

*A BEHAVIORAL INTERVENTION FOR IMPROVING  
VERBAL BEHAVIORS OF HEROIN ADDICTS IN A  
TREATMENT CLINIC*

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Positively reinforcing appropriate behaviors improved verbal behaviors of opioid-dependent patients in a buprenorphine treatment clinic. During B phases of an ABAB design, clients received stickers for engaging in appropriate verbal or nonverbal behaviors. Each sticker provided a chance of winning \$25. No reinforcement was provided during the A phases. Appropriate verbal behaviors increased during reinforcement periods, and inappropriate verbal behaviors decreased.

DESCRIPTORS: drug abuse treatment, heroin, verbal behaviors, compliance, reinforcement, contingency management, buprenorphine

Drug abuse treatment clinics have formal mechanisms for dealing with patient complaints, such as private discussions with therapists who refer complaints to higher administrative levels. Although clients know these procedures, they frequently complain about clinic procedures, swear, and discuss illicit activities in clinic common areas. These behaviors can become so frequent that they interfere with the clinic environment. One approach that may be effective in handling these behaviors is to positively reinforce behaviors that may be incompatible with the negative ones (Parrish, Cataldo, Kolko, Neef, & Egel, 1986). Reinforcement of positive social behaviors may not only decrease the frequency of offensive behaviors

but also teach patients to learn more acceptable and effective social responses.

## METHOD

### *Participants and Setting*

All patients ( $N = 57$ ) enrolled in the Substance Abuse Treatment Center during a 12-week period were participants. An average of 25 ( $\pm 4$ ) participants attended the clinic each day during baseline, and an average of 24 ( $\pm 4$ ) attended daily during reinforcement phases. Average age was 37 years, 67% were male, and 87% were intravenous heroin users. Participants received counseling and buprenorphine (an alternative to methadone) or naltrexone (an opioid antagonist).

### *Recording Verbal Behaviors*

Appropriate verbal behaviors were greetings and positive appraisals. Inappropriate verbal behaviors were complaints about medication and clinic policies that were not directed through formal complaint channels, or swearing, yelling, and discussing illicit acts (see Table 1).

Prior to initiating the study, five coders were trained in observing and coding verbal

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We thank Melissa Richards for recording verbal behaviors, Dan Hammond for entering data, and Bruce Brown, Marne Moegelin, Tyler Wood, and Mark McGinley for assisting in reinforcing appropriate client behaviors. This research was supported by NIDA Grant 2R01DA06969, NIDA Training Grant 2T32DA07242, and NIAAA Grant 5P50-AA03510-19. Nancy M. Petry is now at the University of Connecticut.

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Table 1  
Examples of Appropriate and Inappropriate Verbal Behaviors

Appropriate verbal behaviors		
Greetings	Encouragement	Positive appraisals
Hello!	You can do it.	I like your new jacket.
Hi!	Don't worry, it'll be ok.	That's a great new car!
How are you?	If you stay busy, you'll do fine.	You look nice today.
Goodbye.	I heard you got a new job, congratulations!	It's good to see you smiling.
See you tomorrow.		The counselors here are great.
Have a nice day.	I heard they're hiring at my company, do you want to apply?	If you need help with that, John is really good at it.
Thanks.		The program has really helped me.
You're welcome.	Yeah, I had that problem once, too . . .	They can help you find a job or an apartment, too.
Please.	what helped me was to . . .	

behaviors. Two coders simultaneously but independently classified patient behavior for set periods of time. Greetings, explicit complaints, and swear words were the most frequent verbal behaviors and were coded with good agreement. Extended conversations about illicit acts were more difficult to code. We coded each inappropriate conversation as one inappropriate behavior for each of the active speakers and each swear word as an additional inappropriate verbal behavior. Thus, if 3 patients participated in a conversation about outrunning cops, three inappropriate behaviors would be coded, plus an additional inappropriate behavior for each swear word. After 4 weeks, Cronbach's alpha reliability coefficients (SPSS) exceeded .75 for coding frequencies of appropriate and inappropriate behaviors and increased during the 12-week study to at least .76.

