

# **Contingency Management and Treatment Engagement in a Sample of Cocaine-using Methadone Patients**

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# Abstract

Behavioral interventions such as contingency management (CM) have shown promise in engaging and retaining patients in outpatient methadone treatment. This study compares the effectiveness of CM in increasing treatment engagement among cocaine and non-cocaine using methadone patients. A 2 x 2 design was utilized based on cocaine admission status (cocaine or non-cocaine) and CM intervention (reward or non-reward). Patients (N=114) were randomly assigned to treatment conditions based on cocaine use. The CM intervention lasted for 2 months and progress was followed for 3 months.

Analysis of variance (ANOVA) examined differences in treatment participation and engagement. CM patients attended significantly more sessions and had better treatment compliance. In terms of treatment engagement, there was a significant interaction between cocaine group and CM. Treatment engagement was enhanced in non-cocaine admissions. However, cocaine admissions receiving rewards had increased engagement (rapport) as measured in the 3 months after the intervention. In summary, CM appears to be an effective intervention for cocaine-using patients enrolled in methadone treatment.

# DATAR Project at TCU:

(Drug Abuse Treatment Assessment and Research)

- ❖ 4 Methadone Programs in Texas
- ❖ 1500 Admissions (*60 studies*)
- ❖ Treatment Enhancement Strategies

- ✓ Cognitive interventions (mapping)
- ✓ Specialized counseling manuals
- ✓ Contingency management (CM)

- ❖ Intake & Treatment Process Assessments
- ❖ Follow-up Outcome Evaluations (1 Year)

**Funded by the National Institute on Drug Abuse**



# Background

- ❖ **Cocaine use has been identified as a treatment problem for patients in outpatient methadone programs**
  - ✓ Poor compliance with treatment
  - ✓ More criminal involvement
  - ✓ Little motivation to address cocaine use
- ❖ **Cocaine use disrupts the therapeutic alliance**
  - ✓ Counselors spend more time confronting
  - ✓ Counselors must oversee 'negative' reinforcers (fines, dose reductions)
  - ✓ Counselors rate cocaine-using patients as less motivated, harder to engage in treatment
- ❖ **Contingency management (CM) has shown promise for addressing these issues**

