



Evidence-based interventions for young people at risk of serious violence

6th Bergen International Conference on Forensic Mental Health
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MJTC Structure



- Unusual Correctional / Psychiatric hybrid structure.
- Operated under the Department of Corrections contract as a maximum-security facility
- Housed and operated by the state psychiatric hospital
- All staff are employed by the hospital
- No security staff on the units.

MJTC staffing



- No security staff on the units
- One front line staff to every 3 – 4 kids
- One Registered Nurse per shift
- One Shift Supervisor per shift
- One psychologist, one psychiatrist, one social worker for every 10 youth
- One unit supervisor (Registered Nurse)
- Additional staff: Speech Language Therapist, music therapist, Recreational Therapists, Restorative Justice Counselors, Special Education teachers, Internist (M.D.), Art Therapist.

MJTC Population



- Ages: 12 to 19, average age is approximately 15 years old.
- Race: 52% African American, 38% White, 7% Hispanic, 2% Asian.
- Average length of stay is 9 months, but with a lot of variation.
- Boys were selected from the existing Juvenile Corrections Institutions with no pre-screening from MJTC staff.
- The sending institution selection criteria “We just pick our worst kids and send them to you”.

MJTC Population: Characteristics



- 71% have received prior mental health treatment in the community
- 91% have been diagnosed with a mental illness in addition to Conduct Disorder
- Average at first arrest: 11.3 years old
- 89% have been charged with a violent offense against a person
- Average number of crimes v. persons: 4.6 charges
- About half have hospitalized or killed a victim.



Adverse Childhood Experiences

- Adverse experiences include:
 - Physical, sexual and emotional abuse (usually by the caregiver).
 - Physical and emotional neglect
- Community / living stressors
 - Exposure to traumatic events (i.e., death of a loved one, divorce, community violence)
 - Living with a drug dependent or mentally ill parent
 - Having a parent imprisoned
 - Living in a high crime neighborhood

MJTC YOUTH: TRAUMA BACKGROUND



Types of Adverse Childhood Experiences on MJTC (N = 104)

Emotional	Physical	Sexual	Neglect	Observed violence	Lost close person
63.5%	55.8%	37.5%	69.2%	78.9%	63.5%

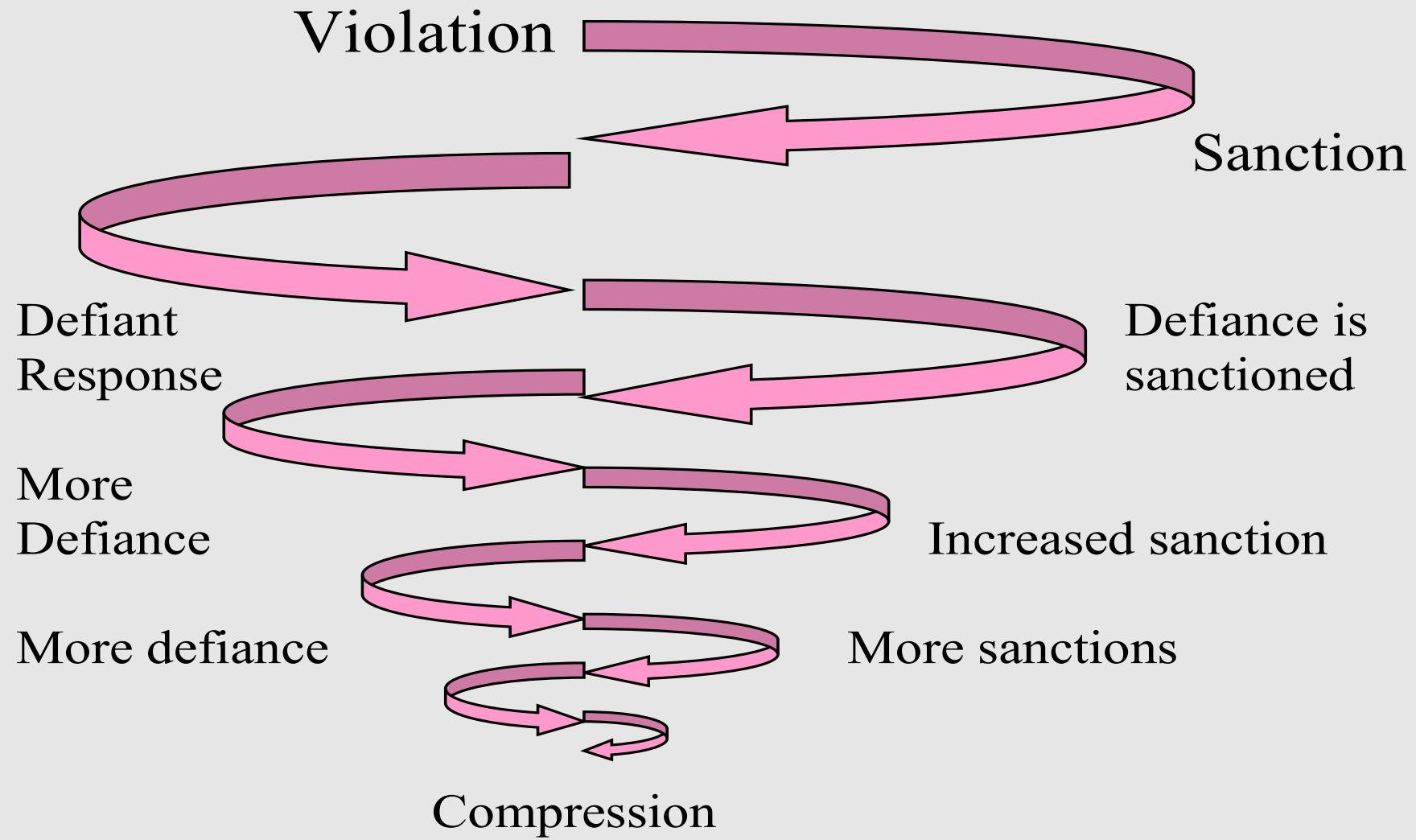
- **90.4%** have experienced 4 or more types of ACE's
- 52.9% have experienced 7 or more types of ACE's

Compression cycles



- Kids that come to MJTC have typically been subject to increasing restrictions.
- As their behavior gets worse, they are less and less connected to conventional values and activities.
- As their behavior gets worse, authority figures spend more and more of their interactions with the youth trying to contain the behavior.
- Once in detention, their misconduct becomes their defining feature.
- The range of their interactions with teachers and other adults gets compressed to a focus on their misbehavior.
- They become more and more embedded with antisocial peers, and less and less connected to conventional goals and values.

Defiant compression



Tribe of One



- With each iteration the youth is further alienated from convention.
- Eventually, the youth adopts a schema in which the world is the out-group, they are the only person in their in-group
- A “Tribe of One”.
- To erode this, we use frequent personal contacts, a focus on behavior vs. character, and incentive rich environment.

Today – Tomorrow Program

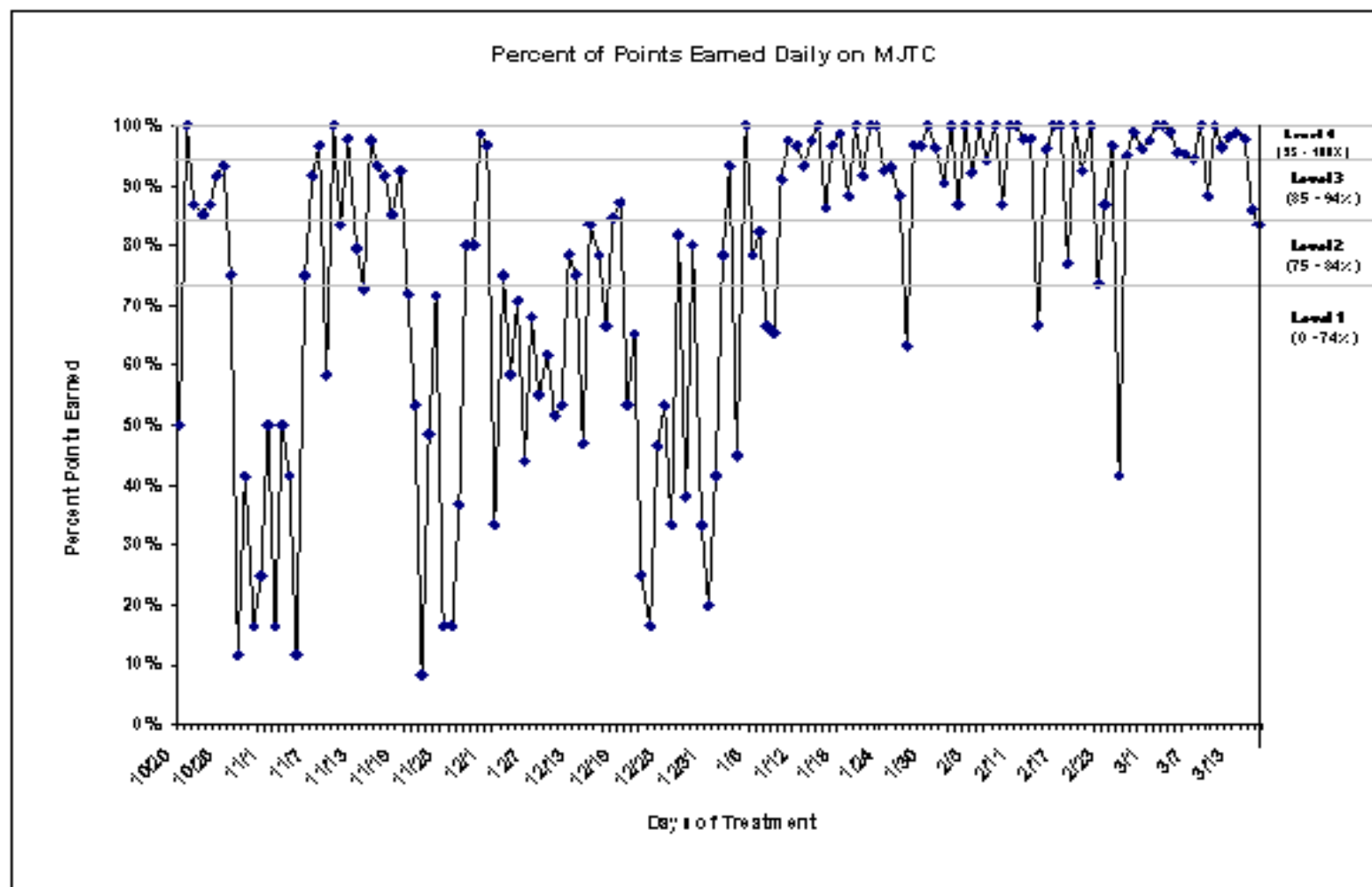


- Superficially, this is a simple point/privilege program
- The youth are rated on up to 10 scales per day by front line staff
- Their privilege tomorrow is based on the percent of points earned today
- The youth can go from privilege level 1 to 4 in one day.
- With multiple high privilege days, the youth gets “Club” level privileges that last the following week or month.

Today - Tomorrow



- Serves as a way of controlling the interpersonal space between the staff and youth.
- Fosters engagement from the youth – Control Theory concept of Involvement.
- Keeps the focus on the youth's behavior
- Documents successes and progress.
- Provided data for clinical decisions.



Each AM-PM shift, data is taken using 0-10 point behavior rating scales assessing interactions with peers, interactions with adults, and the ability to follow rules and limits. In addition, data is taken using 0-6 point behavior rating scales assessing behavior and participation in each school class and treatment group. The ratings are combined to calculate a total percent for the day.

