

Training on Health Problem Solving Tasks

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Running Head: TRAINING ON PROBLEM SOLVING TASKS

Abstract

Each day older adults are required to engage in problem solving tasks related to their daily living. The purpose of this study was to examine whether a brief educational training program was effective in improving older adults' ability to comprehend and use documents in the nutrition and health domains. One question addressed in the study was whether training effects would be specific to the substantive domains (i.e., nutrition and health) which were the focus of training. A second question examined whether training effects would generalize to other domains such as finance and transportation. Study findings showed a trend ($p < .053$) toward a training effect in the nutrition domain, but no significance in any of the other domains, including health.

Training on Health Problem Solving Tasks

Each day older adults are required to engage in problem solving tasks related to their daily living. Competence to make appropriate decisions is particularly critical in certain task domains that are considered essential in order to live independently in our society. Adequate functioning in seven task domains has been identified as critical for independent living: medication usage, financial management, shopping for necessities, phone usage, transportation, meal preparation and nutrition, and household maintenance (Lawton and Brody, 1969).

The purpose of this study was to examine whether a brief educational training program was effective at improving older adults' ability to comprehend and use documents in the nutrition and health domains. Since at pre- and posttest subjects were assessed on their ability to solve problems involving the seven distinct task domains described above, one question addressed in the study was whether training effects would be specific to the substantive domains (i.e., nutrition and health) which were the focus of training. A second question examined whether training effects would generalize to other domains such as finance and transportation.

Method

Sample. The sample consisted of 49 community-dwelling older adults, including 13 males and 36 females, living in Seattle, Washington. The mean

age of the sample was 73.9 ($SD = 6.75$; $Range = 61-89$ years). Mean educational level was 14.3 ($SD = 3.06$; $Range = 6-22$ years). The average income was \$21,000 ($Range = \$4,000-50,000$). Subjects rated their overall health, eyesight, and hearing on a 6-point Likert scale (1= very good; 6= very poor); on average, ratings on all three variables were "moderately good" or "good" ($M = 2.2$; $SD = 1.09$; $M = 2.7$; $SD = 1.05$; $M = 2.42$; $SD = 1.09$, respectively). Subjects were randomly assigned to a treatment ($N = 30$) and control group ($N = 19$). There were no significant differences on age, education, or health ratings found between training and control groups (Training: Age = 74.0; Education = 14.3; Health = 2.23; Control: Age = 73.8; Education = 14.3; Health = 2.1).

Procedure. The study involved a pretest-posttest control group design. Subjects participated in a two-hour pretest in which they were administered the Everyday Problems Test (Willis & Marsiske, 1993) and a battery of psychometric ability measures; the same measures were used for the posttest. The training group received 6 one-hour training sessions conducted in the subjects' homes.

Training program. The training focused on subjects' ability to comprehend and use printed documents in the nutrition and health domains. The printed stimuli used in training involved the three most common types of documents: directions, charts/schedules, and forms. There were two

training sessions per document type; an instruction booklet was developed for each of the six sessions. The subject was presented with a document (e.g., prescription drug label) and a nutrition or health-related problem related to the document (e.g., "How many days will this prescription last?"). The trainer guided the subject in the use of strategies for solving these problem tasks. Feedback was given on correct answers to the problems.

Measures. At pre- and posttest, subjects were administered the Everyday Problems Test (Willis & Marsiske, 1993). The EPT is an 84-item measure assessing subjects' ability to use printed documents for solving problems related to the seven domains considered essential for independent living (medications, nutrition/meal preparation, shopping, finances, phone, household, and transportation). The measure involves seven scales, consisting of 12 items each, representing each of the domains. Subjects were also administered a psychometric ability battery.

Subject EPT scores were computed as item response theory (IRT) person ability values. IRT values for the EPT had been previously computed on a sample of 421 elderly.