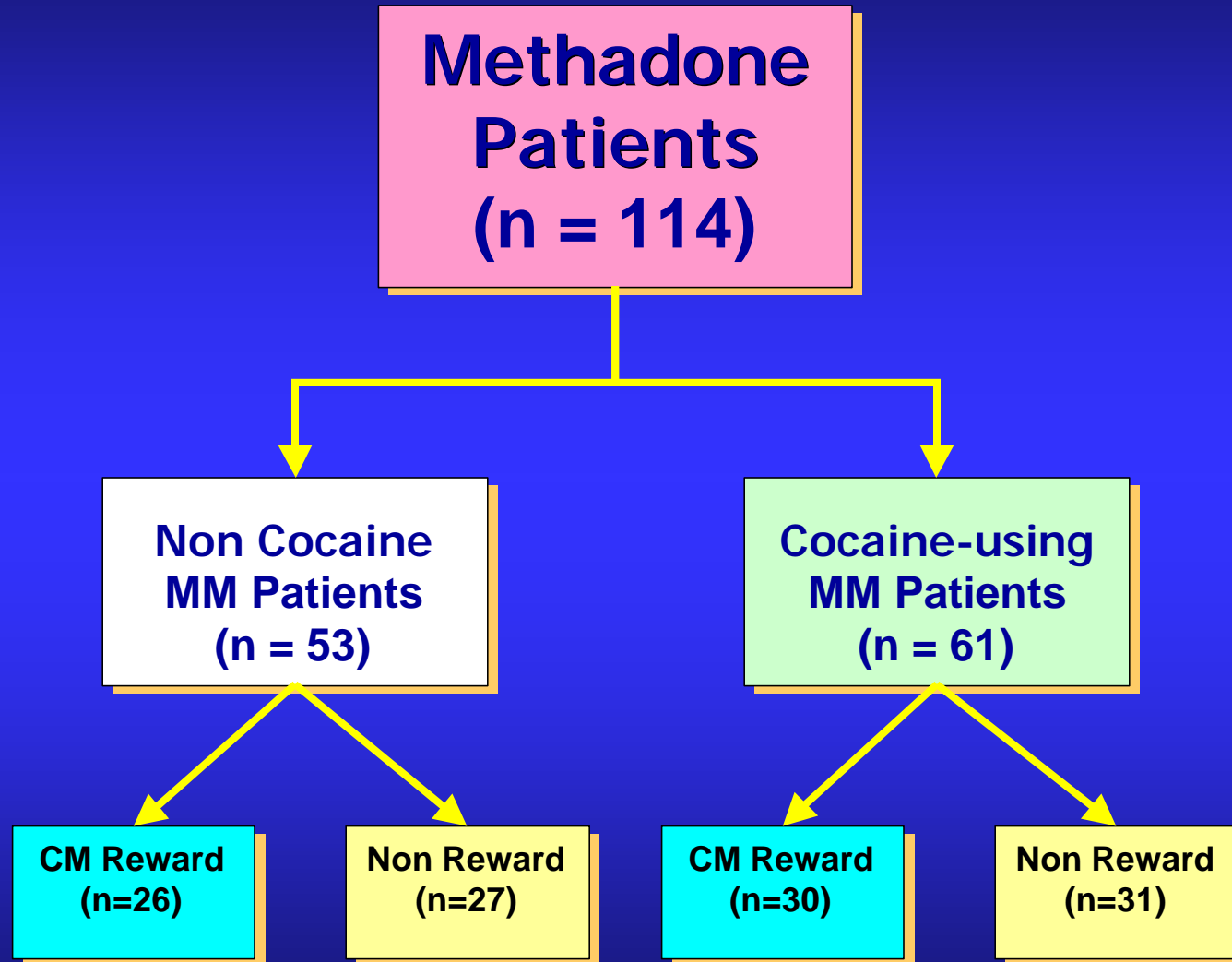
# Research Questions

- ❖ **Does CM increase treatment participation?**
  - ✓ Session attendance
  - ✓ Treatment compliance (urinalysis)
  
- ❖ **Does CM increase treatment engagement?**
  - ✓ Counselor evaluations of patients
    - Rapport, self confidence, motivation
  - ✓ Counseling strategies
    - Goal-setting, communication
  
- ❖ **Is CM more effective in cocaine-using methadone patients compared to non cocaine-using methadone patients?**

# Sample and Methods

- ❖ 114 outpatient methadone patients
  - ✓ Cocaine positive = 61
  - ✓ Cocaine negative = 53
  - ✓ Randomly assigned to reward condition
- ❖ Cocaine use assessed by at least one:
  - ✓ DSM-IV criteria for cocaine dependence
  - ✓ Self-reported cocaine use (weekly+)
  - ✓ Positive cocaine urine (admission)
- ❖ Monitoring of cocaine use
  - ✓ At admission (baseline)
  - ✓ Weekly during 8-week treatment intervention (CM)
  - ✓ Weekly during 8-week post-intervention period

# Research Design



# Contingency Management

- ❖ **Patients earned stars for target behaviors**
  - ✓ Stars placed on an incentive chart
- ❖ **Target behaviors included:**
  - ✓ Individual and group session attendance
  - ✓ Cocaine-free urinalysis
  - ✓ Progress toward treatment goals
- ❖ **Stars were traded for rewards**
  - ✓ Restaurant, grocery, gas, or movie coupons
- ❖ **TCU StarChart record-keeping**
  - ✓ Used to keep track of goals and stars earned for target behaviors and generate vouchers

# STAR "PRICE LIST"

❖ Individual sessions	1 Star	8 Total
❖ Clean UA	2 Stars	16 Total
❖ Group sessions	1 Star	8 Total
❖ Bonus weekly attendance	8 Stars	8 Total
❖ Goal completion (per task)	2 Stars	10 Total

- ❖ Patients could earn a maximum of 50 stars
- ❖ 1 star = approximately 50 cents value
- ❖ Maximum 50 stars = approximately 25 dollar value

# Goal Setting Procedure

- ❖ Client and counselor agree upon a goal
- ❖ Goals limited to things realistically doable in 8 weeks
- ❖ Goals divided into specific tasks
- ❖ Tasks assigned target completion dates and relative worth (star value)
- ❖ Client reports weekly on progress toward goal

**Client ID** 
**Today's Date** 
**Counselor**

My goal for the next two months is:

	Steps to take and tasks to do	Target Date	Completed Date	Star Value
1	Be in bed with t.v. off by 10:30 pm the night before each working day for ten (10) consecutive days.	12/31/97	1/2/98	2
2	Be dressed by 6:30 am four out of five days for the preceding two (2) weeks	1/9/98		2
3	Make transportation arrangements the night before work for three (3) consecutive weeks. (15 work days).	1/21/98		2
4	Report to work by 8:00 am, for fifteen (15) consecutive working days.	2/4/98		4
5				
Total Stars =				10

# TCU StarChart

## A Computerized Tracking System

Stars Earned to Date for Patient 0403

**Individual Sessions**

★ ★ ★ ★ ★

**Group Sessions**

**Cocaine - Negative UA**

★ ★ ★ ★ ★

★ ★ ★ ★ ★

**Goal - Setting**

★ ★

**Sessions Bonus Points**

Start Date 11/24/97

End Date 1/19/98

Stars Earned **20**

Stars Spent — **10**

Stars Available **10**

Print Exit

- ❖ Makes CM easier to implement
- ❖ Manages information on rewards for behavioral improvements
- ❖ Tracks specific tasks completed toward treatment goals
- ❖ Issues vouchers for prizes
- ❖ Allows clinic staff to access a reward history for patients

# Demographics (N=114)

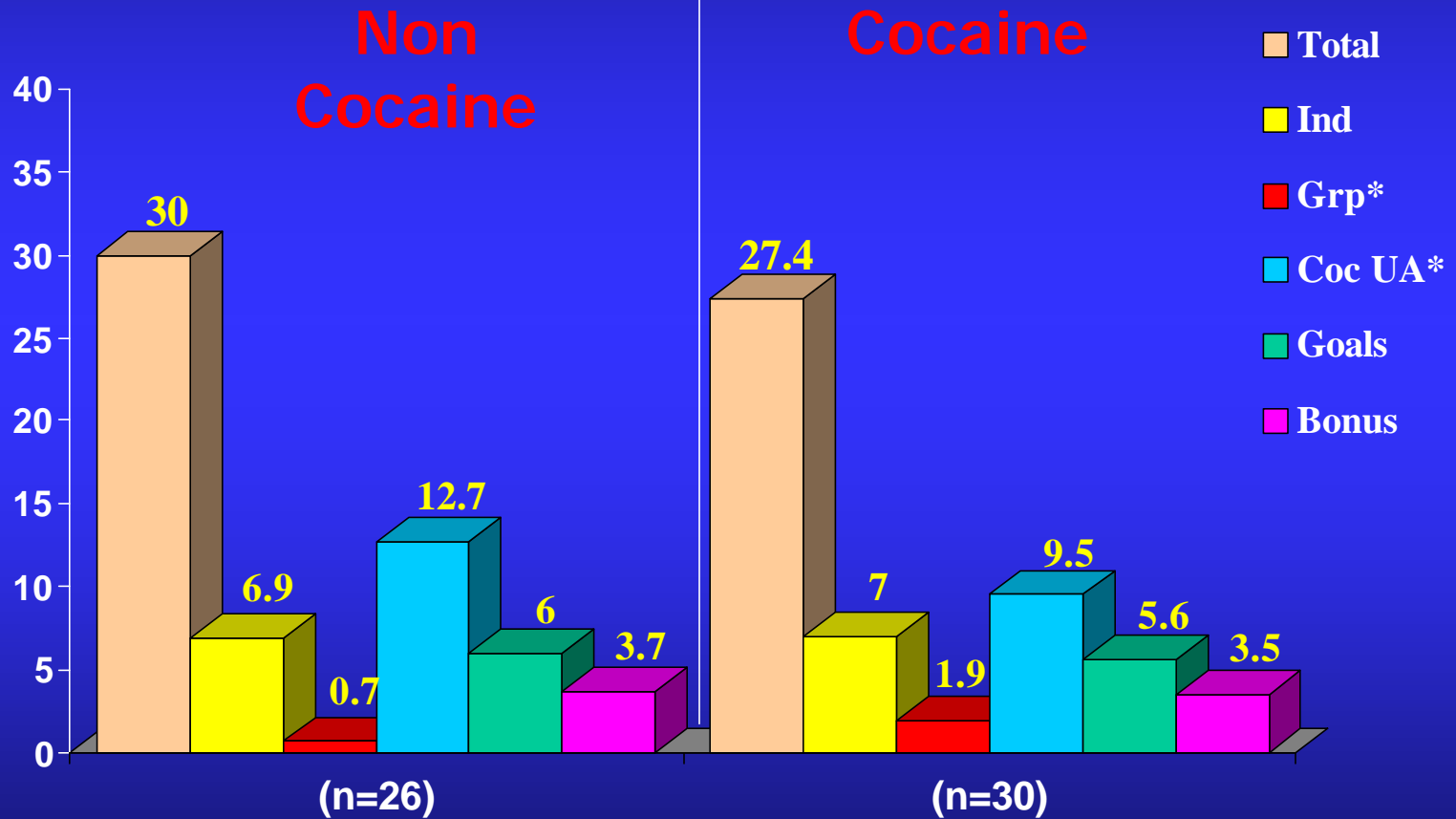
	Non Cocaine		Cocaine	
	Reward (n = 26)	No Reward (n = 27)	Reward (n = 30)	No Reward (n = 31)
<b>Male (%)</b>	77	70	60	65
<b>Race/Ethnicity (%)</b>				
White	27	22	17	23
African American	0	4	3	9
Hispanic	73	74	80	68
<b>Age (Mean)*</b>	41	37	33	34
18-29	15	22	37	35
30-35	8	22	23	23
36-40	31	22	23	13
41-45	11	12	10	16
46 +	35	22	7	13

