

# Caregiver Treatment Impact on Disabled Female Care Recipients



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## Objective

Problem-solving training (PST) is an effective intervention for improving the quality of life of family caregivers of persons with disabilities. Little is known about the possible indirect effects of such caregiver interventions on the care recipient. In this randomized clinical trial, we examined the impact of PST for caregivers (based on the D’Zurilla and Nezu social problem-solving model<sup>1</sup>) on the well-being of their female care recipients. Previous research<sup>2</sup> found that PST produced significant increases in constructive problem-solving and reduced depression in caregivers. In the present analysis using data collected in the same study, we examined the impact of the treatment on care recipient depression.

## Method

Participants were 81 family caregivers (64 women, 17 men) and their female care recipients with various disabilities (e.g., traumatic brain injury, stroke, mental retardation, cerebral palsy). Caregivers were randomly assigned to a problem-solving training intervention or an education-only control group. Caregivers received monthly contacts for one year and were assessed at baseline and 4, 8, and 12 months. Caregiver outcomes were assessed with the Center for Epidemiological Studies-Depression scale, the Burden Scale, and the Social Problem-Solving Inventory-Revised. Care recipient outcomes were assessed with the Hamilton Rating Scale for Depression and the Functional Independence Measure. Multilevel growth curve analysis was used to model linear change trajectories for both caregiver and care recipient outcome variables.

## Results

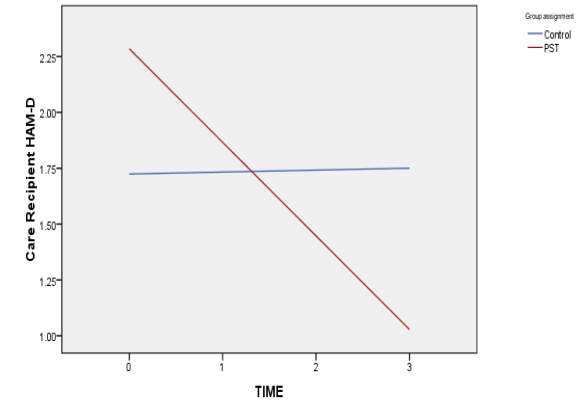
We used individual linear growth curve modeling to predict care recipient HAM-D scores from treatment group, time, and the interaction of treatment with time. The model revealed a significant interaction of treatment with time (see Table 1), indicating differential time trajectories of care recipient depression. Figure 1 illustrates that no change in depression for the control group, but a sharp decline in depression for the PST group.

We also examined possible mediator variables that might account for the treatment effect on care recipient depression. We repeated the growth model above, but included caregiver depression, burden and problem-solving (in separate analyses) as time-varying covariates. Caregiver depression was the only variable that met the criteria for mediated moderation. First, the interaction of treatment with time on care recipient depression dropped in magnitude (from  $B = -.43$  to  $-.31$ ) and was no longer statistically significant,  $t(182) = -1.51, p = .13$ . Second, the effect of caregiver depression on care recipient depression was statistically significant,  $B = .04, SE = .018, t(243.8) = 2.37, p < .05$ . These results suggest that the impact of PST on care recipient depression over time was at least partly due to the effects of PST on levels of caregiver depression.

Table 1: Parameter estimates for linear model of care recipient HAM-D scores over time

Effect	Estimate	SE	DF	t	Pr >  t
TIME	-0.42	0.14	175	-2.82	0.01
PST	0.56	0.48	175	-1.17	0.24
PST*TIME	-0.43	0.21	175	2.03	0.04

Figure 1: Modeled trajectories of care recipient HAM-D scores



## Conclusion

Problem-solving training for caregivers not only improved caregiver quality of life, but also had a positive effect on care recipient depression. The mediation analyses suggest that care recipient depression changed, to some extent, as a direct consequence of change in caregiver depression.

## References

- <sup>1</sup> D’Zurilla TJ, Nezu AM, Maydeu-Olivares A. (2004). Social problem solving: theory and assessment. In: Chang E, D’Zurilla TJ, Sanna LJ, editors. Social problem solving: theory, research, and training. Washington (DC): American Psychological Assoc., p 11-27.
- <sup>2</sup> Elliott TR, Berry JW, & Grant JS. Problem-Solving Training for Family Caregivers of Women with Disabilities: A Randomized Clinical Trial. Under Review.