Outcomes



- About 2/3rds of admissions stayed for a med adjustment or evaluation and went back.
- We compared those kids to kids that spend most of their Type 1 time at MJTC.
- The initial study followed 141 consecutively released kids for 2 years.
- The results showed the treatment group had $\frac{1}{2}$ the violent crime rate of the assessment only group.
- We didn't believe it. Sent the data to several profs who were skeptical of the value of correctional rehabilitation.
- They did a new analysis and found the same results.

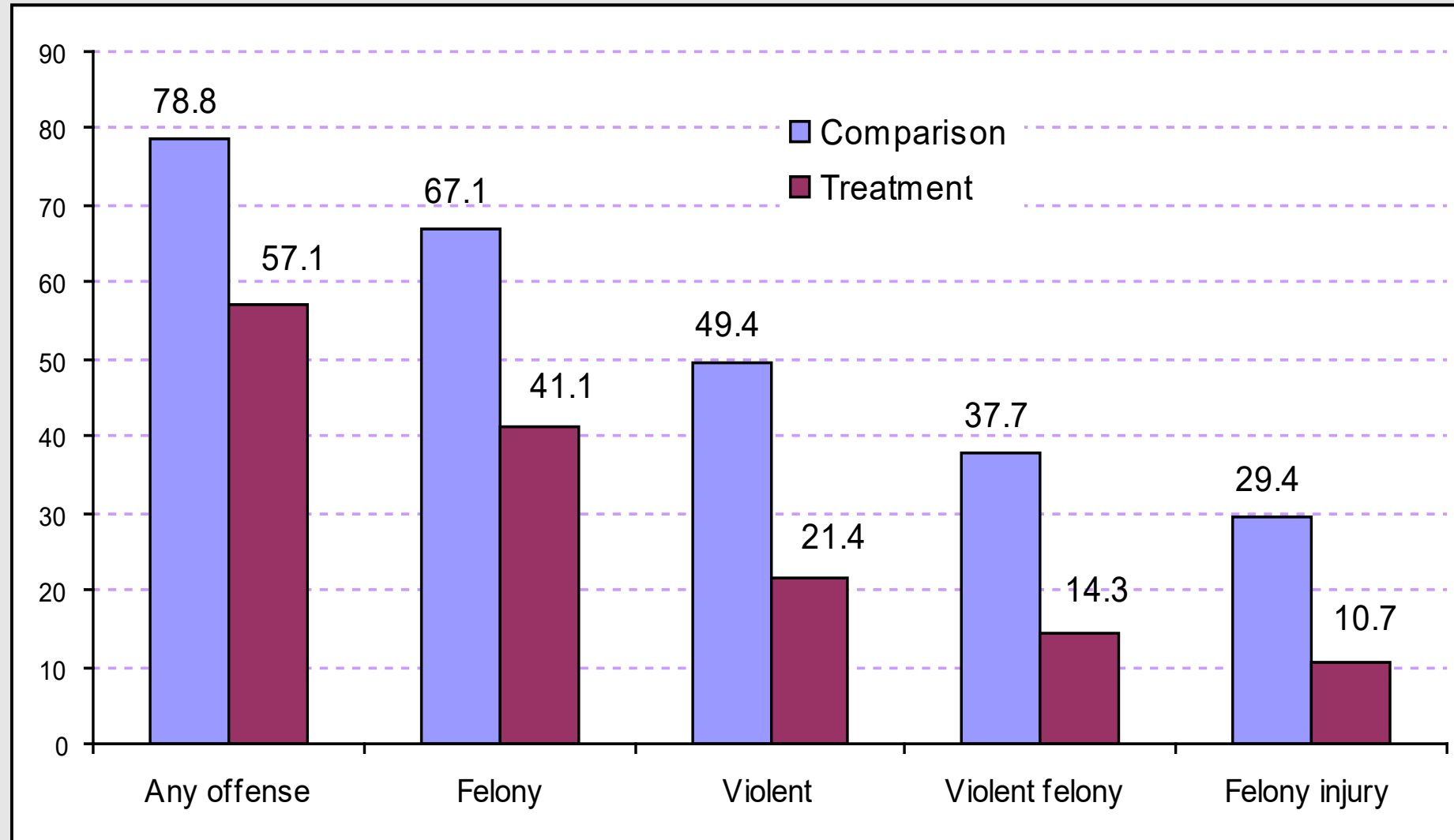
Cost-benefit Study (2006)



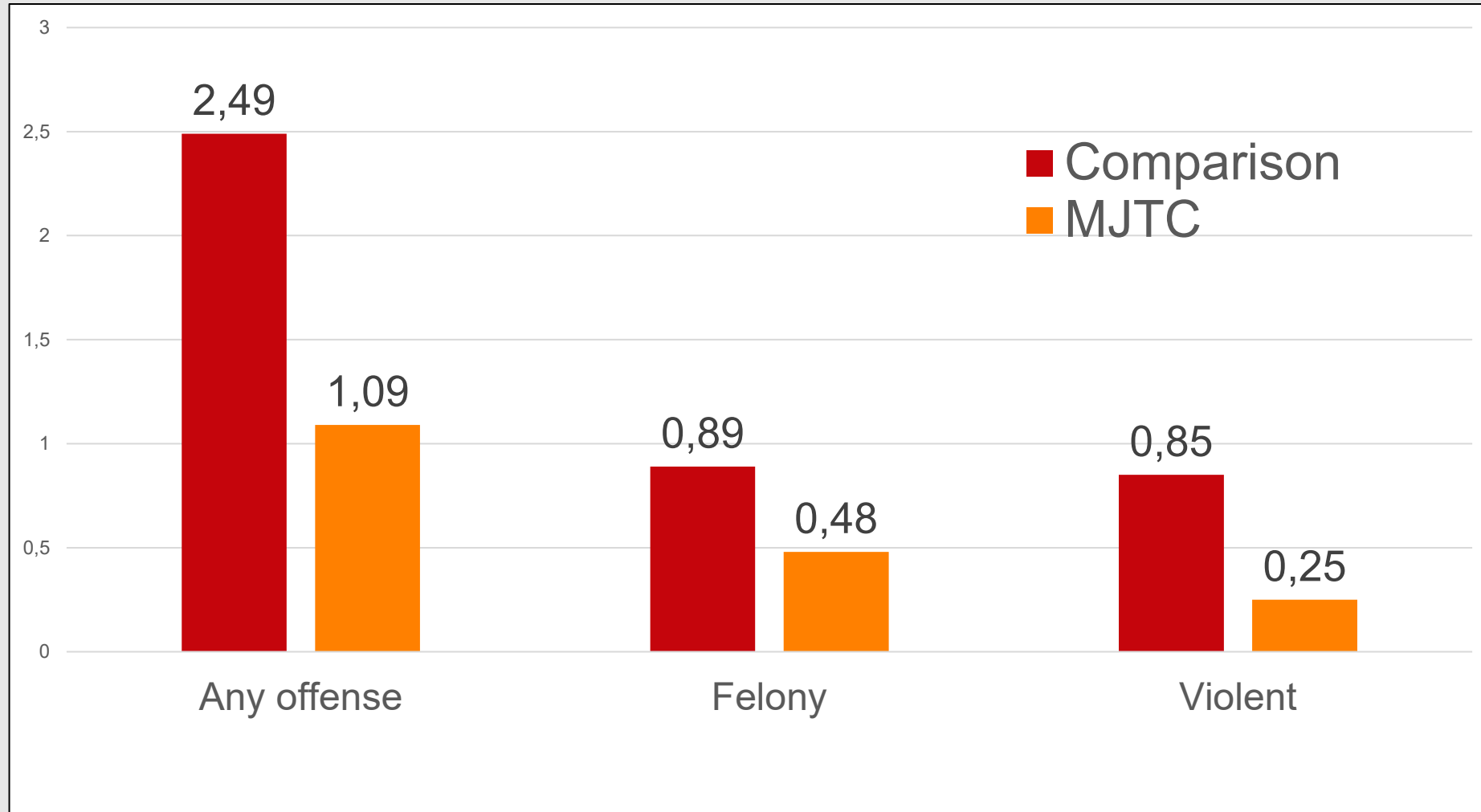
- 4.5-year study of costs of treatment vs. benefits in prevented recidivism.
- Matched 101 MJTC treatment boys with 101 assessment only boys matched using propensity score method.
- Calculated costs of MJTC, subsequent crime, and prison.

Percent re-offending by offense type over 4.5 year period

(N= 248)



Rate of offenses per youth, 4.5-year follow-up ($N = 202$)



101 propensity matched youth in each group.

Homicide outcomes



- None of the participants in the treatment group was charged with a homicide during the follow – up period.
- The control group accounted for **16 deaths** over 4.5 years ($t = 2.56, p = .011$).

Cost – benefits



- The cost benefit ratio of MJTC compared to the usual treatment is over 7 to 1.
- **Every \$1 invested returns \$7.18 over 4.5 years.**
- The total savings returned on the initial added investment of \$7,014.44 for MJTC treatment is 518 % over 4.5 years; just over 130 % per year.



The Fledgling Psychopath?

- Is treatment still effective with youth who have significant psychopathic traits?
- PCL:YV was scored based on initial interviews and full record review.
- We used two independent raters and used the consensus scores.
- Validity and reliability numbers were very good.
- Scores were very high (*Mean = 32, Median = 31*)

PCL:YV Validity: Correlations



	MJTC PCL:YV total	Others
Number of CD symptoms	.67**	.38 to .69
Number of violent CD symptoms	.58**	.47
Age of first arrest	-.32**	-.30 to -.46
Age of onset of CD	-.35**	-.25 to -.46
Number of institutional infractions	.36**	.24 to .49
History of institutional violence	.27**	.28 to .49

** $p < .01$

PCL:YV Validity



	MJTC PCL:YV	Others
Full Scale IQ	-.25**	.00 to -.11
Number of prior charges	.21**	.33 to .42
Prior charged crimes vs. persons	.26**	.22 to .27
Worst victim injury code	.35**	
Pride in Delinquency total	.27**	
Criminal Sentiments Scale total	.35**	
Aggression Questionnaire Physical Aggression Scale	.30**	

** $p < .01$

PCL:YV Validity



Number of prior charges	PCL:YV Total
Non-violent felonies	.05
Violent misdemeanors	.19**
Violent felonies	.24**
Violent felonies with victim injury	.19**
All crimes	.16*
Violent crimes	.27**
Felonies	.18**

