcomes.

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APPENDIX

Table 1. A Comparison of Pre-Treatment and Post-Treatment MACI Modifying Indices

	Pre-Treatment		Post-Treatment					
MACI Modifying Indices	**M**	**SD**	**M**	**SD**	**Δ**	***p***	**η^2**	**95% Δ C.I.**
Disclosure	51.21	22.60	44.77	19.04	-6.45	.001**	0.02	3.13, 9.77
Desirability	66.20	16.66	72.01	13.86	5.89	.001**	0.04	8.33, 3.46
Debasement	57.64	18.53	47.23	13.61	-10.41	.001**	0.09	7.83, 13.0

Note. *p< .05, **p< .001

Table 2. A Comparison of Pre-Treatment and Post-Treatment MACI Personality Patterns

	Pre-Treatment		Post-Treatment						
Personality Patterns	**M**	**SD**	**M**	**SD**	**Δ**	***p***	**η^2**	**95% Δ C.I.**	
Introversive	54.58	19.62	45.63	17.01	-8.95	.01**	0.06	-11.87,	-6.04
Inhibited	53.56	20.6	48.75	20.35	-4.81	.01*	0.01	-8.06,	-1.56
Doleful	52.08	23.79	41.24	21.55	-10.84	.01**	0.05	-14.44,	-7.24
Submissive	61.64	14.80	62.27	13.95	0.63	.59		-1.65,	2.91
Dramatizing	54.54	18.15	63.08	17.25	8.54	.01**	0.06	5.73,	11.35
Egotistic	51.50	16.39	59.56	14.24	8.06	.01**	0.07	5.62,	10.50
Unruly	57.21	19.37	58.37	16.52	1.16	.43		-1.70,	4.02
Forceful	32.72	22.24	30.56	20.73	-2.16	.21		-5.58,	1.25
Conforming	54.55	16.70	62.97	15.60	8.42	.01**	0.06	5.85,	10.98
Oppositional	56.94	18.04	50.23	18.11	-6.71	.01**	0.03	-9.58,	-3.84
Self-Demeaning	43.21	21.63	36.90	19.71	-6.31	.01**	0.02	-9.60,	-3.03
Borderline Tendency	38.03	21.86	28.14	19.34	-9.88	.01**	0.05	-13.16,	-6.61

Note. *p< .05, **p< .001

Table 3. A Comparison of Pre-Treatment and Post-Treatment MACI Expressed Concerns

	Pre- Treatment		Post-Treatment					
Expressed Concerns	**M**	**SD**	**M**	**SD**	**Δ**	***p***	**η^2**	**95% Δ C.I.**
Identify Diffusion	46.35	24.20	38.31	15.44	-8.04	.01**	0.04	-11.26, -4.81
Self-Devaluation	49.59	27.35	38.59	22.21	-11.01	.01**	0.05	-14.96, -7.05
Body Disapproval	28.98	32.77	20.19	16.83	-8.79	.01**	0.03	-12.93, -4.66
Sexual Discomfort	56.89	17.10	60.35	17.51	3.45	.01*	0.01	0.71, 6.20
Peer Insecurity	55.74	24.33	50.95	20.61	-4.79	.01*	0.01	-8.37, -1.22
Social Insensitivity	56.93	15.93	63.36	16.21	6.42	.01**	0.04	3.87, 8.97
Family Discord	59.60	19.64	60.85	18.92	-1.25	.42		-1.81, 4.31
Childhood Abuse	43.21	27.13	43.05	27.56	-0.16	.94		-4.50, 4.18

Note. *p< .05, **p< .001

Table 4. A Comparison of Pre-Treatment and Post-Treatment MACI Clinical Syndromes