Verbal behaviors were recorded on weekdays throughout predetermined 15-min intervals and for 2.5 hr on two weekends at each phase of the study. Recordings occurred in two waiting areas and were conducted by three individuals: one in the urinalysis waiting area (UA; four intervals per day), one in the dispensary (five intervals per day), and one in a separate office who coded dispensary conversations via a Fisher Price baby monitor (five intervals per day). For the pri-

mary and reliability coders, receivers were located in two separate offices, and the transmitter was located in the waiting area. The monitor had been installed independently of this project to dissuade drug deals, and posted signs indicated that conversations were being monitored; however, patients did not know when conversations were monitored.

#### *Reinforcement Procedure*

Three days prior to and throughout the reinforcement phases, posters were displayed stating that stickers would be distributed and money could be won by earning stickers. The posters also outlined behaviors that could earn stickers. No client declined to participate in the sticker program.

During the reinforcement phases, participants received stickers for engaging in appropriate verbal and nonverbal behaviors. Appropriate nonverbal behaviors included smiling, filling out forms on time, and waiting in the waiting room rather than loitering in hallways. Each time a client received a sticker, he or she was told why he or she received it. Clients who engaged in *any* inappropriate behaviors did not receive a sticker at that time. However, those clients could earn a sticker later that day. Clients could, and frequently did, earn more than one sticker per day. Each time a sticker was delivered, the staff member wrote the cli-

Table 1  
(Extended)

Inappropriate verbal behaviors		
Medication complaints	Clinic procedures	Others
This bup tastes like xxxx!	I hate this xxxxx place!	Swearing
How can we possibly swallow these xxxxxx horse pills?	They've been using that xxxx machine for years! Why can't they figure out how to make it work right?	Yelling at other clients or staff
My habit was bigger than his and I weigh more, so I should get more!	I've been waiting here all XXXXXXX day!	Discussing illicit activities (drugs, police chases, shoplifting, fights)
My legs ache, I vomited and had diarrhea all night because they never give you the right xxxx dose!	XXXXX! I was here first! I'm going next.	
What study are you in? Oh, that study sucks. All you get is placebos.	I said I didn't use, so I didn't xxxxx use! Those xxxx nurses chisel that needle in! My therapist sucks! Not this xxxxxx form again!	

ent's name on the backing of the sticker and placed it in a bowl. On Mondays, Wednesdays, and Fridays, one name was drawn. That individual was informed through his or her therapist that he or she had won the \$25 drawing.

In the UA, stickers were distributed by nine staff members when they walked through and noted a client engaging in appropriate clinic behaviors. Staff members were encouraged to distribute as many stickers as possible, with each having a goal of distributing at least five stickers per day. In the dispensary, stickers were distributed according to a fixed-interval 15-min schedule. A computer in the dispensary was programmed to sound softly every 15 min, and each time it sounded the next appropriate behavior that occurred was reinforced. If no patients were in the waiting area when the computer sounded, the next patient who came in and behaved appropriately was given a sticker. Logs were kept of the times and reasons for all stickers distributed.

### RESULTS AND DISCUSSION

Figure 1 shows the mean number of appropriate verbal behaviors per hour in the four recording locations across the 12-week study. In the UA, a mean of 7.5 appropriate verbal

behaviors occurred each hour in baseline. During the first sticker phase, appropriate comments increased to a mean of 9.5 per hour. When reinforcement was removed, appropriate verbal behaviors dropped to 4.5 per hour but returned to 9.4 per hour when stickers were reintroduced. In the dispensary, appropriate comments occurred at an average rate of 7.5 per hour during baseline but increased to over 31 per hour in the final week of the study. The conditions similarly influenced appropriate verbal behaviors collected over the monitor on both weekdays and weekends.

In the UA, an average of 11 inappropriate comments per hour were recorded during baseline (see Figure 2). During reinforcement periods, these comments decreased to an average of 6.9 per hour. In the dispensary, inappropriate verbal behaviors occurred at a relatively low rate in baseline (three per hour) and were not affected by the reinforcement phases. Those recorded over the monitor, however, were affected by the reinforcement phases. In baseline, inappropriate verbal behaviors averaged 10 per hour, and during sticker phases, these decreased to an average of 2.7 per hour. Weekend inappropriate verbal behaviors were similarly affected by the reinforcement phases.