# Demographics (N=114)

	Non Cocaine		Cocaine	
	Reward (n = 26)	No Reward (n = 27)	Reward (n = 30)	No Reward (n = 31)
% Married or Living as Married	31	41	46	39
Highest Grade (Mean)	10.9	10.4	10.4	10.3
% Any Work Last 30 Days*	65	44	33	35
% Legal Status*	50	41	73	58

# Stars Earned for Target Behaviors

# Stars Earned

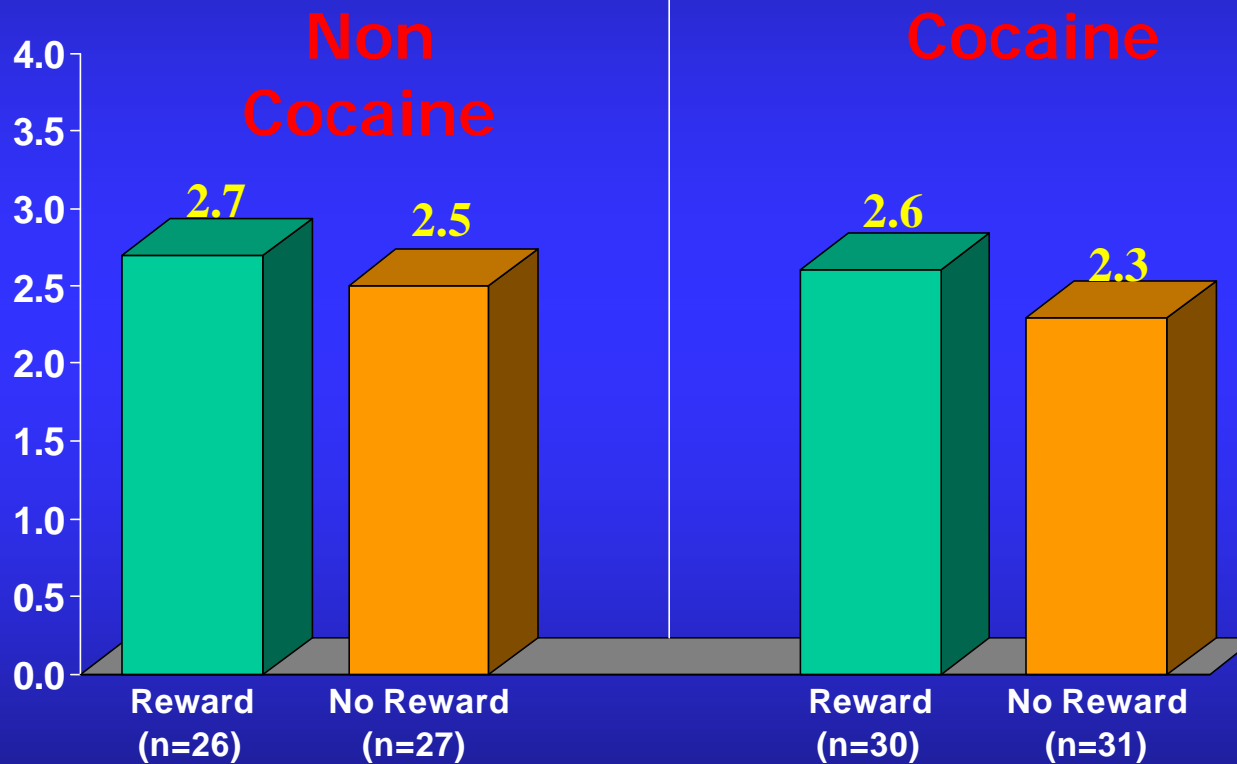