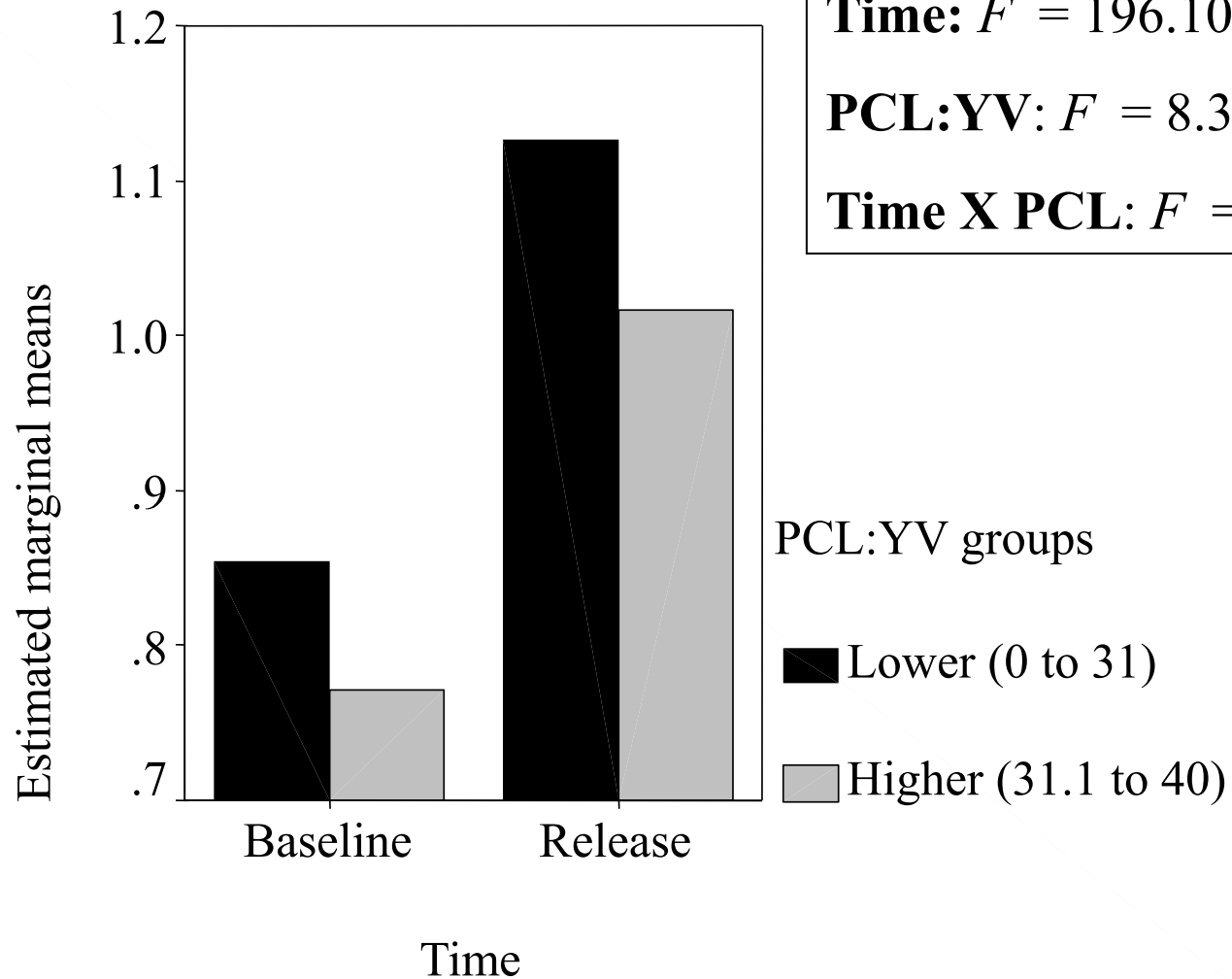
* $p < .05$, ** $p < .01$

Process outcomes



- Included 86 new participants.
- Compared average behavioral point totals and number of days on security status over two 3-week intervals (on admission and post – treatment).
- Compared youth with high PCL:YV (>31) to low PCL:YV (<31). Cut the sample at the median; for both groups $n = 43$.

ANOVA Behavioral change by PCL:YV



Time: $F = 196.10, p < .001$

PCL:YV: $F = 8.35, p < .005$

Time X PCL: $F = .53, n.s.$

Final behavioral scores were predicted by weeks of treatment



Predictor	<i>R</i> ² <i>Change</i>	<i>Std.</i> <i>beta</i>	<i>F change</i>	Sig. (<i>p</i> <)
Step 1: PCL:YV, Age, Criminal Versatility, Baseline	.423		14.84	.0005
Weeks of Treatment	.069	.283	10.95	.001

Predictors of violent recidivism



- Cox proportional hazard analysis was used to predict recidivism outcomes over a 4.5-year f/u.
- PCL:YV total scores were entered with the final behavioral score.
- Only the final behavioral score was significantly predictive of violent recidivism: ($X^2_{1, (1, 84)} = 4.25, p < .05, \text{Std. } \beta = .025, p < .05$).**
- PCL:YV **did not** predict violent recidivism: (Std. $\beta = 1.04, n.s.$)

PCL facets



- PCL:YV completed on admission
- Follow – up = 54 months (*Range* = 24 to 79 months)
- Institutional behavior measured with Today – Tomorrow data
- Examined:
 - (1) relationship between facets and behavior change and
 - (2) relationship between facets and recidivism.

ANOVA to predict improved behavior points ($N = 92$)

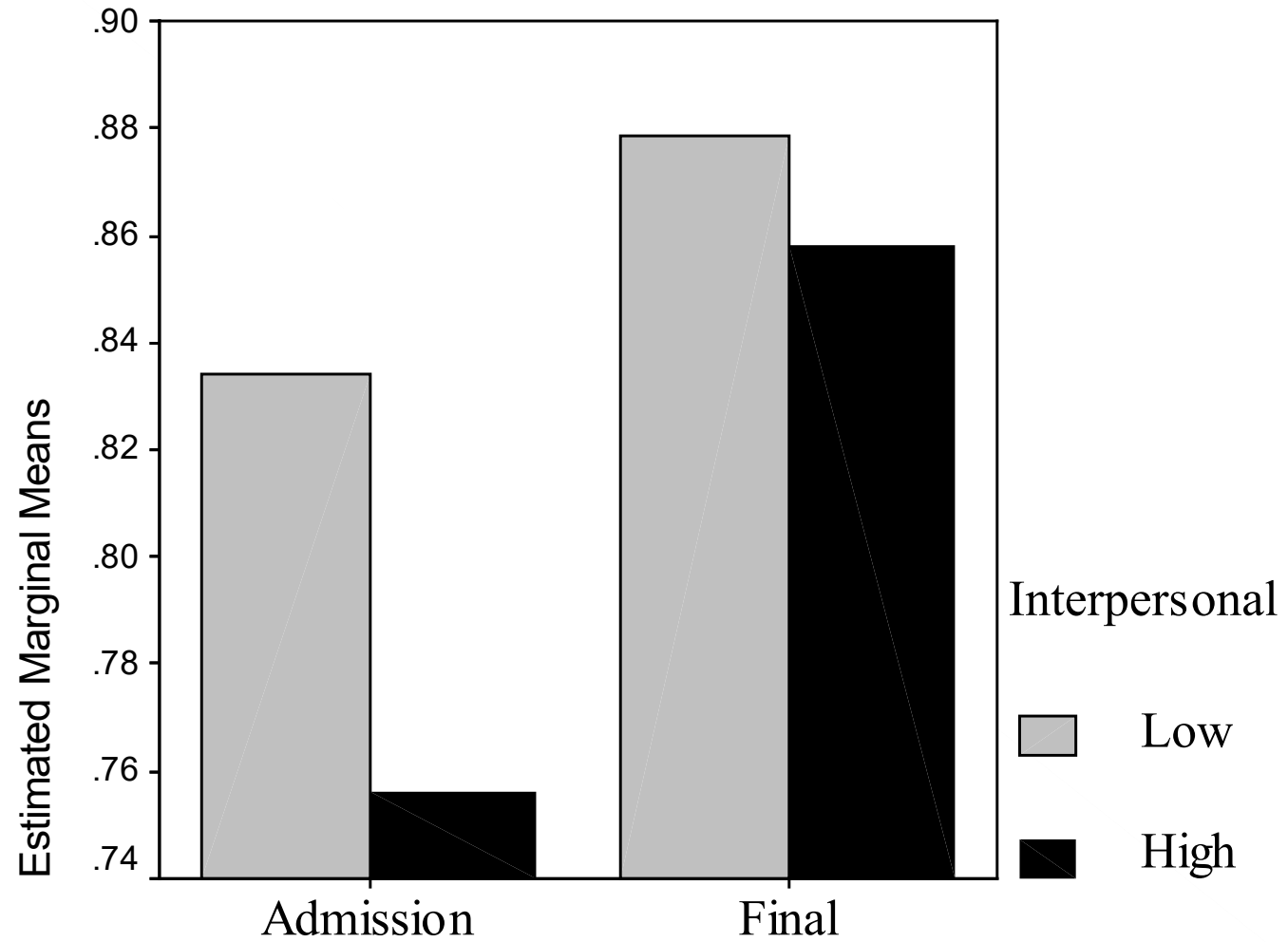


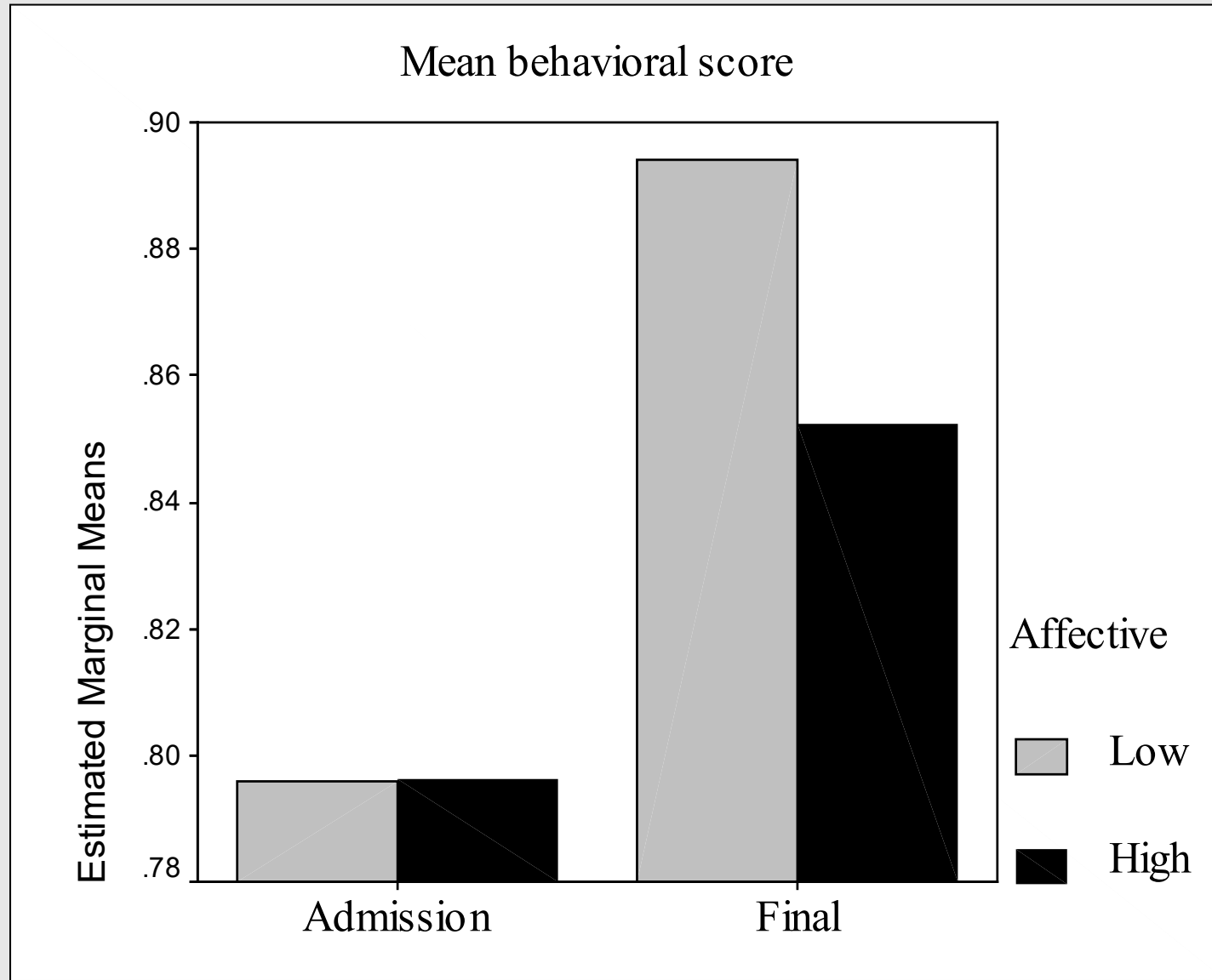
PCL:YV Interpersonal facet	Mean square	F statistic	Eta squared	95% C.I. lower	95% C.I. upper
Time (Admission/final)	0.25	24.70***	0.215	0.082	0.351
Interpersonal facet (low/high)	0.06	4.75*	0.050	0.00	0.158
Time X Interpersonal facet	0.04	3.80*	0.041	0.00	0.143

