



# AOTA Evidence Briefs

## Substance-Use Disorders

*\*A product of the American Occupational Therapy Association's Evidence-Based Literature Review Project*

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## **Twelve-step treatment, cognitive-behavioral treatment, and a combination of the two all may be effective in changing proximal outcomes**

Finney, J. W., Noyes, C. A., Coutts, A. D., & Moos, R. H. (1998). Evaluating substance abuse treatment process models: I. Changes on proximal outcome variables during 12-step and cognitive behavioral treatment. *Journal of Studies on Alcohol*, 59, 371–380.

#### **Level: IIA2a**

Non-randomized control trial, 2 groups, 20 or more participants per condition, moderate internal validity, high external validity

#### **Why research this topic?**

Few studies have explored the processes that underlie the effects of different treatments, and none have investigated whether changes in “proximal outcomes” during treatment occur more frequently with the 12-step treatment common to Alcoholics Anonymous (AA), Narotics Anonymous (NA), and Cocaine Anonymous (CA), than with other forms of treatment “Proximal outcomes” are “the specific changes in attitudes, beliefs and behaviors that . . . patients are supposed to undergo or achieve” en route to “ultimate outcomes,” such as reduced substance use” (p. 371).

#### **What did the researchers do?**

Finney, Noyes, Coutts, and Moos (1998), of the Veterans Affairs Palo Alto Health Care System and Stanford University (Palo Alto, California), designed a study to determine whether people who receive traditional 12-step treatment change more on proximal outcomes than people who receive cognitive-behavioral treatment. “Cognitive-behavioral treatment” views substance abuse as functionally related to unhealthy routines in a person’s life. It emphasizes overcoming skills deficits and increasing the person’s ability to cope with situations that commonly precipitate relapse.

The researchers recruited participants for their study from 4,193 people admitted for treatment at 15 substance abuse treatment programs located at 13 Veterans Affairs medical centers. The criterion for eligibility was that participants be men in the standard treatment program. Four hundred ninety-four people declined, leaving a starting sample of 3,699. Of these, 471 did not complete the discharge form. The average age of the 3,228 men who completed the study was 43 years. Forty-eight percent were Black, 46% White, and 6% other.

The researchers classified the 15 programs in which the participants were being treated as 12-step (5), cognitive-behavioral (5), or a combination of 12-step and cognitive-behavioral (5).

The following (proximal) outcome areas were of interest to the researchers:

#### *12-Step Treatment*

Three cognitive variables: *disease model beliefs* (as measured by selected items from the Disease Model Beliefs subscale of the Understanding of Alcoholism Scale); *acceptance of an alcoholic or addict identity* (as indicated

by a participant's response to the question "Do you consider yourself to be an alcoholic [addict]?" and *commitment to an abstinence goal* (as indicated by a participant's affirming or not affirming that he or she wanted "to achieve total abstinence and never use alcohol or drugs again" (p. 373)

Five behavioral variables: *attendance at 12-step meetings*; *having a sponsor in AA, NA, or CA*; *having friends who are active in AA, NA, or CA*; *reading 12-step materials*; and *taking the 12 steps* (all 5 as measured by questions posed to the participants).

### *Cognitive–Behavioral Treatment*

Eight cognitive variables: *self-efficacy* (as measured by 14 items from the Situational Confidence Questionnaire); "*positive substance use expectancies*" (pleasurable consequences of continuing to use alcohol or drugs, as measured by 12 items from the Alcohol Expectancy Questionnaire); "*positive outcome expectancies*" (desirable consequences of quitting substance use, as measured by 12 items from the Outcome Expectancy Scale); and *self-liberation*, *stimulus control*, *counterconditioning*, *self-reevaluation*, and *reinforcement management* (all as measured by a modified form of the Processes of Change scale);

Four behavioral variables: *positive reappraisal*, *problem-solving*, *cognitive avoidance*, and *emotional discharge* (as measured by 4 subscales of the Coping Responses Inventory)

Measures were taken and questions posed before treatment began and at discharge. (Average lengths of stay were 24.0 days in 12-step programs, 24.5 days in cognitive–behavioral treatment programs, and 23.4 days in combined programs.)

### **What did the researchers find?**

Participants in the 12-step treatment **significantly** (see *Glossary*) improved on all the proximal outcomes specific to their kind of treatment except one, commitment to an abstinence goal. They also significantly improved on all the proximal outcomes specific to cognitive–behavioral treatment except one, positive outcome expectancies.