# Rewards Received (n=48 patients)

<u>Reward List</u>	<u>(#)</u>	<u>(%)</u>
Bus Tokens	46	27.7
Store Gift Certificates	32	19.3
Movie Passes	27	16.3
Restaurant Pass	19	11.4
Gas Coupons	16	9.6
Other	14	8.4
Video Rental	9	5.4
Phone Card	3	1.8
<b>TOTAL</b>	<b>166</b>	<b>100</b>

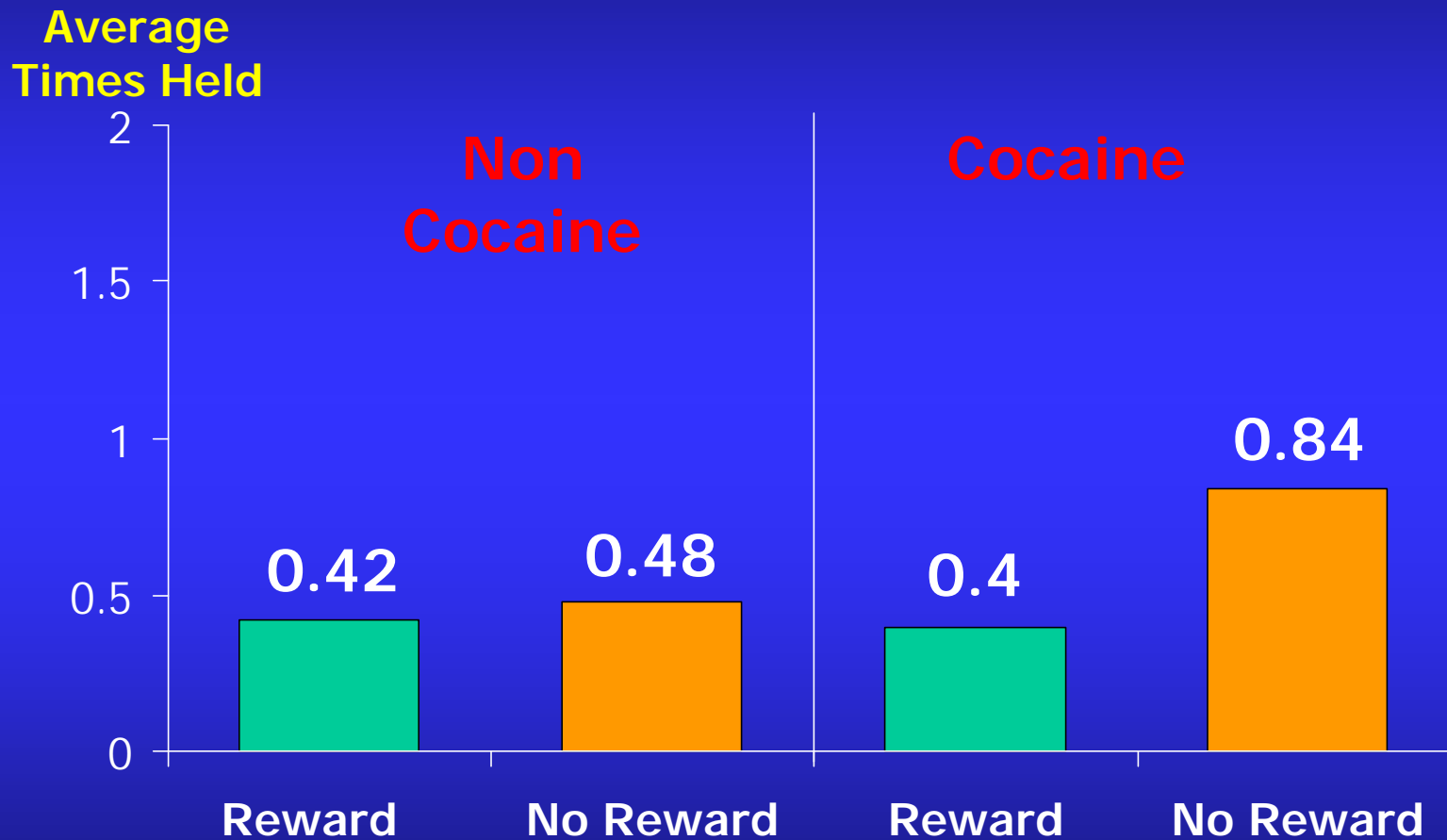
# Sessions Attended During First 6 Months of Treatment

