

AOTA Evidence Briefs Substance-Use Disorders

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

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Relapse prevention has greater effect on improving psychosocial adjustment than on reducing substance use

Irvin, J. E., Bowers, C. A., Dunn, M. E., & Wang, M. C. (1999). Efficacy of relapse prevention: A meta-analytic review. *Journal of Consulting and Clinical Psychology*, 67, 563–570.

Level: I Meta-analysis

Why research this topic?

Relapse prevention has been widely adopted as a treatment for substance abuse. It helps the client identify coping strategies to use in high-risk situations, enhances the client's belief in his or her ability to manage such situations without resuming substance use, aims at eliminating myths associated with substance use, teaches strategies for managing potential lapses, teaches "cognitive restructuring" (challenging negative thinking that might lead to decreased self-confidence), addresses self-control strategies, stimulus control techniques, and urge management techniques. However, studies of the efficacy of relapse prevention have produced an inconsistent picture.

What did the researchers do?

Irvin, Bowers, Dunn, and Wang (1999), of the University of Central Florida (Orlando), conducted a **meta-analysis** (see *Glossary*) "to quantify the effect of [relapse prevention] on substance use behavior and overall **psychosocial** (see *Glossary*) adjustment and to identify moderator variables that may relate to heightened or attenuated effectiveness of [relapse prevention]" (p. 563). "Moderator variables" are variables that mediate between treatment and outcome. The seven moderator variables in this study were class of substance use disorder (alcohol, multiple substances, cocaine, or smoking), treatment modality (individual or group), treatment setting (inpatient or outpatient), adjunct use of medication, type of outcome measure used to evaluate relapse prevention (role-play and problem-solving tests; and self-report, biochemical measures, or self-report validated by biochemical measures), comparative effectiveness of relapse prevention (measured using uncontrolled pre- and post-tests, wait-list or no-additional-treatment controls, other active interventions, or discussion controls; and compared with physician advice or educational groups), and effectiveness at various lengths of follow-up (immediately after treatment, 1 month later, 3 months later, 6 months later, or 1 year later).

To identify possible studies, the researchers searched computer databases, reviewed reference lists, and contacted prominent researchers to obtain unpublished data. To be included in the analysis, studies had to (1) identify the treatment approach as relapse prevention or an approach consistent with that described by G. A. Marlatt and J. R. Gordon, (2) focus on the effectiveness of relapse prevention, (3) compare relapse prevention with either a control approach or a contrast approach including uncontrolled pre-post tests, and (4) measure substance use and/or psychosocial adjustment. Twenty-six studies conducted between 1978 and 1995 met the criteria. Across the 26 studies, 9,504 people (gender and average age not reported) participated.

The researchers were interested in the following outcome areas: *substance use* (as measured by self-reports, self-reports verified by biochemical tests, or role-play or problem-solving tests); and *overall psychosocial adjustment* (as measured by various instruments across the 26 studies).

What did the researchers find?

The overall **effect size** (see *Glossary*) of relapse prevention was .14. Its effect size in reducing substance use was .14, in improving overall psychosocial adjustment .48. An effect size of 0.2 is small, of 0.5 is moderate, and of 0.8 or more is large.

Effect sizes for class of substance use disorder were alcohol, .37; multiple substances, .27; cocaine, – .03; and smoking, .09. The differences between effect sizes for alcohol and smoking were **significant** (see *Glossary*), as were the differences between effect sizes for multiple substances and smoking.

Effect sizes for treatment modality were individual, .10; group, .16. The difference was **not significant** (see *Glossary*).

Effect sizes for treatment setting were inpatient, .11; outpatient, .16. The difference was not significant.

Effect sizes for adjunct use of medication were without adjunct use, .09; with it, .48. The difference was significant.

Effect sizes for type of outcome measure were for role-play and problem solving, .64 and for self-report, .17; biochemical measures, .12; and self-report verified by biochemical measures, .09. The difference between self-report and biochemically verified self-report was significant.

Effect sizes for comparative effectiveness were for uncontrolled pre- and post-tests, .59; wait-list or no-additional-treatment controls, .11; other active interventions, – .19; discussion controls, .17; physician advice, .33; and educational groups, .20.

Effect sizes for length of follow-up were immediately after treatment, .27; 1 month later, .20; 3 months later, .19; 6 months later, .19; and 1 year later, .09.

What do the findings mean?

For therapists and other providers, the findings suggest that as a treatment approach, relapse prevention is better at improving psychosocial adjustment than at reducing substance use. Further, treatment effects are strong and reliable for alcohol use and use of multiple substances, not so for smoking. "Medication may contribute substantially to enhancing treatment effectiveness" (p. 569). Additionally, relapse prevention demonstrates "a high level of efficacy when evaluated using pretest–posttest designs and when compared with physician advice and more moderate efficacy when compared with psychoeducational groups or discussion controls" (p. 569). Further, "effect sizes for [relapse prevention] were strongest when outcomes were evaluated immediately following the completion of treatment and tended to be weaker (albeit significant) when measured at increased intervals after treatment" (p. 569).

What are the study's limitations?

The study has four limitations. First, the frequency and the duration of treatment were not reported. Second, "the differential effectiveness of [relapse prevention] across class of substance use disorders complicated the findings. Unfortunately, there was an insufficient number of studies to adequately assess the impact of each moderator within each class of substance use disorders and other potentially interesting moderators could not be examined" (p. 569). Third, it is not clear what aspect of relapse prevention is effective. Fourth, few of the studies in the analysis had 1-year follow-up data, and 0 had follow-up data beyond 1 year.

GLOSSARY

effect size (Cohen's r)—An effect size is a measure of clinical significance. It provides information about the magnitude of effect of the treatment. Although related to significance, it is not as influenced by the size of the sample. Therefore, it is possible to have an outcome on which the treatment had a large effect (e.g., the treatment group improved a lot more than the control group) and still have a nonsignificant result. If the results have a large effect but no significance, then this effect may be sample specific and not generalizable outside the study. There are many types of effect sizes. What is reported here is Cohen's r, which can be interpreted in a manner similar to a Pearson's correlation coefficient:

Effect size r Size of the effect

< 0.99	Negligible
0.10 - 0.29	Small
0.30 - 0.49	Medium
>0.50	Large

Cohen, J. (1977). Statistical power analysis for behavioral sciences. New York: Academic Press.

meta-analyses—A specific subset of systematic review that statistically combines data from many studies to find a common effect. The meta-analysis' power comes from the ability to statistically digest many studies and emerge with a final assessment of their common effect.

nonsignificant (or no significance)—A statistical term that refers to study findings that are likely to be due to chance differences between the groups rather than to other factors (e.g., the treatment of interest). A nonsignificant result is not generalizable outside the study. Like significance, a nonsignificant result does not indicate the clinical effect. Often studies will show nonsignificant results, yet the treatment group's mean will be better than the control group's. This is usually referred to as a trend in the right direction. Because significance is closely determined by sample size, nonsignificant results would often become significant if the sample size were increased.

psychosocial—"Involving both psychological and social aspects" (*Merriam Webster's Collegiate Dictionary*, 10th ed., s.v.).

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* (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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