	Pre-Treatment		Post-Treatment					
Clinical Syndromes	**M**	**SD**	**M**	**SD**	**Δ**	***p***	**η^2**	**95% Δ C.I.**
Eating Dysfunctions	22.25	18.76	15.37	12.71	-6.88	.01**	.04	-9.42, -4.34
Substance-Abuse Proneness	45.11	29.44	42.29	27.35	-2.82	.22		-7.33, 1.70
Delinquent Predisposition	60.63	18.23	67.00	15.30	6.37	.01**	.03	3.70, 9.04
Impulsive Propensity	53.39	23.76	48.59	20.87	-4.80	.01*	.01	-8.35, -1.25
Anxious Feelings	66.42	20.73	63.53	17.27	-2.89	.06		-5.92, 0.14
Depressive Affect	62.78	26.61	46.51	25.05	-16.27	.01**	.09	-20.38, -12.17
Suicidal Tendency	32.32	22.98	24.21	16.47	-8.11	.001**	.04	-11.29, -4.94

Note. *p< .05, **p< .001

Figure 1. Pre-Treatment and Post-Treatment MACI Modifying Indices

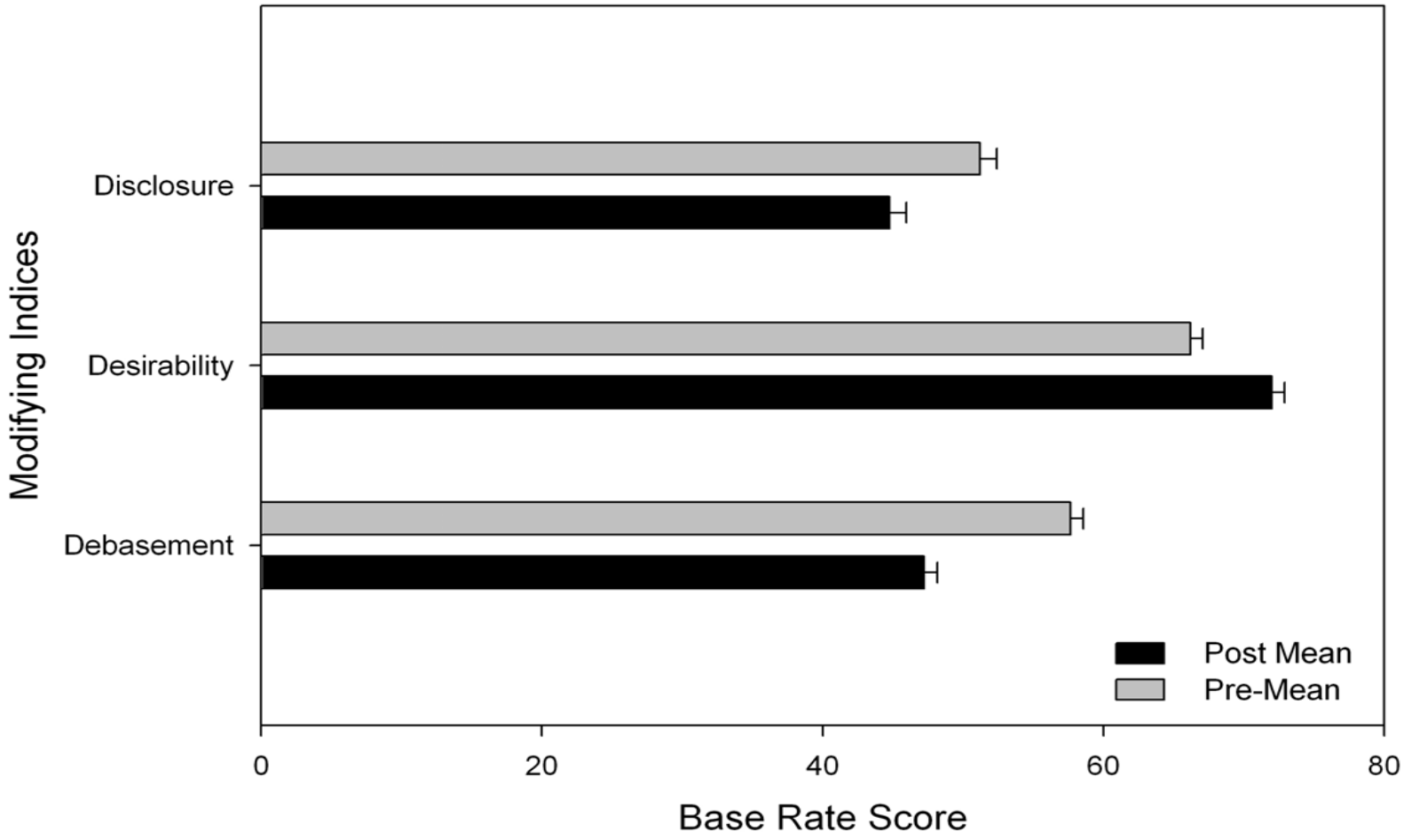

Figure 2. Pre-Treatment and Post-Treatment MACI Personality Patterns

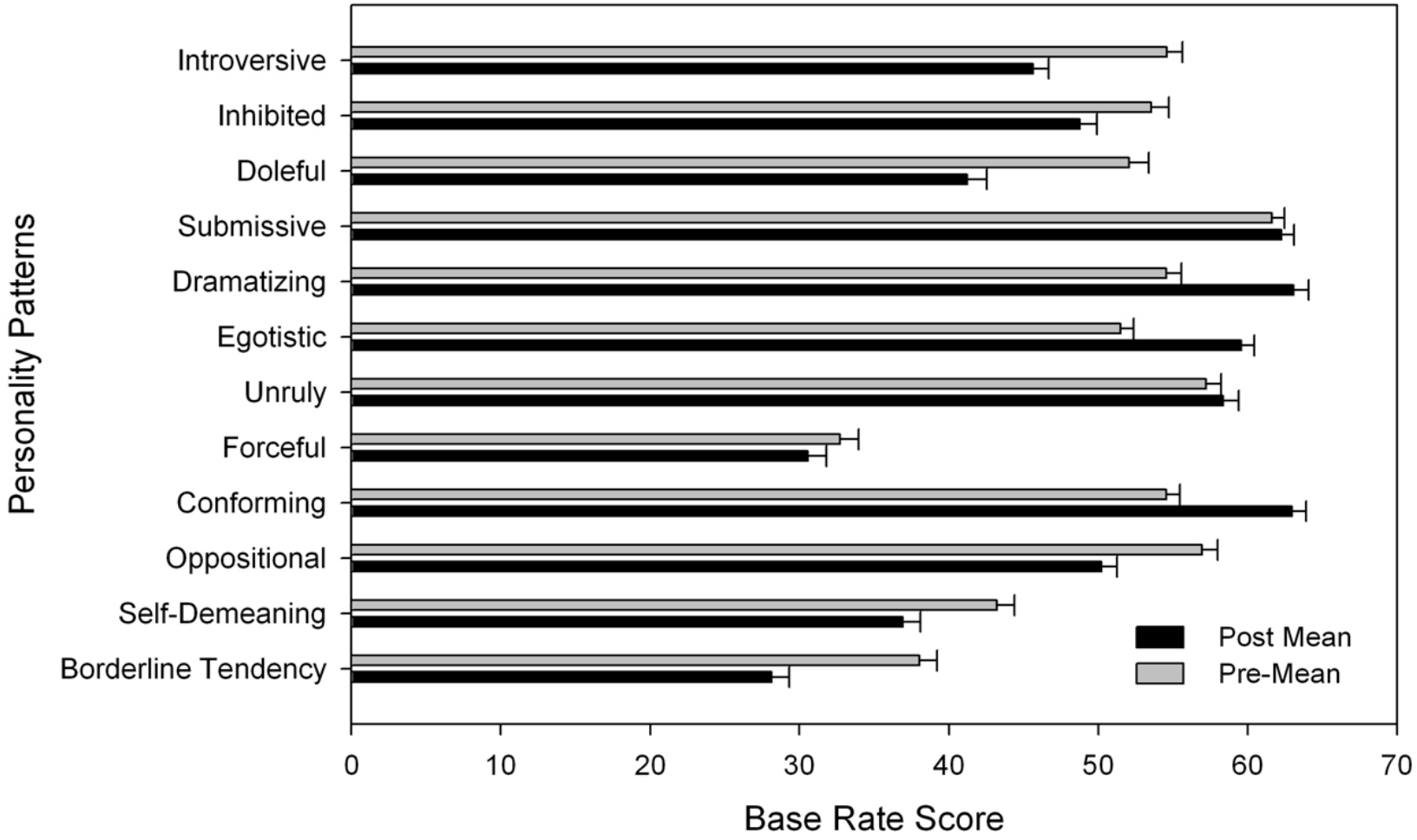

Figure 3. Pre-Treatment and Post-Treatment MACI Expressed Concerns

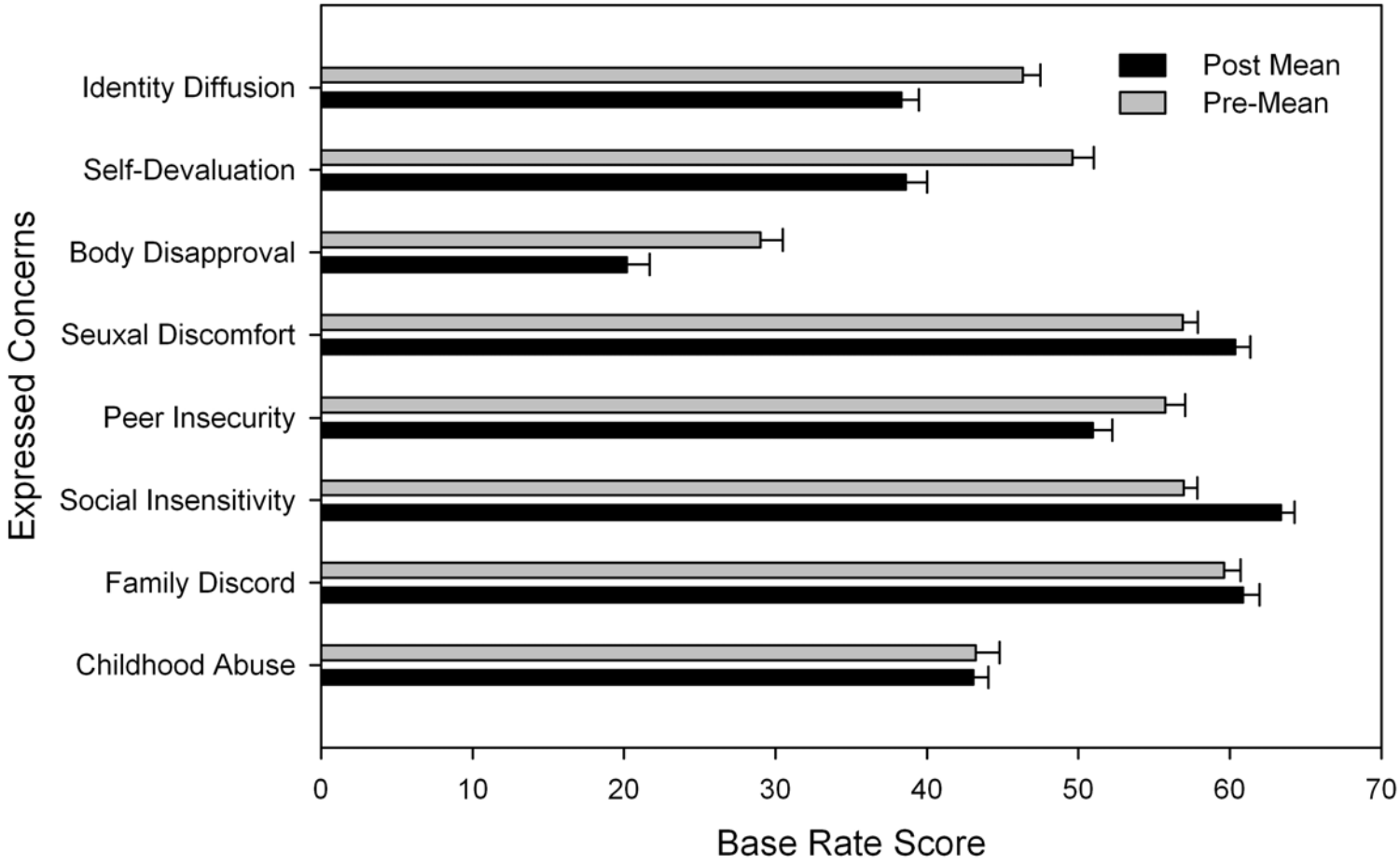

Figure 4. Pre-Treatment and Post-Treatment Clinical Syndromes