Avg Sessions



**Reward  $F(1,110) = 3.73$   $p < .05$**

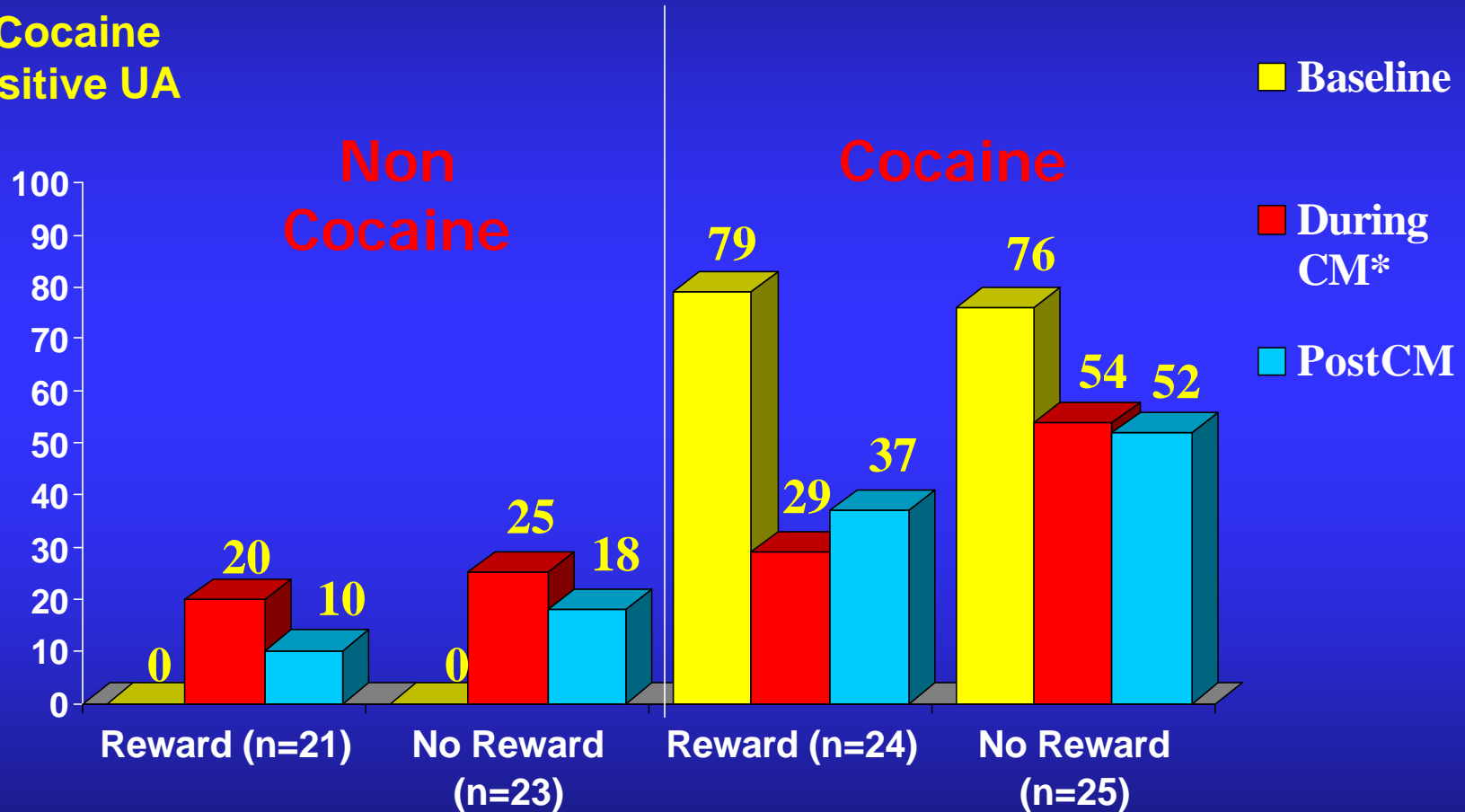
# Times Methadone Dose Held During First 6 Months (n=114)