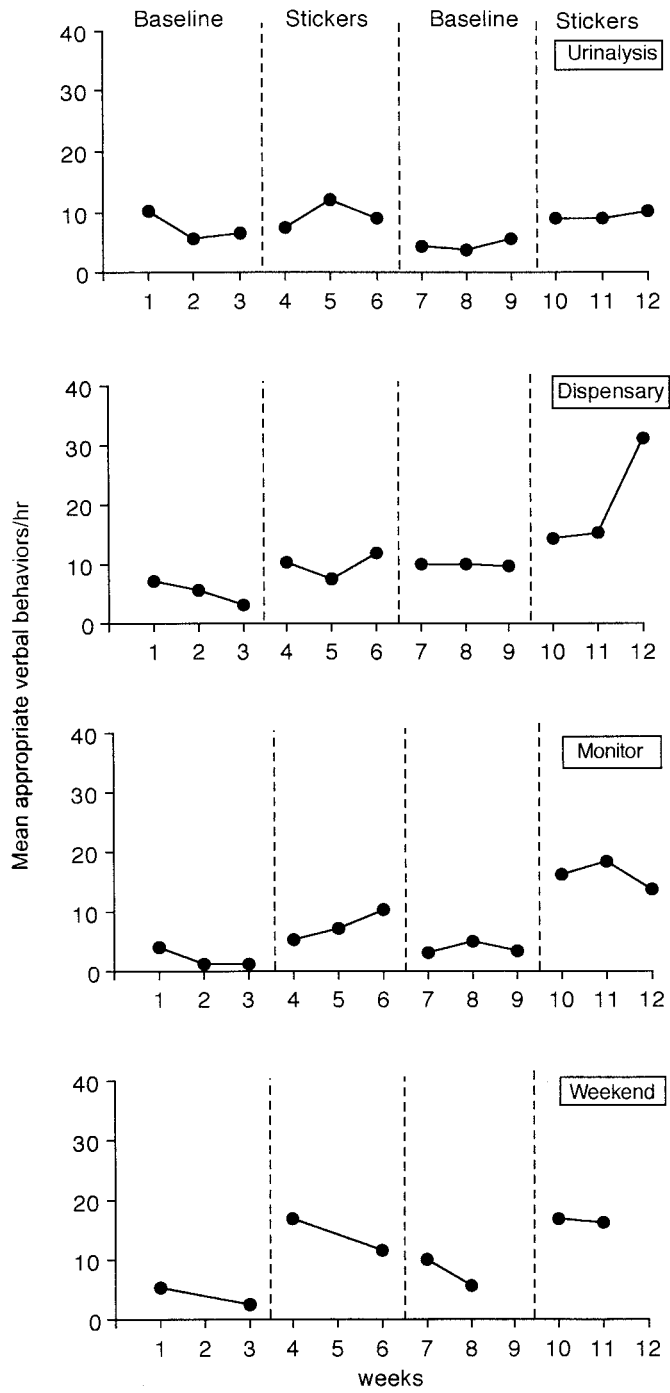


Figure 1. Mean appropriate verbal behaviors recorded per hour in the urinalysis area (top panel), in the dispensary (second panel), over the monitor (third panel), and on weekends (bottom panel).

