

**Evaluating the Feasibility and Effectiveness of an Online Psychological  
Intervention Targeting Problem-Solving and Coping Strategies in People With  
Multiple Sclerosis**

**NCT Number: Not assigned yet**

**SBS-2023-0043**

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## Brief Summary (for ClinicalTrials.gov submission)

### Overview:

Multiple Sclerosis (MS) is a chronic autoimmune disease that affects the brain and spinal cord, often leading to unpredictable symptoms and significant emotional distress. Many people with MS experience anxiety, depression, and difficulties in coping with the challenges of the disease. Research has shown that effective coping—especially problem-focused coping—can reduce psychological distress and improve quality of life. However, access to psychological care can be limited, particularly in low-resource or mobility-restricted settings.

This study, conducted at the Nehme and Therese Tohme Multiple Sclerosis Center at the American University of Beirut Medical Center (AUBMC), evaluated the **feasibility and preliminary effectiveness** of an eight-week, online psychological intervention designed to enhance problem-solving and coping strategies in adults with MS living in Lebanon.

### Study Objectives:

The primary objective was to determine whether an online problem-solving coping strategies (PCS) intervention is *feasible, acceptable, and well-tolerated* for people with MS. The secondary objective was to assess the intervention's preliminary effects on problem-focused coping, depression, and anxiety.

### Design and Methods:

This was a **pilot randomized controlled trial (RCT)** including 30 adults diagnosed with MS for at least one year. Participants were randomly assigned in equal numbers (1:1 ratio) to one of two groups:

1. **PCS Intervention group:** 15 participants received eight weekly, 60-minute individual online sessions with a licensed clinical psychologist using WhatsApp video calls.
2. **Treatment-as-Usual (TAU) group:** 15 participants continued their regular neurological and nursing care without additional psychological intervention.

All participants completed questionnaires at baseline and at the end of the 8-week study to measure coping strategies, anxiety, and depression using validated Arabic versions of the **Brief-COPE Scale** and the **Hopkins Symptom Checklist (HSCL-25)**. The PCS group also completed a **self-developed Feasibility Questionnaire** to assess the acceptability and practicality of the online sessions.

### Intervention Details:

The PCS program was developed in Arabic by a multidisciplinary team including psychologists, nurses, and physicians. It was based on **Lazarus and Folkman's Transactional Model of Stress and Coping (1984)** and **Problem-Solving Therapy principles**. Each session included psychoeducation about healthy versus maladaptive coping, guided problem-solving exercises, and real-life applications through weekly homework. The sessions emphasized identifying challenges, generating solutions, weighing pros and cons, and implementing action plans.

### **Feasibility Results:**

All 30 participants completed the study (100% retention). All PCS participants attended at least six of the eight sessions, meeting the feasibility benchmark for adherence. The average feasibility score was **60.5 out of 65**, indicating high satisfaction and tolerance for the online format. Participants reported that WhatsApp was practical, accessible, and easy to use, especially for those with limited mobility or lower technological literacy.

Qualitative feedback showed four main positive themes:

1. Improved problem-solving and active coping skills.
2. Greater self-awareness and confidence.
3. Emotional expression and sense of safety during sessions.
4. Altruism, with participants sharing learned coping skills with others.

Minor challenges included unstable internet connections and limited privacy at home.

### **Preliminary Effectiveness Findings:**

Both groups showed improvements in coping, depression, and anxiety after 8 weeks. Participants in the PCS group demonstrated a significant increase in problem-focused coping and a significant reduction in depression and anxiety scores, although differences between the PCS and TAU groups were not statistically significant due to the small sample size. The results indicate promising trends suggesting that online coping interventions can complement standard medical care and improve emotional well-being.

### **Conclusions and Future Directions:**

This pilot study demonstrates that an **online, problem-solving coping intervention is feasible, acceptable, and safe** for people with MS in Lebanon. Delivering psychological care through accessible platforms like WhatsApp may reduce barriers to mental health support for individuals facing mobility, geographic, or resource limitations.

The findings encourage larger, multi-site studies to confirm these results and explore group-based or hybrid models that combine psychological support, coping skills training, and peer interaction. Future studies could also assess long-term outcomes and integration of such interventions into national MS care pathways through the Ministry of Public Health.

### **Trial Information:**

- **Sponsor / Site:** American University of Beirut Medical Center (AUBMC), Nehme and Therese Tohme MS Center
- **Principal Investigator:** Prof. Samia J. Khoury, MD
- **Study Design:** Randomized, open-label, two-arm pilot RCT
- **Sample Size:** 30 participants (15 PCS intervention; 15 control)
- **Intervention Name:** PCS (Problem-Solving Coping Strategies)

- **Duration:** 8 weeks per participant
- **Delivery Platform:** WhatsApp video sessions
- **Outcome Measures:** Feasibility, problem-focused coping (Brief-COPE), depression and anxiety (HSCL-25)
- **IRB Approval:** AUB IRB Protocol SBS-2023-0043
- **ClinicalTrials.gov registration:** Pending (Retrospective registration underway)