**Reward\*Cocaine  $F(1,110) = 4.61$   $p < .05$**

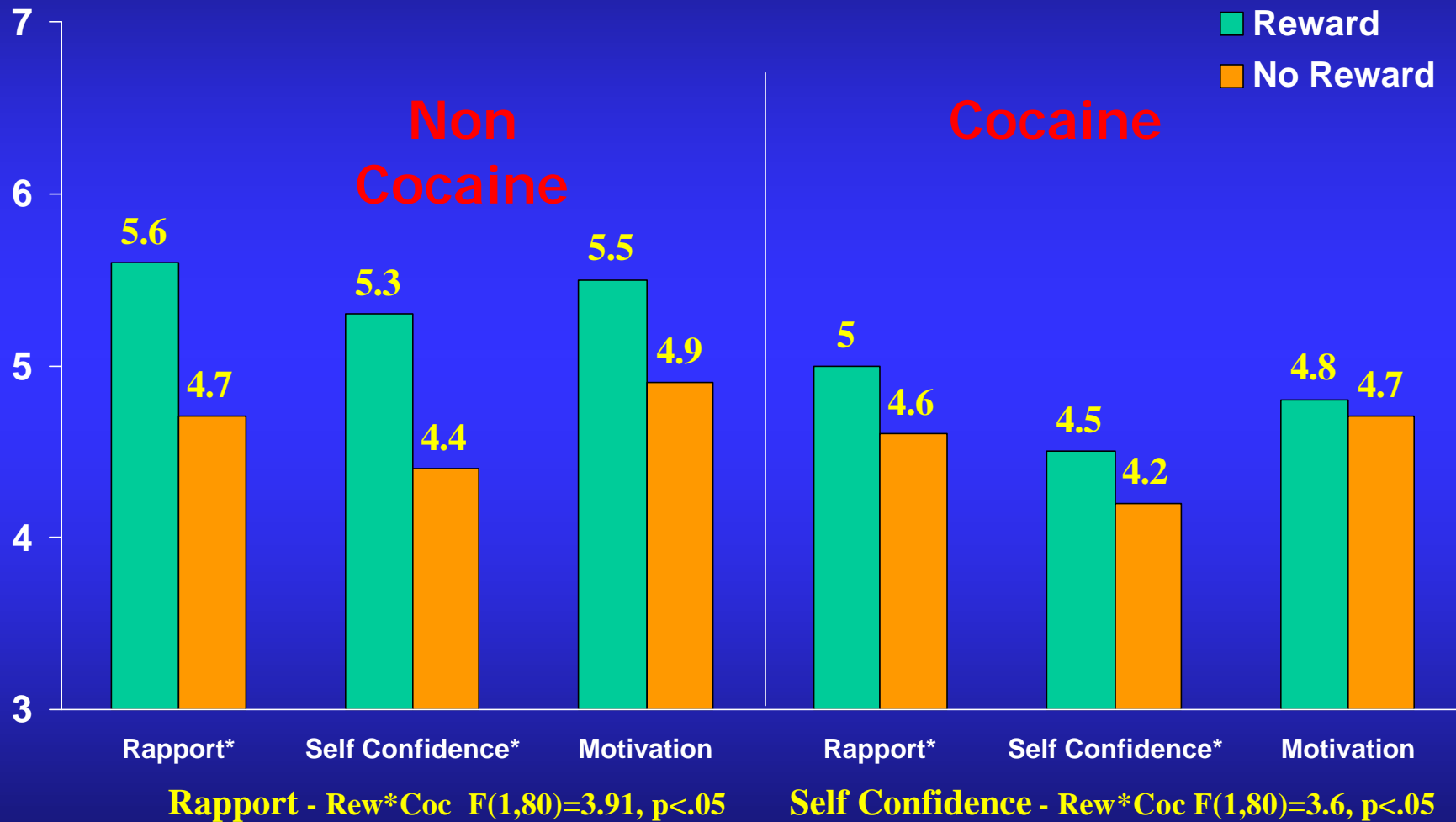
# Cocaine Use Before, During and After CM