Participants in the cognitive–behavioral treatment significantly improved on all the proximal outcomes specific to cognitive–behavioral treatment. They also significantly improved on the five behavioral variables specific to 12-step treatment. However, on the cognitive variables, they showed significantly less endorsement of the disease model beliefs, significantly less commitment to abstinence as a goal, and no change in terms of accepting an alcoholic or addict identity.

Participants in the combined treatment showed a pattern similar to that of participants in the 12-step treatment, except that they also failed to improve significantly on positive substance use expectancies.

Disease model beliefs increased significantly less among participants in the cognitive–behavioral treatment than among participants in either the 12-step or the combined treatment. Significantly more participants in the 12-step treatment accepted alcoholic and addict identities than participants in the other treatments, and significantly more in the combined treatment accepted them than in the cognitive–behavioral treatment. Participants in the cognitive–behavioral treatment were significantly less committed to abstinence and attended significantly fewer 12-step meetings than participants in the other two treatments.

Participants in the 12-step treatment acquired a sponsor in significantly more instances, made significantly more friends in 12-step groups, and read significantly more 12-step materials than participants in the other two groups. Participants in the combined treatment read significantly more 12-step materials than participants in the cognitive–behavioral treatment, and they took significantly more of the 12 steps than the latter group.

The cognitive–behavioral and combined treatment groups increased their use of self-liberation processes significantly more than the 12-step treatment group did. The 12-step and combined treatment groups increased their use of stimulus control significantly more than the cognitive–behavioral treatment group. The 12-step treatment group increased its use of counter conditioning significantly more than the cognitive–behavioral and combined treatment groups. The combined treatment group increased its use of self-reevaluation significantly more than the cognitive–behavioral treatment group. The 12-step treatment group improved its use of reinforcement management significantly more than the combined treatment group, and it made significantly greater gains in problem-solving than the cognitive–behavioral treatment group.

## What do the findings mean?

For therapists and other providers, the findings suggest that proximal outcomes thought to be specific to cognitive-behavioral treatment are actually general proximal outcomes of both 12-step and cognitive-behavioral treatment. They also suggest that all three treatments are effective in changing proximal outcomes. More research is needed—and is in progress—on the relationship between proximal outcomes and long-term outcomes.

## What are the study's limitations?

The study has four limitations. First, it did not assess all the relevant proximal outcomes for the two modes of treatment. For example, it omitted spirituality as a variable in 12-step treatment and functional analyses as a variable in cognitive-behavioral treatment.

Second, the domains covered by the two modes of treatment were not equivalent. Some 12-step outcomes assessed specific behaviors, whereas cognitive-behavioral treatment outcomes were more general.

Third, the researchers did not randomly assign participants to treatments. That diminishes the confidence that the consumer can have that the intervention actually produced the outcome.

Fourth, the results may not be generalizable beyond the study population: male veterans.

## GLOSSARY

**significance (or significant)**—A statistical term that refers to the probability that the results obtained in the study are not due to chance but to some other factor (e.g., the treatment of interest). A significant result is likely to be generalizable to populations outside the study.

Significance should not be confused with *clinical effect*. A study can be statistically significant without having a very large clinical effect on the sample. For example, a study that examines the effect of a treatment on a client's ability to walk may report that the participants in the treatment group were able to walk significantly longer distances than those in the control group. However, after reading the study one may find that the treatment group was able to walk, on average, 6 feet, whereas the control group was able to walk, on average, 5 feet. Although the outcome may be statistically significant, a clinician may not feel that a 1-foot increase will make his or her client functional.

■ Terminology used in this document is based on two systems of classification current at the time the evidence-based literature reviews were completed: *Uniform Terminology for Occupational Therapy Practice—Third Edition* (American Occupational Therapy Association [AOTA], 1994) and *International Classification of Functioning, Disability and Health (ICIDH-2)* (World Health Organization [WHO], 1999). More recently, the *Uniform Terminology* document was replaced by *Occupational Therapy Practice Framework: Domain and Process* (AOTA, 2002), and modifications to *ICIDH-2* were finalized in the *International Classification of Functioning, Disability and Health* (WHO, 2001).

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For more information about the Evidence-Based Literature Review Project, contact the Practice Department at the American Occupational Therapy Association, 301-652-6611, x 2040.



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