*** = $p < .0005$; * = $p < .05$



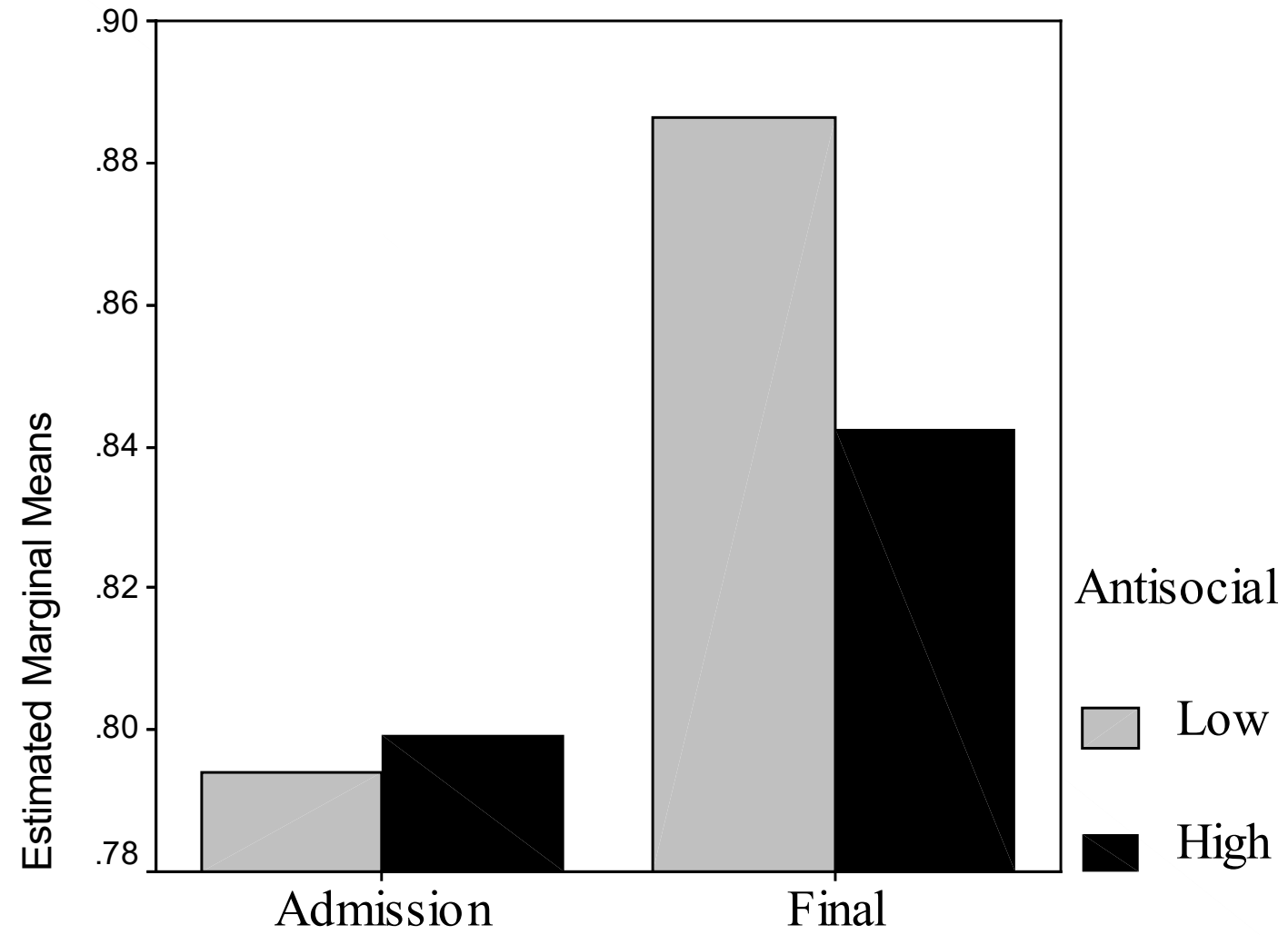
Mean behavioral score





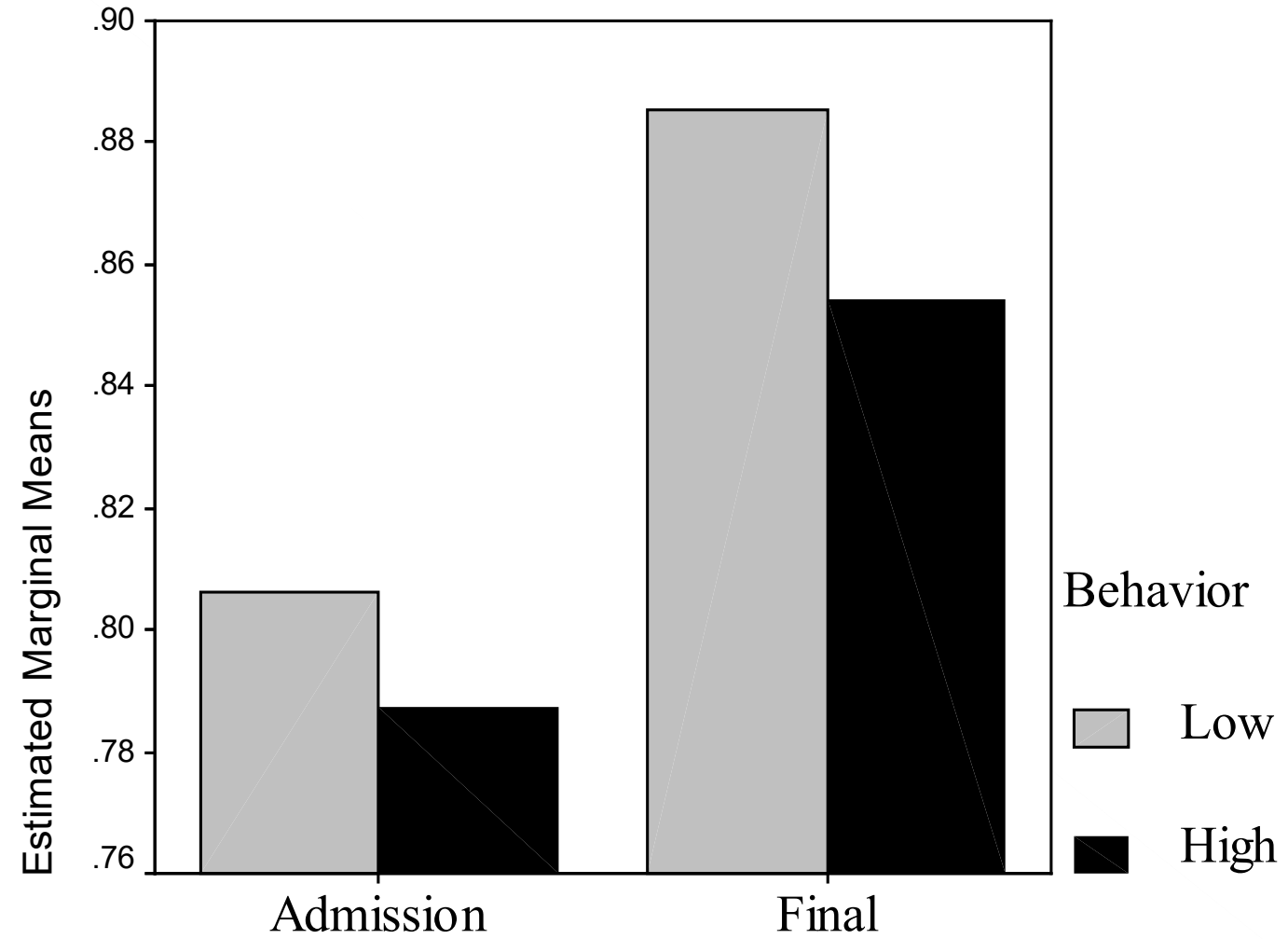


Mean behavioral score





Mean behavioral score



The point?



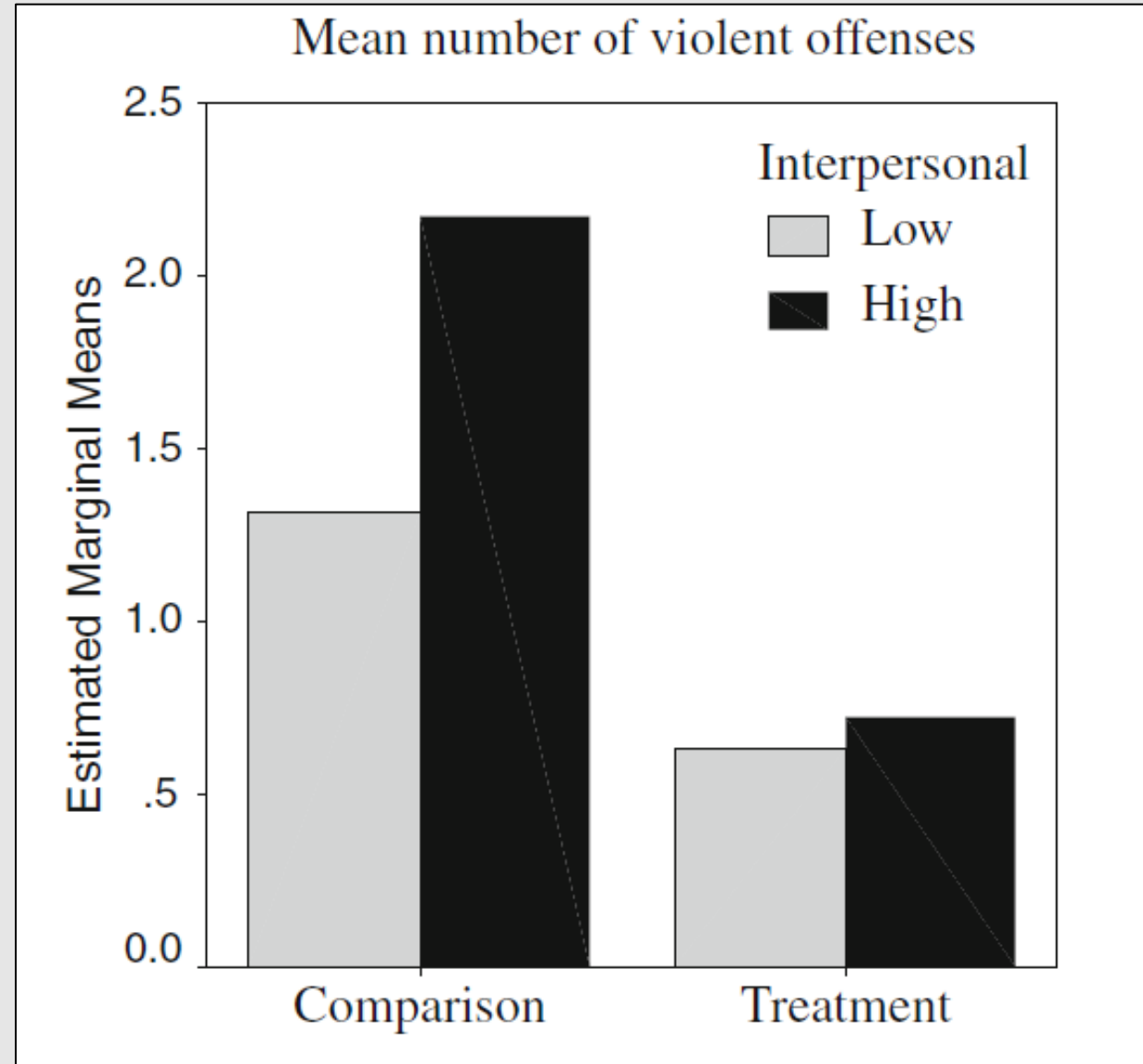
- The length of treatment predicted the improvement in behavioral scores
- In each analysis the level of psychopathic characteristic (the facet) did not prevent the youth from improving on the Today-Tomorrow program.
- Kids with the most disturbed interpersonal behavior (lying, manipulation, etc.) improved the most.