% Cocaine Positive UA



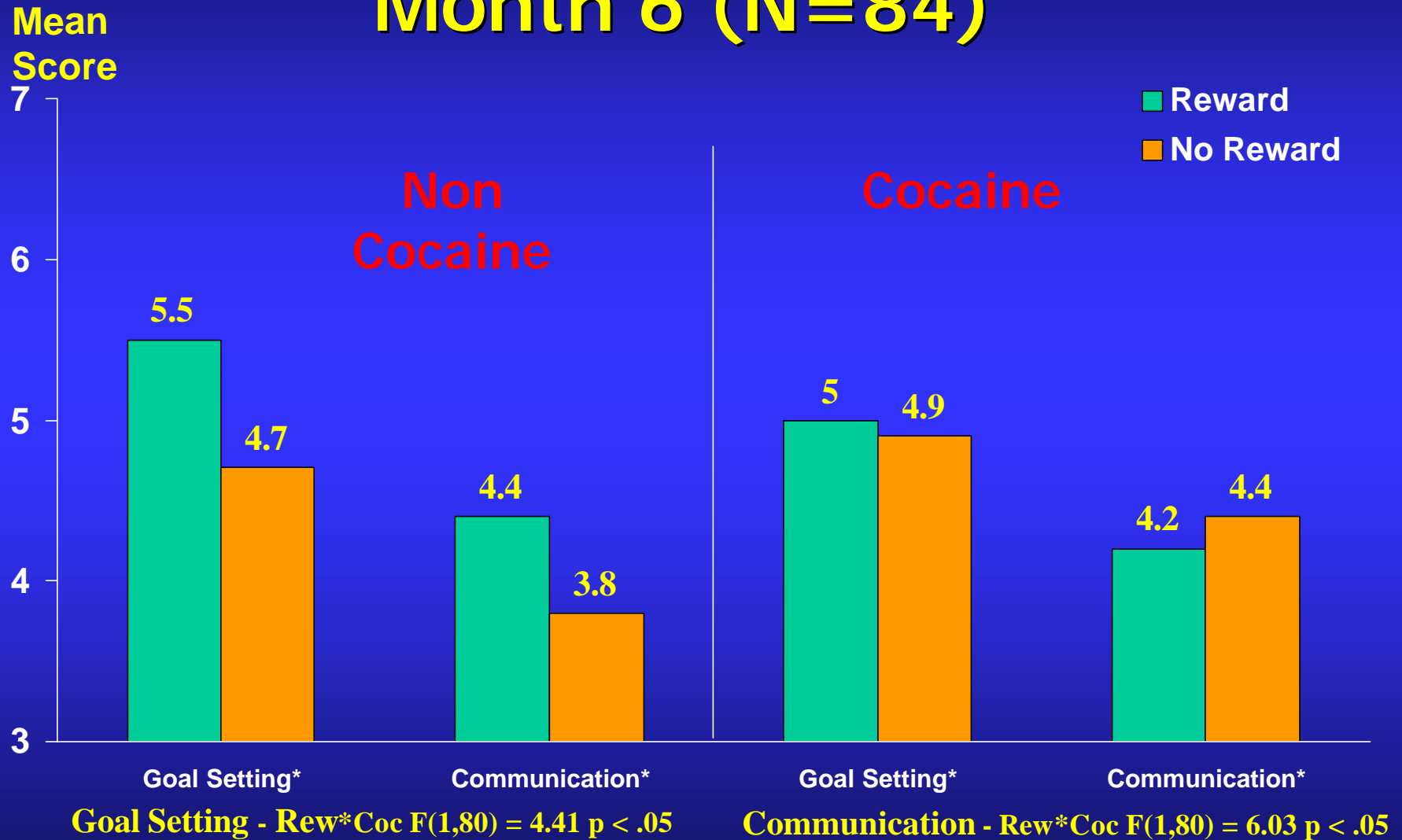
# Counselor Evaluations of Patients at 6 Months (N=84)

Mean Score



Rowan-Szal & Simpson: Contingency Management and Treatment Engagement (CPDD, Puerto Rico, June 2000)

# Reported Counseling Strategies Month 6 (N=84)



Rowan-Szal & Simpson: Contingency Management and Treatment Engagement (CPDD, Puerto Rico, June 2000)

# Summary

- ❖ **CM patients:**
  - ✓ Attended more individual sessions
  - ✓ Were less likely to have their methadone dose “held”
  - ✓ Had fewer cocaine-positive urines
- ❖ **Significant interactions between cocaine and CM were shown in engagement including:**
  - ✓ Rapport and self confidence
  - ✓ Counseling strategies (goal-setting and communication)
- ❖ **CM results were more pronounced for non-cocaine admissions, however, cocaine admissions receiving rewards had increased engagement.**