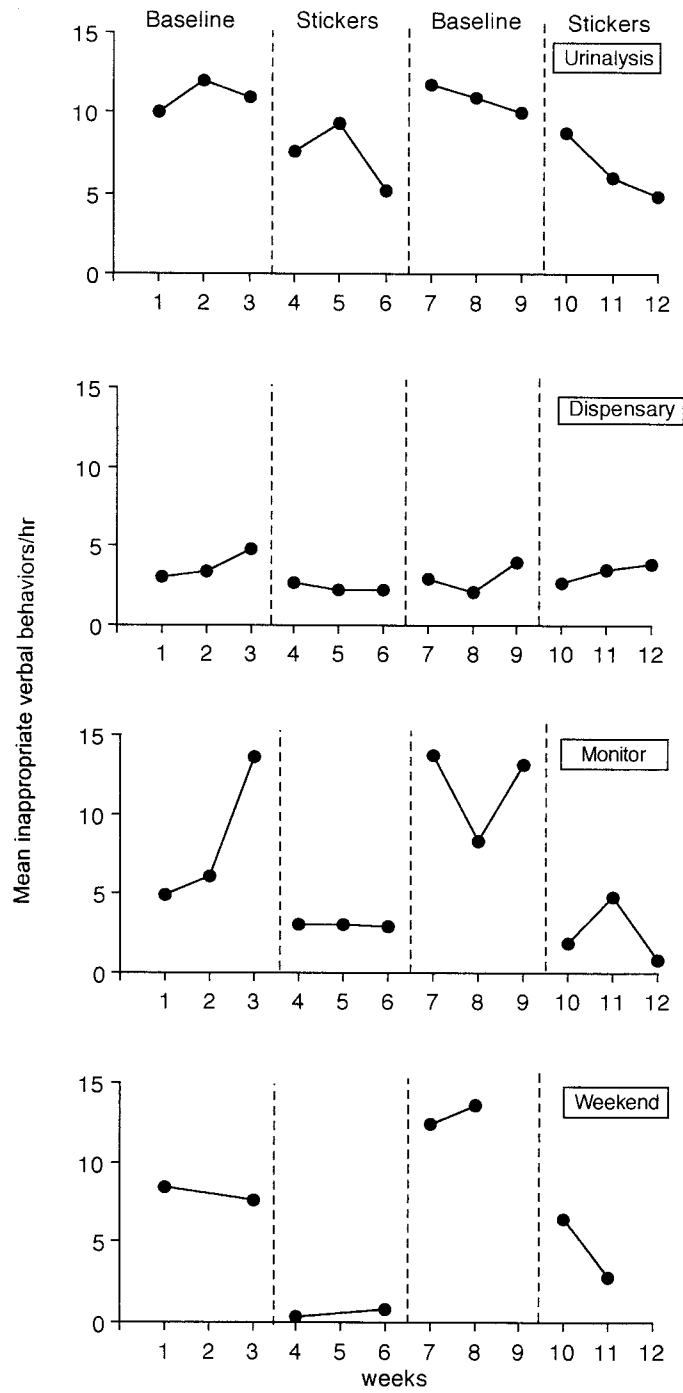


Figure 2. Mean inappropriate verbal behaviors recorded per hour in the urinalysis area (top panel), in the dispensary (second panel), and over the monitor on weekdays (third panel) and on weekends (bottom panel).

Table 2  
Frequency of Reinforced Behaviors

Appropriate behaviors	UA wait area	Dispensary wait area
Appropriate conversations	134	46
Waiting patiently	187	152
Quiet	133	141
Polite or nice greetings (hello, good bye, how are you, thanks, etc.)	244	296
Filling out program forms	14	60
Getting blood drawn	0	20
Not loitering	54	1
Arriving at clinic on time	14	1
Coming to treatment when at risk of withdrawing	0	2
Asking to see therapist	9	0
Smiling	13	1
Letting another patient go first	2	0
Reading	5	0
Practicing drug refusal skills with other patient	1	0
Cleaning up	4	0
Making a request appropriately (asked to use phone, to change dosing time)	15	2
Properly controlling anger	21	0
Making a verbal commitment to the treatment program	1	2
Finishing the study in which enrolled	0	1
Other/unmarked	14	2
Total	865	727

These data demonstrate that positively reinforcing appropriate clinic behaviors resulted in a near-doubling of the rate of appropriate verbal behaviors and also decreased inappropriate verbal behaviors by about 50%. Table 2 shows the frequency with which behaviors were reinforced. Examination of the logs of times in which stickers were distributed (data not shown) suggested that reinforcement was delivered in accordance with the schedules and frequencies described above. In no instance did we notice a staff member giving a sticker to a patient who was engaging in inappropriate behaviors.

Because reinforcement occurred only in the presence of certain staff members, appropriate comments might have changed only when such staff members were present, with these results reflecting stimulus control. However, data were often collected with no staff member present (by monitor), and ap-

propriate behaviors still increased during reinforcement conditions. Another potential criticism of the present study is that the reinforcement procedure may have been used simply to quiet patients (e.g., Winett & Winkler, 1972). Although quiet behaviors were often reinforced, polite behaviors ("hello," "thank you") were the most frequently reinforced behaviors.

These data suggest that positive reinforcement techniques can improve clients' behavior and that these changes may benefit both patients and staff. Informal observations suggested that patients enjoyed the reinforcement procedures; they wore their stickers on their shirts and looked forward to the drawings. Future study may examine whether the procedure alters patients' satisfaction with treatment programs or retention in treatment. By teaching staff members to positively affect patient behavior, job satisfaction by clinic staff may also increase.

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*Received April 10, 1997*

*Initial editorial decision July 19, 1997*

*Final acceptance January 8, 1998*

*Action Editor, Kimberly C. Kirby*