Does this translate to lower recidivism?

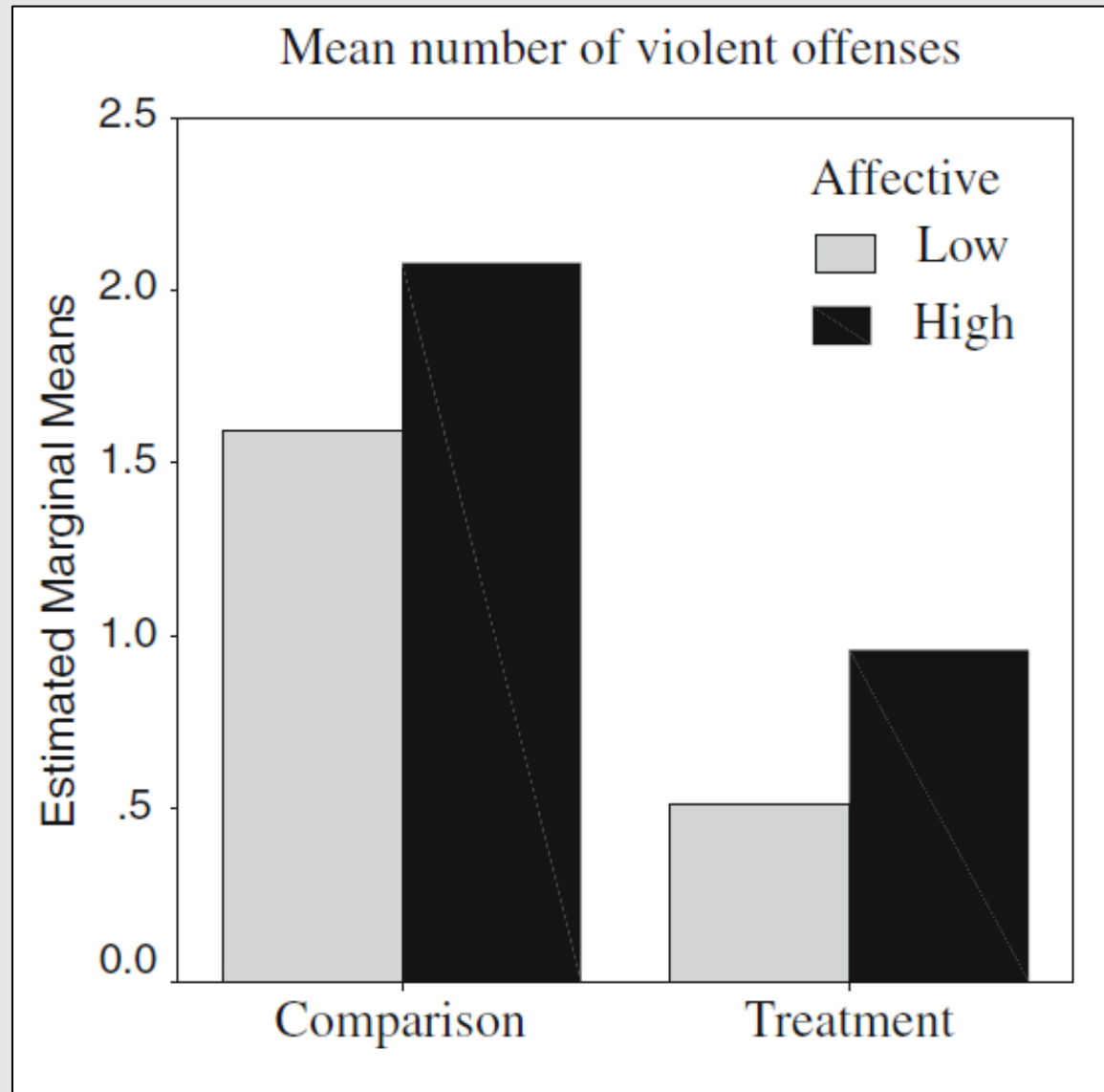


- Studied 94 Treatment kids, propensity score matched to 91 control group kids.
- Followed them for an average of 54 months (4.5 years) after release.
- Compared the groups on violent offending.
- The results showed that treatment predicted much lower violent recidivism.
- Psychopathy scores did not predict violent recidivism.
- Treatment appears to neutralize the effect of psychopathy traits on violence.

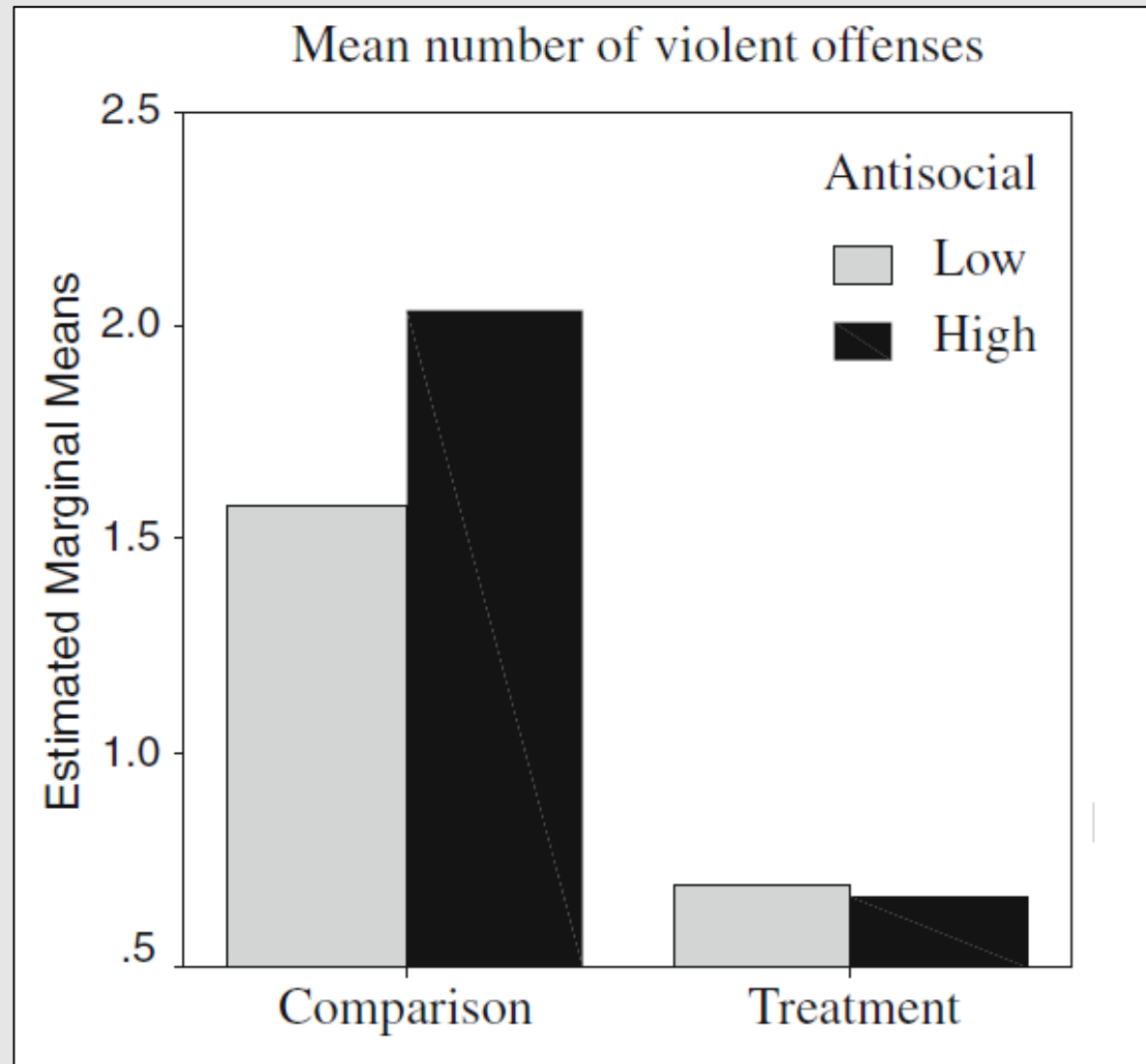
Violent recidivism



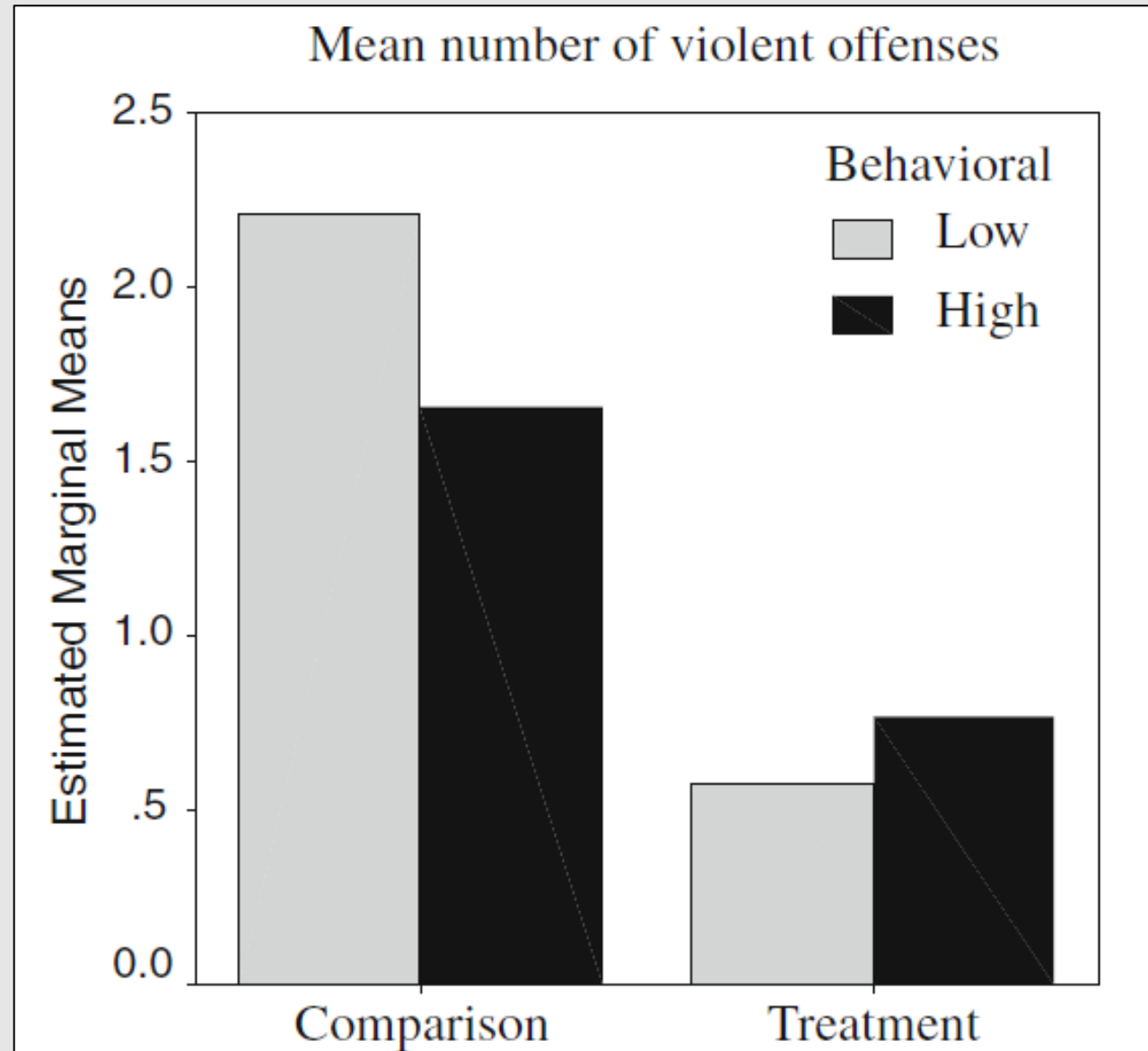
Violent recidivism



Violent recidivism



Violent recidivism ($N = 185$)