Results

Training effects were examined via a series of MANOVA repeated measures analyses (2 Group x 2 Occasion x 7 Scale), with the EPT scale scores as repeated measures. Significant main effects were found for

Occasion ($F = 32.65$; $p < .001$) and Scale ($F = 7.75$; $p < .001$). There was a trend for the Occasion x Scale interaction ($F = 1.77$; $p < .11$). Post hoc analyses of the Group x Occasion x Scale interaction indicated a trend toward significance for the nutrition domain ($F = 3.91$; $p < .053$). No significant training effects were found for the EPT scales representing the substantive domains (e.g., transportation, finances) that were not the focus of training. The Group x Occasion interaction was not significant for the health domain ($F = .27$; $p < .60$).

Insert Figures 1-3 about here

Discussion

The focus of this study was to examine whether brief educational training was effective in improving older adults' ability to solve nutritional and health-related problems commonly experienced in daily life. Training effects were specific to one of the two EPT scales most closely related to the content of the training program; note that no EPT items were included in the training program. The effects did not generalize to other domains.

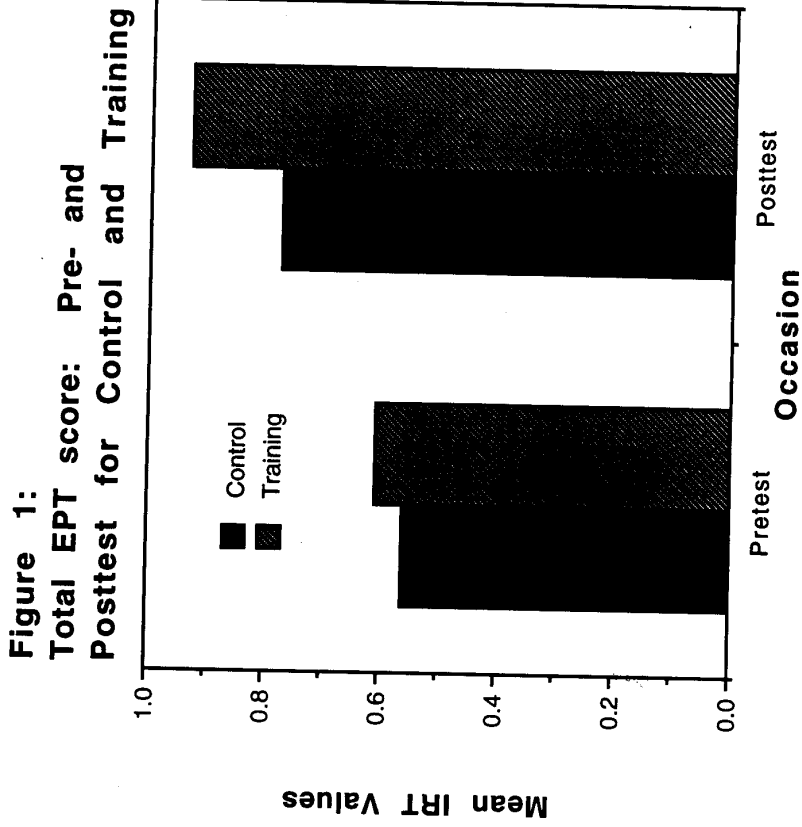
A problem with our research was that the mean educational level of the sample was 14 years. As a result, many people with high scores during pretest had little room for improvement. We plan to address this problem by

recruiting more subjects with lower educational levels/EPT scores to add to our already existing data.

This study brings additional insight to existing research through the use of item response theory (IRT). Traditionally raw or percentage scores are used as the unit of analysis. While raw and percentage scores are sample-specific, IRT scores do not have this constraint. Perhaps future research will continue to use IRT values and a new, more effective method of measurement may become more common.

References

- Lawton, M.P., & Brody, E.M. (1969). Assessment of older people: Self - maintaining and instrumental activities of daily living. *The Gerontologist*, 9, 179-185.
- Willis, S.L., & Marsiske, M. (1993). *Manual for the Everyday Problems Test*. The Pennsylvania State University.



