AOTA Evidence Briefs
Substance-Use Disorders

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

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Matching treatments to personal attributes of clients appears to have little empirical validity

Project MATCH Research Group. (1997). Matching alcoholism treatments to client heterogeneity: Project MATCH posttreatment drinking outcomes. *Journal of Studies on Alcohol*, *58*, 7–29.

Level: IA1a
Randomized control trial, 20 or more participants per condition, high internal validity, high external validity

Why research this topic?

A 1990 review of research on outcomes of treatment for alcoholism suggested that rather than ask whether treatment works at all or which kind of treatment works best, researchers should investigate which kinds of treatments work best for individuals with certain characteristics and needs.

What did the researchers do?

Under the auspices of the National Institute on Alcohol Abuse and Alcoholism, the Project MATCH Research Group (1997) initiated Project MATCH (Matching Alcoholism Treatment to Client Heterogeneity), a study to assess the benefits of matching people with alcohol dependence to three treatments according to various personal attributes. The project involved two parallel studies: one of outpatients and one of patients receiving aftercare after inpatient or day hospital treatment.

For the outpatient arm of the study, the researchers recruited participants through five clinical research units located in Albuquerque; Buffalo; Farmington, Connecticut; Milwaukee; and West Haven, Connecticut. They conducted a screening interview with 2,193 potential participants. Of these, 49 declined to participate, and another 1,192 were ineligible. The resulting sample was 952, of whom 688 were men and 264 women. Their average age was 38.9 years.

For the aftercare arm of the study, the researchers recruited participants through five clinical research units located in Charleston, South Carolina; Houston; Milwaukee; Providence, Rhode Island; and Seattle. They conducted the screening interview with 2,288 potential participants. Of these, 410 declined to participate, and 1,104 were ineligible. The resulting sample was 774, of whom 619 were men and 155 women. Their average age was 41.9 years.

The researchers then randomly assigned the participants in each arm of the study to one of three treatments, all selected for their potential match with participants' characteristics: cognitive–behavioral coping skills therapy (CBT), motivational enhancement therapy (MET), and 12-step facilitation (TSF). Therapists delivered the treatments individually over 12 weeks, CBT and TSF once a week for 1 hour at a time, MET in the 1st, 2nd, 6th, and 12th weeks, also for 1 hour at a time.

CBT "was based on social learning theory and viewed drinking behavior as functionally related to major problems in an individual's life, with emphasis placed on overcoming skills deficits and increasing the ability to cope with situations that commonly precipitate relapse" (p. 13). MET "was based on principles of motivational psychology and focused on producing internally motivated change. [It] was not designed to guide the client, step by step, through recovery, but instead employed motivational strategies to mobilize the individual's own resources" (p. 13). TSF "was

grounded in the concept of alcoholism as a spiritual and medical disease with stated objectives of fostering acceptance of the disease of alcoholism, developing a commitment to participate in AA [Alcoholics Anonymous] and beginning to work through the 12 steps" that are part of the AA program of recovery (p. 13).

The researchers hypothesized that the following kinds of personal attributes would interact differently with the treatments to affect outcomes:

- Alcohol involvement (as measured by the Alcohol Use Inventory)
- Cognitive impairment (as measured by the Trails A and B of the Shipley Institute of Living Scale, and the Symbol-Digit Modalities)
- Conceptual level (as measured by the Paragraph Completion Method)
- Gender
- Meaning seeking (as measured by the Purpose in Life Scale and the Seeking of Noetic Goals test)
- Motivation (as measured by a subset of URICA [University of Rhode Island Change Assessment])
- Psychiatric severity (as measured by the Psychiatric Severity composite score of the Addiction Severity Index)
- "Sociopathy" (antisocial behavior) (as measured by the Socialization Scale of the California Psychological Inventory)
- Support for drinking (as measured by the Important People and Activities Instrument)
- "Typology" (predisposition to alcohol dependence combined with actual severity of negative outcomes associated with alcohol) (as indicated by a composite score derived from 5 instruments).

The outcome areas of interest were *percentage of days abstinent* (a measure of drinking frequency) and *average number of drinks per drinking day* (a measure of drinking severity) (both as measured by Form 90, "an interview procedure combining calendar memory cues from time-line follow-back methodology . . . and drinking pattern estimation procedures from the Comprehensive Drinker Profile"—p. 11). Measures were taken, variously across the instruments, before the study began, after treatment ended (3 months), and at 6, 9, 12, and 15 months after the study began.

What did the researchers find?

Participants in both the outpatient and the aftercare arm of the study showed substantial positive changes in percentage of days abstinent and average number of drinks per drinking day from the initial measurement to every other point of measurement. The outpatient participants improved their abstinence from about 28% of the days per month before the study to about 80% 15 months later. Comparable proportions for the aftercare participants were about 20% and 90%.

For participants in both arms, there were no clinically meaningful differences in outcome among the 3 treatments.

For participants in the outpatient arm, only one match between personal attributes and treatments was **significant** (see *Glossary*): the lower the participants' psychiatric severity, the higher their percentage of abstinent days when they were treated with TSF rather than CBT. For participants in the aftercare arm, interactions between personal attributes and treatments were **not significant** (see *Glossary*) for percentage of days abstinent or average number of drinks per drinking day.

Regarding the relationship between personal attributes and outcomes, for participants in the outpatient arm, the more motivated the participant was before the study began and the less social support he or she had for drinking, the higher the percentage of abstinent days and the lower the average number of drinks per drinking day. For participants in the aftercare arm, "only gender predicted the percent days abstinent over the entire follow-up period, with male subjects having fewer abstinent days" (p. 20). Alcohol involvement, gender, and social support for drinking predicted average number of drinks per drinking day in the follow-up period, with participants with higher alcohol involvement, male participants, and participants with more social support for drinking consuming more drinks per drinking day, on average.

What do the findings mean?

For therapists and other providers, the findings contain little evidence to support widely held views of the potential value of matching clients to treatments. In this regard, they suggest only that there may be some advantage to choosing TSF for outpatient clients who exhibit no psychopathology.

The findings also suggest that "participation in any of [the 3] treatments will be associated with substantial and sustained changes in drinking" (p. 23). Further, they suggest that MET, a 4-session treatment over 12 weeks, can be used instead of CBT or TSF, both of which were delivered in weekly sessions for 12 weeks. MET may be more cost-effective.

What are the study's limitations?

The study has no threats to internal validity.

GLOSSARY

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.

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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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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