Predictors of violent recidivism ($N = 185$)



PCL:YV Interpersonal facet	Mean square	<i>F</i> statistic	Eta squared	95% C.I. lower	95% C.I. upper
Time at risk	12.64	4.26*	0.023	0.000	0.076
Treatment vs. Control	50.10	16.87***	0.086	0.021	0.162
PCL:YV Interpersonal facet	9.80	3.30	0.018	0.000	0.068
Treatment X facet	6.64	2.24	0.012	0.000	0.057

*** = $p < .0005$; * = $p < .05$

Results

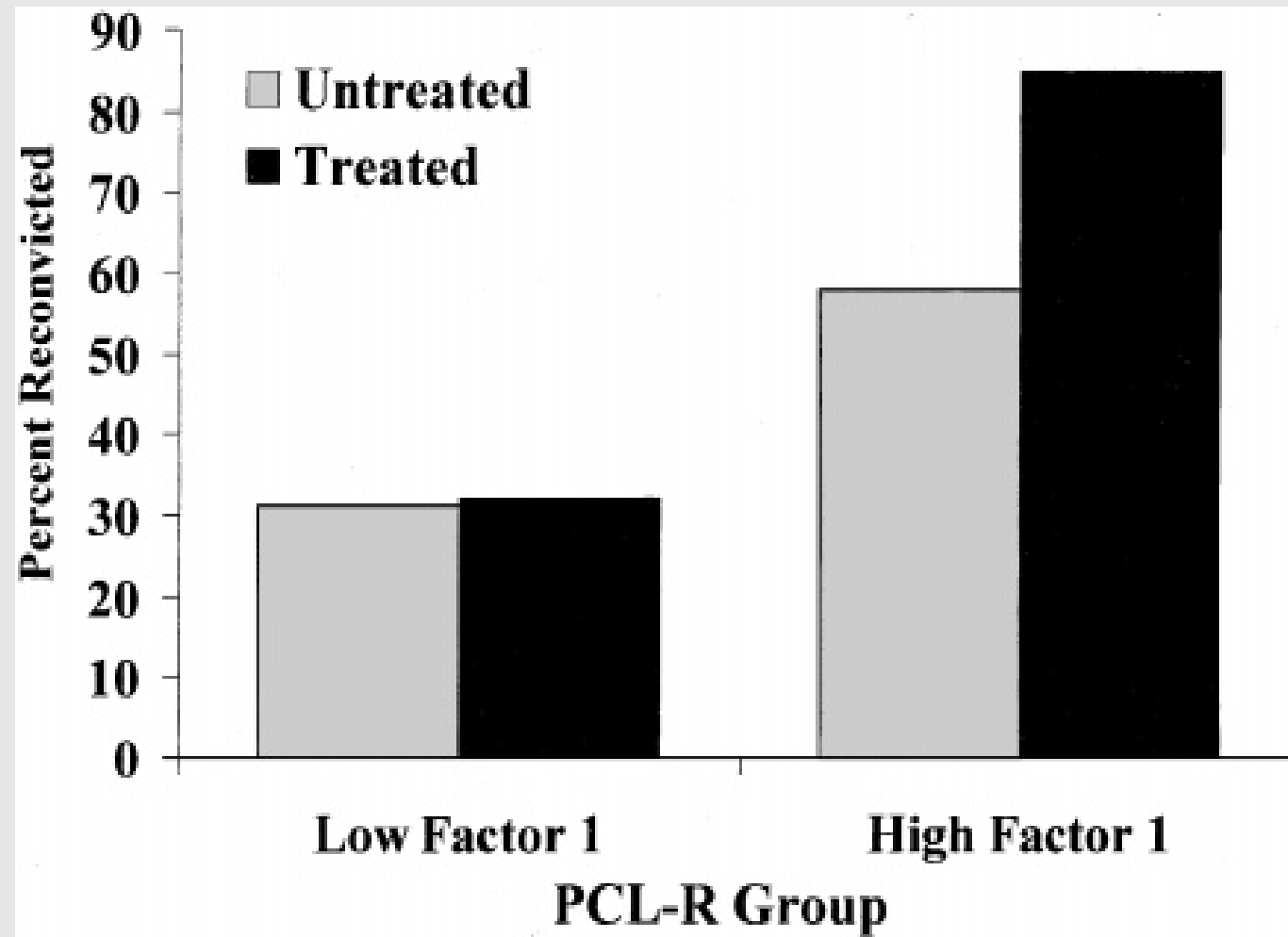


- The Interpersonal facet was most related to treatment progress.
- Kids with the worst interpersonal functioning seemed to improve the most with treatment.
- MJTC emphasizes interpersonal processes.

Hare, Clark, Thornton, 2000



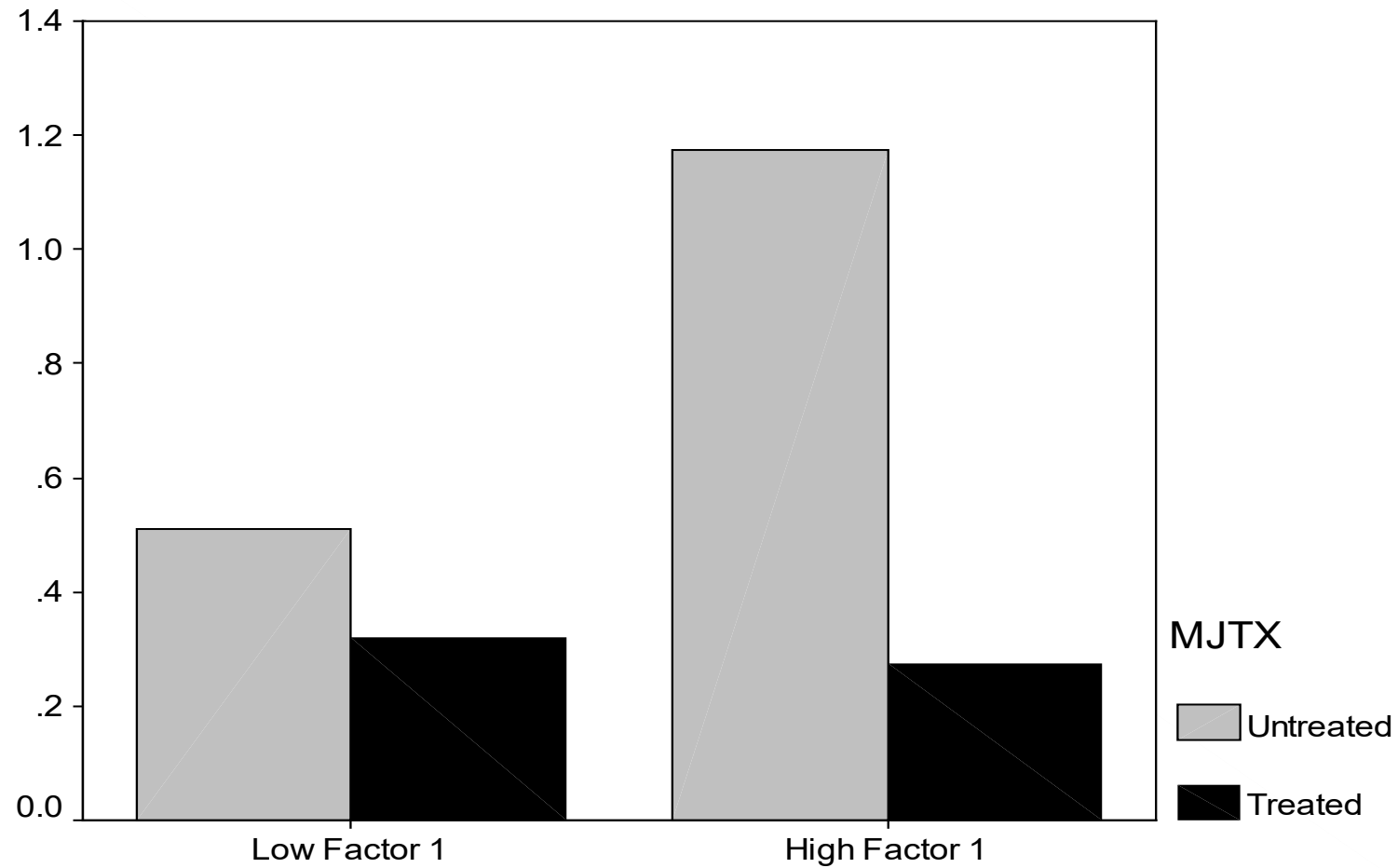
N = 278 from English Prison Services who attended any social skills or anger management programs



Caldwell (2011)



Mean number of violent offenses



Treatment predicts less violent recidivism



Effect	<i>F</i>	<i>Eta squared</i>	Sig. (<i>p</i> =)
<i>Factor 1</i>			
Time at risk	13.42	.064	.000
Treatment group (Treatment = 1, Comparison = 0)	7.63	.037	.006
Factor 1	0.21	.001	.649
Treatment X Factor 1	4.65	.023	.032

Are psychopathic traits changing during treatment?



