

## **Study Protocol**

**Project title:** WECARE: A Behavioral Intervention for Dementia Caregivers

**Trial Registration:** ClinicalTrials.gov Identifier: [NCT05992467](https://clinicaltrials.gov/ct2/show/study/NCT05992467)

**IRB Approval Date:** August 31, 2023

**Approved by:** George Mason University Office of Research Integrity and Assurance

## **Study Protocol**

### **Overview:**

After informed consent, participants will complete a baseline survey. Then they will be enrolled in the 7-week Wellness Enhancement for Caregivers (WECARE) intervention. Participants will subscribe to the WECARE official account on their WeChat, a popular Chinese social media app. Participants will receive multimedia messages from WECARE account 6 days a week for 7 weeks. They will also be invited to attend online group meetings held at weeks 3, 5, and 7 to enhance social networking. Two to four after the intervention, participants will complete a follow-up survey.

### **Participant eligibility:**

Participants are eligible if they meet the following criteria: (1) currently residing in the United States, (2) self-identify as Chinese or Chinese American and are able to read in Chinese, (3) are 21 years of age or older, (4) own a cellphone and use WeChat, and (5) provide at least 8 hours of care per week to a family member or loved one with ADRD. Exclusion criteria are: (1) evidence of severe cognitive impairment or mental disorders, or (2) the care recipient was receiving hospice care or had a life expectancy of fewer than six months.

### **Participant recruitment:**

Participants are recruited via two channels. The first channel is the University of California San Francisco Collaborative Approach for Asian Americans, Native Hawaiians, and Pacific Islanders Research Education (CARE) registry. The second channel involves collaboration with our community partners located in Washington DC and New York, who offer services to people with dementia their family caregiver. Recruitment flyers will be sent to communities via social media outlets or e-newsletters. Eligibility for study participation will be determined through telephone screenings conducted by trained research personnel.

### **Ethics Approval**

This study protocol has been approved by the Institutional Review Board of George Mason University (IRB#2069322-1).

### **WECARE Intervention**

The 7-week WECARE intervention was designed to improve caregiving skills, alleviate caregiver distress, and enhance the psychosocial well-being of dementia caregivers. Delivered through WeChat, a social media platform, WECARE will deliver culturally adapted multimedia articles to participants 6 days a week for 7 weeks. Each week is focused on a theme: (1) dementia and caregiving basics, (2) skill development for effective caregiving, (3) communication with healthcare professionals, care partners, and family members, (4) stress management through problem-solving, (5) strategies for reducing stress and preventing depression, (6) promotion of self-care and healthy behaviors, and (7) access to social support and local resources. Each article requires 3 to 6 minutes of reading, with embedded images, short videos, downloadable forms, and optional audio recordings for those preferring to listen. Participants can also participate in three moderated group meetings online at weeks 3, 5, and 7 to foster social interaction. WeChat's built-in features allow participants to initiate group or private chats for additional support and networking. The WECARE backend database tracks user

engagement and manage content delivery. A more detailed description of WECARE has been reported elsewhere (Hong et al., 2023)

### **Intervention Delivery and Data Collection Procedure:**

A total of 45 participants will be recruited for the study. After the informed consent, they will complete an online baseline survey and subscribed to the WECARE official account on WeChat. The intervention spans over 7 weeks, during which participants receive 6 multimedia contents weekly, scheduled between Monday and Saturday. Participant engagement with the content is monitored via user activity log in backend. Those who do not open WECARE for a week are reminded via a text on WeChat, and those who remain inactive for three weeks are considered dropped out. A follow-up survey is sent out 2 to 4 weeks after the intervention intervention, with survey links sent via WeChat or email. Upon completion of the 7-week WECARE program and the follow-up survey, participants will receive a \$100 gift card.

### **Outcome Measures:**

**Depressive symptoms** are assessed using the Center for Epidemiologic Studies Depression Scale (CES-D), a widely validated 20-item self-report tool (Radloff, 1977). Participants rate how often they experienced depressive symptoms in the past week on a 4-point scale, ranging from 0 (rarely or none of the time) to 3 (most or all of the time), yielding a total score between 0 and 60. A clinical cutoff of 16 is used to identify participants with elevated depressive symptoms, a threshold commonly associated with clinically significant levels of depression (Henry et al., 2018). The CES-D scale has been validated in various Chinese populations, including older adults and dementia caregivers (Ying et al., 2019).

**Caregiving burden** is measured using the Zarit Burden Interview (ZBI), a 12-item scale that assesses the perceived burden of caregiving. Each item is rated on a 5-point scale from “never” (0) to “nearly always” (4), with total scores ranging from 0 to 48 (Bédard et al., 2001). The ZBI has been widely validated in Chinese caregiving contexts (Ko et al., 2008).

**Life satisfaction** is evaluated using the **Satisfaction with Life Scale (SWLS)**, a 5-item scale that assesses individuals’ subjective evaluation of their life circumstances. Each item was rated on a 7-point Likert scale from 0 (strongly disagree) to 6 (strongly agree), with a total score ranging from 0 to 30 (Diener et al., 1985). The SWLS has been validated in both Chinese older adults and dementia caregivers (Bai et al., 2011).

**Caregiving mastery** is measured using the **Caregiver Mastery Scale**, a 7-item tool developed by Pearlin et al. (1990) to assess caregivers’ sense of control and competence in managing caregiving responsibilities. Each item is rated on a 5-point scale, with total scores ranging from 0 to 28. Higher scores indicated a greater sense of mastery over caregiving challenges (Pearlin et al., 1990). Although the scale has been widely validated in Chinese populations (Lim et al., 2022).

**Positive aspects of caregiving** is measured using the **Positive Aspects of Caregiving Scale**, a 9-item scale with a 5-point Likert scale from 0 (disagree a lot) to 4 (agree a lot) with total scores ranging from 0 to 36 with higher scores indicating a more positive perception of caregiving

(Tarlow et al., 2004). The Positive Aspects of Caregiving Scale has been validated in Chinese caregivers (Lou et al., 2015).

**Care-recipient's problem behaviors** are assessed through the **Revised Memory and Problem Behavior Checklist (RMBPC)**, a 24-item measure divided into three subdomains: memory-related issues, depressive behaviors, and disruptive behaviors. Each item was coded as Yes (1) or No (0), and total scores ranged from 0 to 24, with higher scores indicating more problem behaviors (Teri et al., 1992). Although the RMBPC has been validated in Chinese populations (Fuh et al., 1999).

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