

AOTA Evidence Briefs

Children With Behavioral **and Psychosocial Needs**

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

PSYCH 14

Trainable mentally retarded children can learn basketball skills and sportsmanship, and generalize the learning to classroom and home

Gençöz, F. (1997). The effects of basketball training on the maladaptive behaviors of trainable mentally retarded children. *Research in Developmental Disabilities*, 18, 1–10.

Level: IB1b

Randomized controlled trial, 2 groups, fewer than 20 participants per condition, high internal validity, moderate external validity.

Why research this topic?

Research has demonstrated that physical activity has a beneficial effect on the physical condition and the psychological well-being of people with mental retardation. Some researchers suggest that exercise training might be more practical in promoting adaptation than the programs typically used in institutions that care for children with mental retardation that do not focus on increasing the level of social engagement.

What did the researchers do?

Gençöz (1997), of Middle East Technical University (Ankara, Turkey), hypothesized that a physical activity like basketball would accelerate adaptation by trainable children who were mentally retarded, and he designed a study to test the hypothesis.

Twenty-six participants in the study were chosen from a group of 100 students in a state school whose parents, teachers suggested, would probably consent to their children's participation. The researcher screened the 26 using Portage, an instrument for evaluating skills in six developmental areas. The 20 students with the highest scores became the study's participants. The average age was 12.1 years. The researcher administered the Peabody Picture Vocabulary Test to all the participants and used the scores to pair them according to their chronological and receptive language ages, gross motor abilities, and sex. He then randomly assigned one of each pair to the experimental group or the **control group** (see *Glossary*).

Both groups received training for 40 minutes a day, 3 times a week, for 7 weeks. The experimental group participated in the Sports Skill Instructional Program (SSIP), published by Special Olympics, Inc., which is designed to teach basketball to children with mental retardation. It focuses on basketball skills, the game's rules, sportsmanship, and some team tactics.

The participants in the control group simply played with light, soft balls in any way they wanted to. An instructor was present but did not become involved in the play and did not give the participants any specific instructions.

Outcome areas of interest were *maladaptive behavior in the home* (as measured by the American Association on Mental Deficiency's Adaptive Behavior Scale [ABS], Part 2); *maladaptive behavior in the classroom* (as measured by the Classroom Behavior Checklist [CBC]); and *level of functioning in basketball skills* (as measured by the Sports Skills Assessment [SSA; part of the SSIP]). Measures were taken before the intervention, immediately after the intervention, and 45 days after the intervention.

What did the researchers find?

On the ABS, before the intervention, the experimental group had **significantly** (see *Glossary*) better scores than the control group. The researcher "controlled" (experimentally adjusted) for these differences in the subsequent assessments. Immediately after the intervention and 45 days after it, the experimental group again had significantly better scores on this measure.

On the CBC, before the intervention, the groups showed no differences. However, on both assessments following the intervention, the experimental group had significantly better scores.

On the SSA, a pattern similar to that on the CBC emerged: **no significant** (see *Glossary*) differences before the intervention but significant differences at both assessments following the intervention, favoring the experimental group.

What do the findings mean?

For therapists and other providers, the findings suggest that trainable children with mental retardation, who are in an institutional setting, can learn the skills and rules of basketball, and sportsmanship. Further, the findings suggest that the learning will generalize to the classroom and the home, manifested in less maladaptive behavior.

What are the study's limitations?

The strict criteria for selection of participants may limit the generalizability of the findings to other populations and settings.

Glossary

control group—A group that received special attention similar to that which the treatment group received, but did not receive the treatment.

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 able to be generalized 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 able to be generalized 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.

This work is based on the evidence-based literature review completed by Shari Nudelman, OTR/L, and Marian Arbesman, PhD, OTR/L. 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.