**Figure 2:
EPT Scales: Pre- and Posttest Scores**

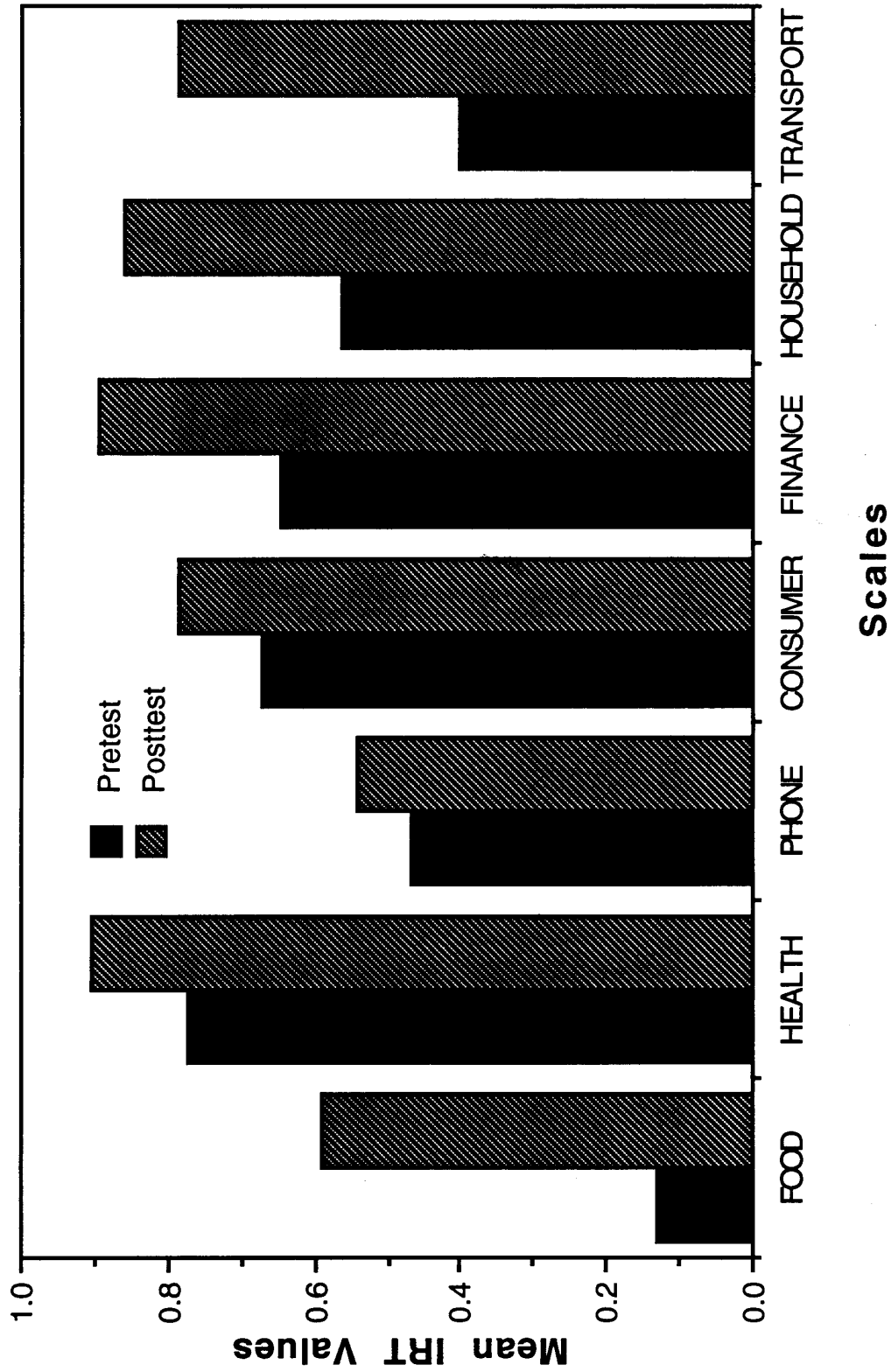


Figure 3:
Nutrition Domain: Pre- and Posttest for Control and Training Groups

