



Original Research—CME

A Randomized Controlled Trial to Evaluate the Veterans' In-home Program for Military Veterans With Traumatic Brain Injury and Their Families: Report on Impact for Family Members

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Abstract

Background: Traumatic brain injury (TBI) creates many challenges for families as well as for patients. Few intervention studies have considered both the needs of the person with TBI and his or her family and included both in the intervention process. To address this gap, we designed an innovative intervention for veterans with TBI and families—the Veterans' In-home Program (VIP)—targeting veterans' environment, delivered in veterans' homes, and involving their families.

Objectives: To determine whether the VIP is more effective than standard outpatient clinic care in improving family members' well-being in 3 domains (depressive symptoms, burden, and satisfaction) and to assess its acceptability to family members.

Design: In this randomized controlled trial, 81 dyads (veteran/family member) were randomly assigned to VIP or an enhanced usual care control condition. Randomization occurred after the baseline interview. Follow-up interviews occurred 3-4 months after baseline, and the interviewer was blinded to group assignment.

Setting: Interviews and intervention sessions were conducted in veterans' homes or by telephone.

Participants: A total of 81 veterans with TBI recruited from a Veterans Affairs (VA) polytrauma program and a key family member for each participated. Of the 81 family members, 63 completed the follow-up interview.

Intervention: The VIP, guided by the person–environment fit model, consisted of 6 home visits and 2 telephone calls delivered by occupational therapists over a 3- to 4-month period. Family members were invited to participate in the 6 home sessions.

Main Outcome Measures: Family member well-being was operationally defined as depressive symptomatology, caregiver burden, and caregiver satisfaction 3-4 months after baseline. Acceptability was operationally defined through 3 indicators.

Results: Family members in the VIP showed significantly lower depressive symptom scores and lower burden scores when compared to controls at follow-up. Satisfaction with caregiving did not differ between groups. Family members' acceptance of the intervention was high.

Conclusions: VIP represents the first evidence-based intervention that considers both the veteran with TBI and the family. VIP had a significant impact on family member well-being and thus addresses a large gap in previous research and services for families of veterans with TBI.

Introduction

Traumatic brain injury (TBI), a major public health problem in civilian and military populations, affects about 5.3 million persons in the U.S. [1] and up to 23% of U.S. soldiers returning from the Iraq and Afghanistan combat theaters [2,3]. Although TBIs are characterized on a

continuum of severity from mild to severe, most are mild, representing 82% of military TBI cases [4] and 80% of civilian TBIs [5]. Sequelae of TBI are diverse and may include impairments in cognitive, physical, emotional, social, and behavioral functioning [6-14]. Recent literature indicates that persons with TBI, even mild TBI, may experience long-term emotional and physical health consequences [4,15].

Given the possible sequelae from TBI, it is not surprising that TBIs can have a profound impact on family members and the family as a whole. Numerous studies have documented challenging outcomes that family members commonly experience: significant levels of depression, stress, and anxiety [16-20]; caregiver burden [17,21,22]; social isolation [22-25]; decreased quality of life [26]; financial difficulties [20]; and worse perceived health [27]. Caregiver depression and burden are the most common psychosocial problems reported by family caregivers [28]. Previous research has also described the impact of TBI on the family system: increased family dysfunction [17,29,30], family conflict [31], communication problems [32], and marital problems [33]. Behavioral and emotional changes are the most distressing TBI-related symptoms for family members [29]. With these changes, family members may experience an ambiguous loss—their loved one is not dead but is a very different person to them [34,35].

Although extensive literature describes negative family sequelae, little research has focused on positive aspects of caregiving, such as satisfaction, affirmation, and meaning derived from taking care of a loved one. Evidence suggests that some family members of persons with TBI report positive feelings and experiences, such as satisfaction, with caring for a relative with TBI [21,36,37]. Such positive aspects of caregiving echo experiences of caregivers of persons with dementia, frailty, stroke, and schizophrenia [38-43]. Consideration of both positive and negative outcomes in families of persons with TBI is warranted to capture the complexity of families' experiences [37]. Therefore, the outcomes for the present study included family member satisfaction, depressive symptoms, and burden.

Recognizing TBI as a family affair, emerging literature has emphasized family needs and called for interventions that address both patient and family needs [44-47]. Families are the primary supports for persons with TBI and can be critical to the success of rehabilitation [48]. As such, they need education about TBI and a clear understanding of their relative's condition, as well as emotional support and assistance in solving problems posed by their relative's care [48-52]. However, few studies have evaluated family-inclusive interventions using rigorous methodology [44,53]. In their 2007 review, Boschen et al [44] identified only 4 intervention studies designed to reduce caregiver distress, concluding that no evidence exists to support the usefulness of any single psychosocial intervention for family caregivers of persons with TBI.

Since the review by Boschen et al [44], few rigorous intervention studies have targeted both the person with TBI and a family member or only the family member. In a randomized controlled trial (RCT), Rivera et al [52] tested a problem-solving training (PST) program, guided by cognitive behavioral therapy, with family caregivers of persons with TBI, delivered through

4 in-home sessions and 8 telephone sessions over 1 year. Family caregivers in the PST group showed significant decreases in depression, health complaints, and dysfunctional problem-solving style but no perceived decrease in burden. Backhaus et al [54], in an RCT with patients with TBI and their families, tested the effectiveness of a 12-session cognitive-behavioral treatment group providing psychoeducation, supportive psychotherapy, stress management, and problem-solving strategies. Intervention participants (patients and family members combined as 1 group) showed significantly improved perceived self-efficacy immediately following treatment and at 3-month follow-up, yet no decrease in psychological distress at either time. Another RCT with patients and family members or significant others [55] found benefits of peer mentoring, namely, increased behavioral control, positive coping, and quality of life for patients and improved community reintegration for families. In a fourth RCT, Carnevale et al [56] tested the impact of a behavioral management program in the home on persons with acquired brain injury and family caregivers. Those with brain injury showed significant reductions in problematic behaviors, but caregivers had no significant improvement in perceived stress or burden.

In a noncontrolled study, Kreutzer et al [16] evaluated the impact of the Brain Injury Family Intervention for TBI survivors and families. Delivered through five 2-hour sessions in a clinic, the intervention consisted of education concerning TBI, coping with loss, stress management, goal setting, and problem solving. At posttreatment and 3-month follow-up, family members reported significant increases from pretreatment in met needs in the areas of health information, professional support, and care involvement, but not in emotional, instrumental, or community support. No significant differences were noted in psychological distress, family functioning, or life satisfaction from baseline. In another noncontrolled study [57] testing multiple family group therapy, both patient and family participants showed significant benefits, with family members reporting reduced caregiver burden.

Among the previously cited interventions with family members, most were conducted in clinic/hospital settings, and none focused on home environmental approaches based on an explicit and well-developed model. Furthermore, past intervention research around TBI as a whole has been limited by the following: an absence of interventions in the home, where the sequelae of TBI manifest; lack of a family focus or inclusion of family members in the intervention; and a narrow medical restorative approach that centers primarily upon restoring deficits within the person with TBI rather than on modifying the environment. Past research has also lacked rigorous methodology, with few studies controlling for improvements that may occur over time [44,58].

The Veterans' In-home Program (VIP) [58] addresses these limitations. VIP is a service for veterans with TBI

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