



## BRIEF REPORT

## Outcomes and Lessons Learned From a Randomized Controlled Trial to Reduce Health Care Utilization During the First Year After Spinal Cord Injury Rehabilitation: Telephone Counseling Versus Usual Care

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### Abstract

**Objectives:** To describe the outcomes and lessons learned from a trial of telephone counseling (TC) to reduce medical complications and health care utilization and to improve psychosocial outcomes during the first year after spinal cord injury rehabilitation.

**Design:** Single-site, single-blind, randomized (1:1) controlled trial comparing usual care plus TC with usual care (UC).

**Setting:** Two inpatient rehabilitation programs.

**Participants:** Adult patients (N=168) discharged between 2007 and 2010.

**Interventions:** The TC group (n=85, 51%) received up to eleven 30- to 45-minute scheduled telephone calls to provide education, resources, and support. The UC group (n=83, 49%) received indicated referrals and treatment.

**Main Outcome Measures:** The primary outcome was a composite of self-reported health care utilization and medical complications. Secondary outcomes were depression severity, current health state, subjective health, and community participation.

**Results:** No significant differences were observed between TC and UC groups in the primary or secondary psychosocial outcomes.

**Conclusions:** This study had a number of strengths, but included potential design weaknesses. Intervention studies would benefit from prescreening participants to identify those with treatable problems, those at high risk for poor outcomes, or those with intentions to change target behaviors. Interventions focused on treatment goals and designed to work in collaboration with the participant's medical care system may lead to improved outcomes.

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In people with spinal cord injury (SCI), medical complications (eg, urinary tract infections and pressure ulcers) are common, theoretically preventable, and contribute to high rates of unplanned health care utilization.<sup>1</sup> After inpatient rehabilitation (IR), individuals with new SCI face the formidable task of carrying out

a host of self-care behaviors to maintain their health. Many programs designed to help people with SCI improve outcomes and prevent medical complications have been described, but few have been studied rigorously.<sup>2</sup>

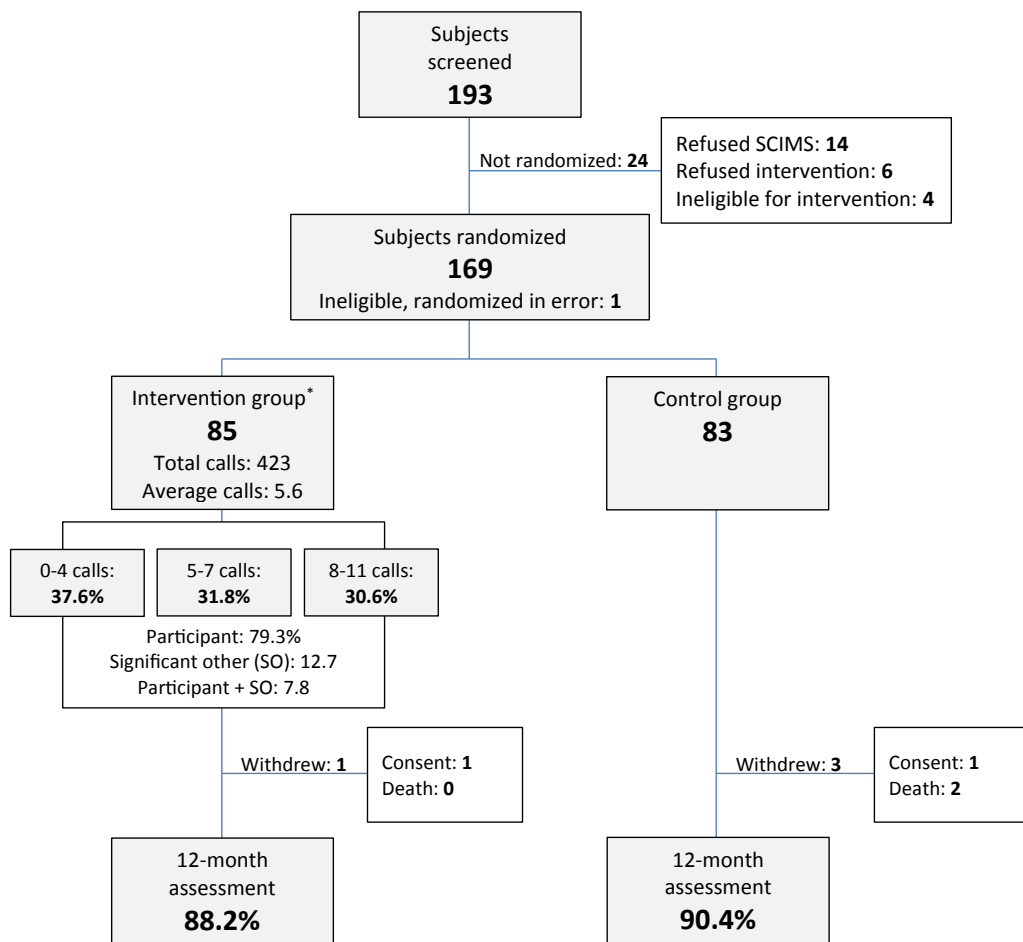
Telephone-delivered interventions seem particularly promising for individuals with SCI, largely because this method can reduce barriers to care.<sup>3</sup> The present study emulated an intervention that improved functional status and well-being of individuals with recent traumatic brain injury, though telephone delivered education, problem-solving, and referral assistance.<sup>4</sup> We conducted a randomized controlled trial to evaluate the effectiveness of

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**Fig 1** Consolidated Standards of Reporting Trials diagram. \*One participant could not be reached for any intervention calls.

telephone counseling (TC) in reducing medical complications and health care utilization as well as in improving depression, life satisfaction, subjective health, and community participation in people discharged from IR. This study was designed to have 80% power to detect a 28% difference between groups in the primary outcome, with 85 persons per group.

## Methods

Participants were recruited between August 9, 2007 and October 28, 2010 from consecutive admissions to IR units affiliated with the Northwest Regional Spinal Cord Injury System in Seattle, WA (fig 1). Patients who met criteria for enrollment in the Spinal Cord Injury Model Systems Database were recruited; 89% (N=168) of eligible individuals agreed to participate (supplemental table S1, available online only at <http://www.archives-pmr.org/>). Exclusion

criteria were lack of a telephone, being a non-English speaker, and psychosis. Upon discharge, a biostatistician randomly allocated participants (1:1) to usual care (UC) or usual care plus TC. The University of Washington Human Subjects Division approved the study procedures.

## Treatment groups

The UC group received standard referrals and follow-up and a welcome letter that provided information on the study and the outcome assessment schedule. The TC group received UC plus up to eleven 30- to 45-minute telephone calls from 2 trained peer interventionists at 1 to 2 days; 1, 2, 4, and 6 weeks; and 2, 3, 4, 6, 8, and 10 months after discharge. During each call, the interventionist reviewed the status of prior participant health and psychosocial adjustment concerns and systematically probed for new issues. Intervention elements were education, problem-solving, referral resources, and support. The intervention was developed with input from people with SCI and their significant others. Both interventionists had SCI and completed a 3-day motivational interviewing training. For each participant in the TC group, a significant other was requested to join calls. Sometimes when the participant was unavailable, calls occurred with significant others only. Participants could

### List of abbreviations:

**IR** inpatient rehabilitation  
**SCI** spinal cord injury  
**TC** telephone counseling  
**UC** usual care

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