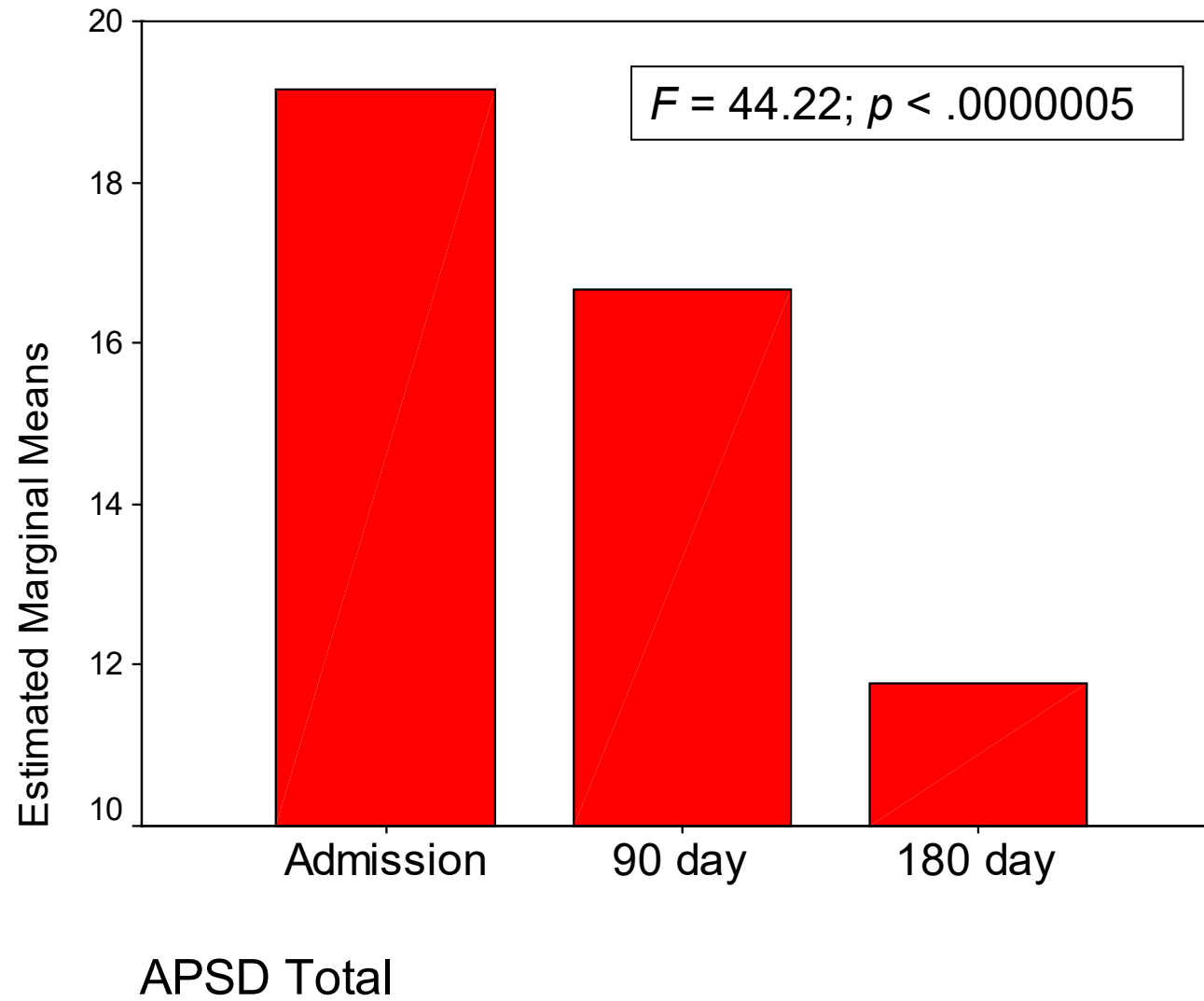
- Treatment may break the link between psychopathic traits and violence OR
- Treatment may actually reduce the level of psychopathic traits
- The psychopathic traits most associated with violence are callous / unemotional traits.
- We had the boys complete a questionnaire (the APSD) that measured these traits every 90 days

APSD study

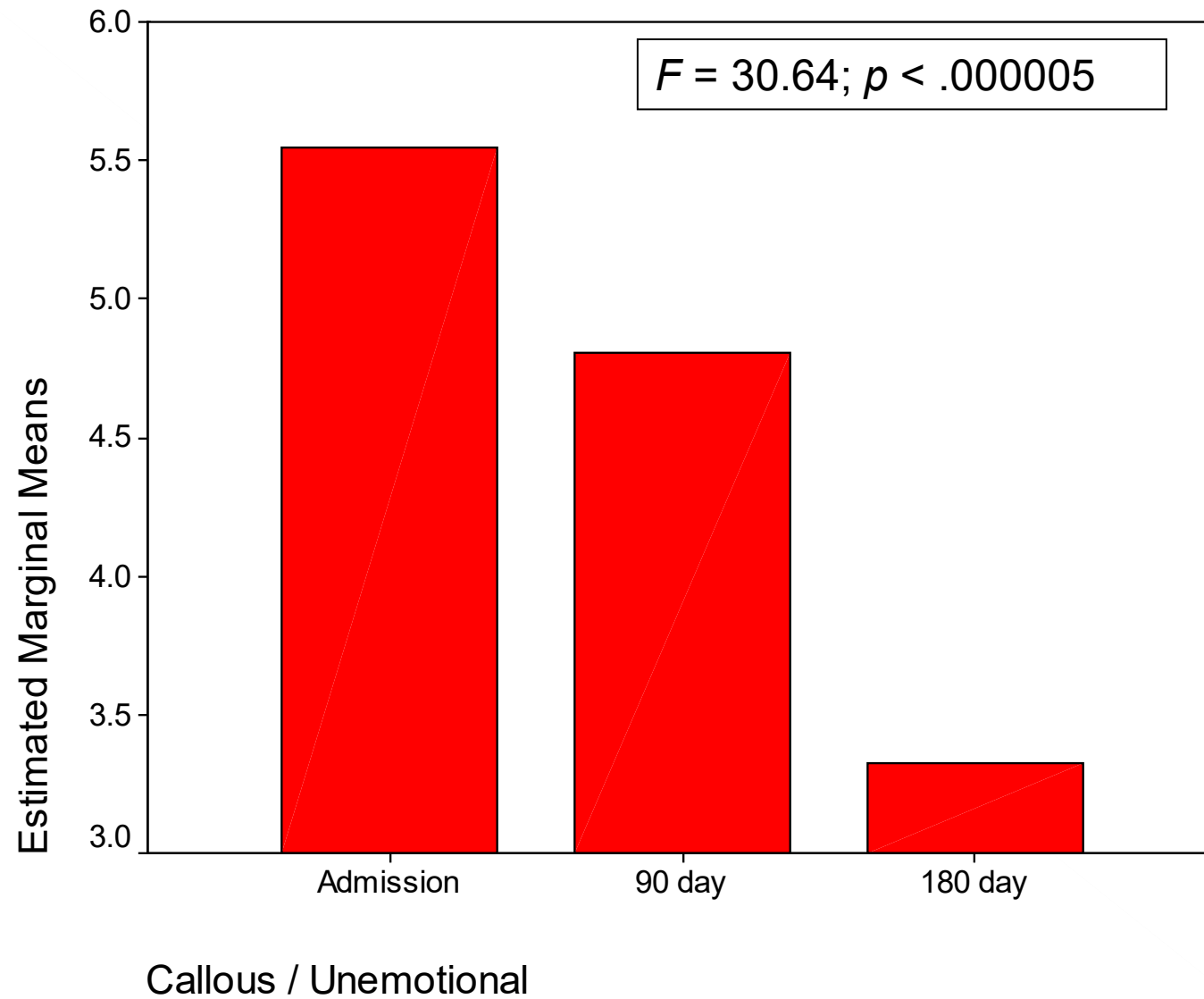


- Antisocial Processes Screening Device (Frick, 2001), a self-report measure of psychopathic features (Impulsive, Narcissism, Callous/unemotional)
- Data were collected on admission and at 90 days intervals.
- Repeated measures ANOVA with admission score at Time 1 and last 90-day assessment as Time 2.
- One way ANOVA to predict changes in psychopathic features over the time the youth was in treatment.

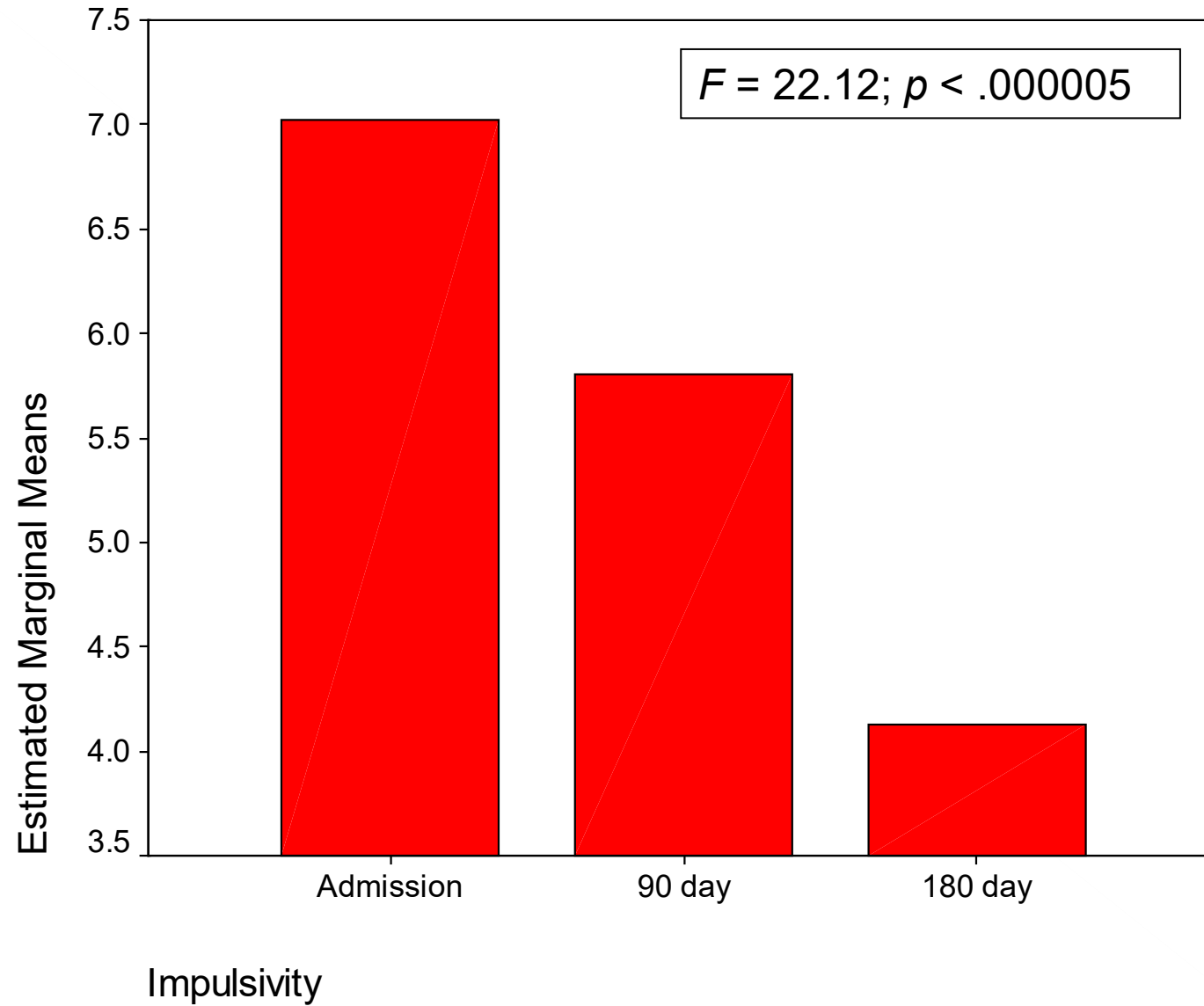
APSD Total Score Changes ($N = 127$)



