

Caregiver Treatment Impact on TBI Care Recipient Depression



Jack W. Berry,^a Timothy R. Elliott,^b & Joan S. Grant^c

^a UAB Injury Control Research Center, University of Alabama at Birmingham; ^b Department of Educational Psychology, Texas A&M University; ^c School of Nursing, University of Alabama at Birmingham



Objective

In previous research,¹ we demonstrated that problem-solving training (PST), based on the D’Zurilla and Nezu social problem-solving model,² can improve problem-solving skills and reduce depression in caregivers of persons with traumatic brain injury (TBI). In further analyses of data obtained in the same study, we hypothesized that PST for caregivers would indirectly affect levels of depression in the care recipients with TBI.

Method

Family caregivers of a person with TBI ($N=67$) were randomly assigned to either a problem-solving training group (29 women/4 men) or an education-only control group (34 women). Care recipients were 26 men and 7 women in the PST intervention and 24 men and 10 women in the control group. The intervention involved monthly sessions (4 in-home sessions and 8 telephone follow-up calls) conducted over the course of a year. Control participants received educational materials and telephone calls at set intervals throughout their 12 months of participation. Caregiver outcomes included the Center for Epidemiological Studies-Depression scale, the Burden Scale, and the Social Problem-Solving Inventory-Revised. The primary outcome for care recipients was the Hamilton Rating Scale for Depression (HAM-D). Assessments were made at pre-intervention baseline, and 4, 8, and 12 months post-baseline. Linear mixed modeling was used to assess the impact of treatment on the trajectories of outcome variables over time.

Results

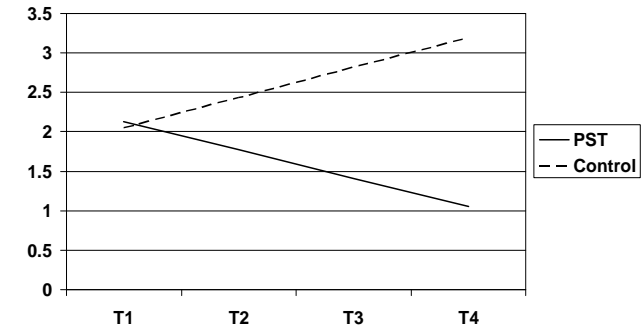
Linear mixed modeling revealed that caregivers in the PST condition reported significant decreases in depression and in dysfunctional problem-solving styles over the year (reported in Reference 1). In the present analysis, there was a significant interaction of PST with time for care recipient HAM-D scores (see Table 1). In Figure 1 we display the modeled linear time trajectories of HAM-D scores for the PST and control groups.

We also examined possible mediators of the PST effect on care recipient depression. Specifically, we tested the possible mediation effects of caregiver depression, burden, and problem-solving styles (constructive and dysfunctional). To test the mediation hypotheses, we included these caregiver outcomes as time-varying covariates in the linear model predicting care recipient depression. In all analyses, the interaction effect of PST with time on care recipient HAM-D scores remained statistically significant. It therefore appears that these caregiver outcomes did not strongly mediate the impact of treatment on care recipient depression.

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

	Estimate	SE	<i>t</i>	<i>p</i>
intercept	2.48	.51	4.84	.001
PST	0.81	.71	1.14	.26
Time	-0.36	.17	-2.04	.048
PST X Time	-0.74	.23	-3.08	.004

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



Conclusion

Problem-solving training for caregivers not only had beneficial effects on psychosocial outcomes for caregivers, but it also significantly improved levels of depression in their care recipients. The improvement in care recipient depression remained after controlling for caregiver depression, burden, and problem-solving skills. Further research will be required to explain the mechanisms by which PST for caregivers can improve the emotional well-being of care recipients.

References

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- 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.