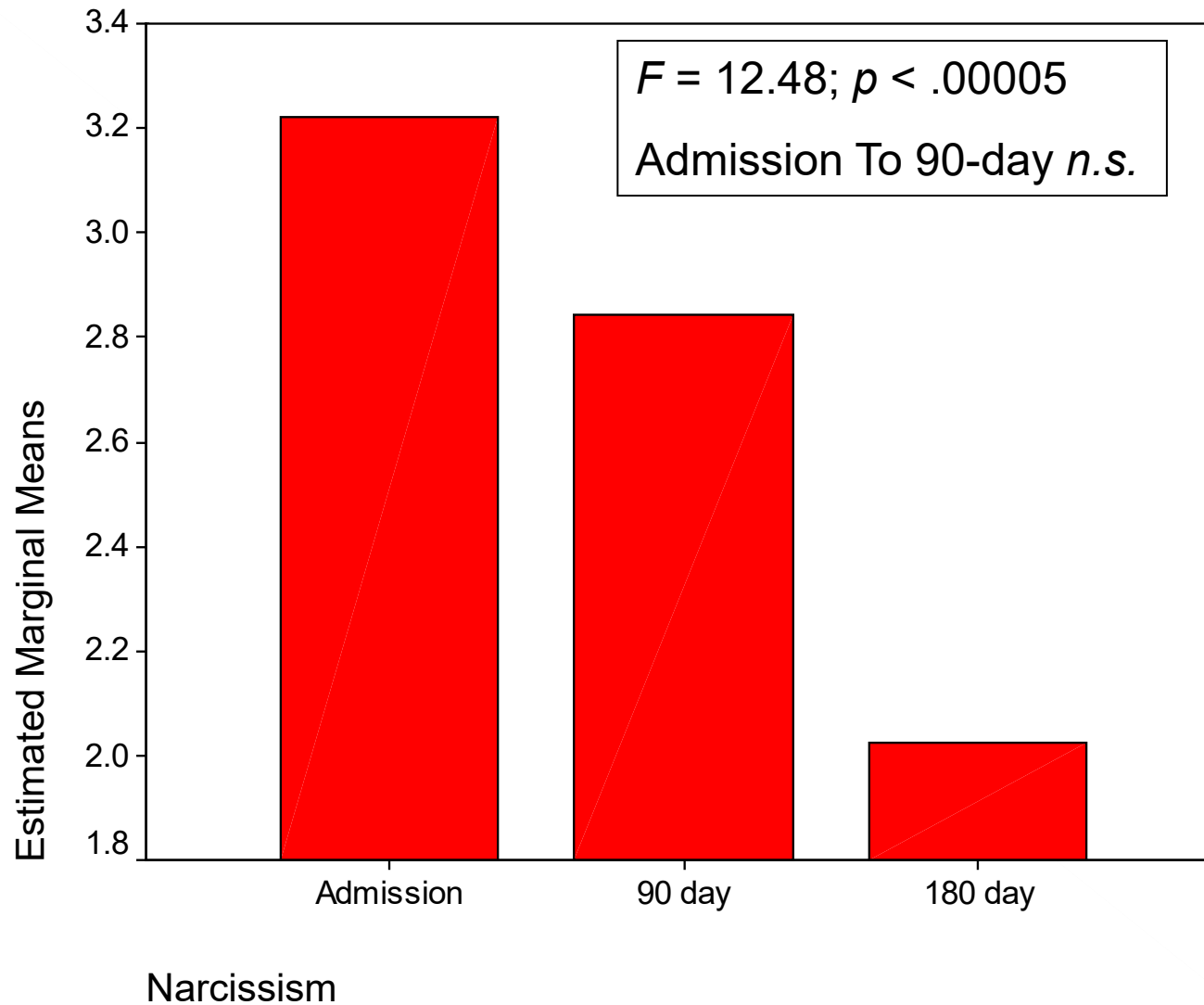
APSD Callous / Unemotional trait changes (N = 127)



APSD Impulsivity changes (N = 127)



APSD Narcissism changes happen slower (N = 127)



Minimal improvement in the first 90 days.
Significant improvement after 90 days.

Time in treatment predicts lower psychopathic traits



	<i>Mean square</i>	<i>F</i>	<i>Eta squared</i>	<i>95% CI</i>	
				Upper	Lower
APSD Total ^a	2102.34	78.20	.51	.34	.62
Callous/ Unemotional ^a	189.88	58.28	.43	.27	.56
Narcissism ^b	54.96	23.73	.24	.09	.38
Impulsive ^a	322.92	69.02	.48	.31	.59

a: $p < .0000001$; b: $p < .00005$



Changes in scores predict improved behavior

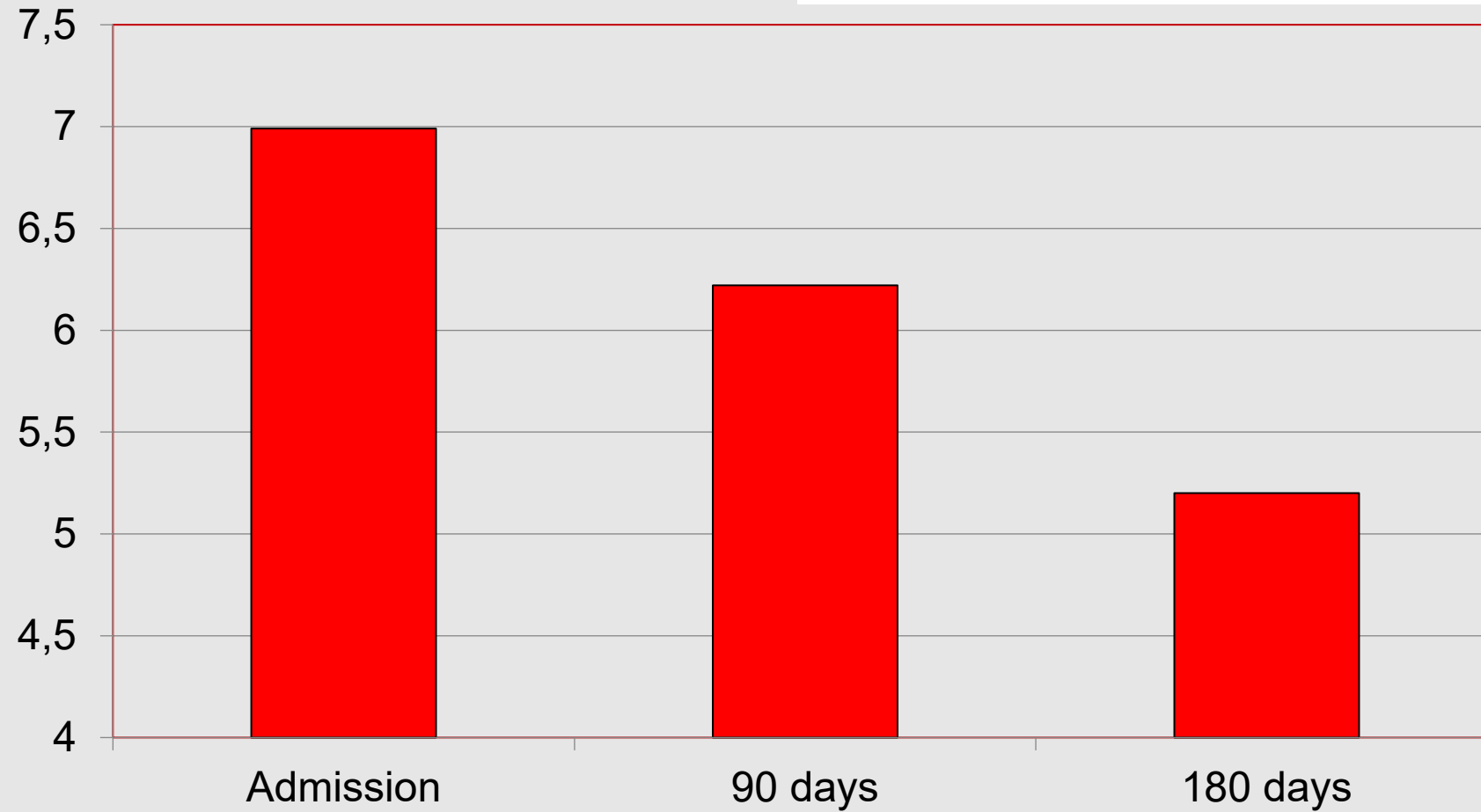
Hierarchical regression to predict final behavior scores ($N = 127$, $df = 3, 126$)

	R^2 <i>change</i>	F <i>change</i>	Sig. ($p <$)
Step 1: Admission APSD and Behavior Scores	.320	29.21	.0001
Step 2: Final APSD total	.068	13.58	.0005
Step 2: Final CU scores	.066	13.04	.0005
Step 2: Final Narcissism	.027	5.05	.05
Step 2: Final Impulsivity	.044	8.35	.005

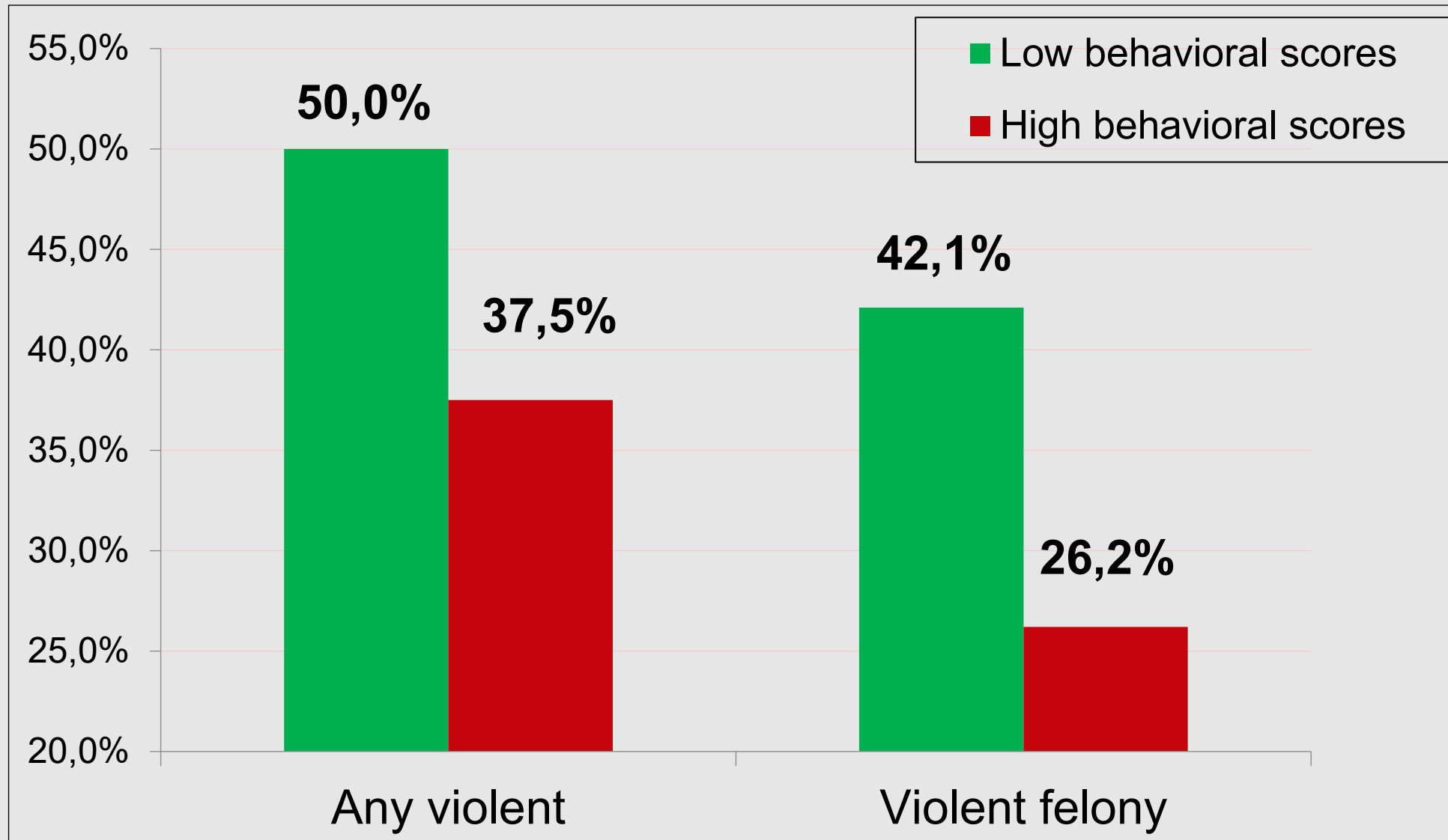
ICU Callousness



$F = 6.51, p = .002, N = 88$



Final Today-Tomorrow points predict less violent offending





The point?

- Treatment time improved the relevant psychopathic traits AND
- Improvement in psychopathic traits predicted improved Today-Tomorrow scores AND
- Improved Today-Tomorrow scores predicted lower rates of violent recidivism
- This appears to be the mechanism that MJTC produces lower violent recidivism.