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# Telephone-based intervention improves quality of life among family caregivers of persons with dementia in Malaysia: the mediating role of caregiver burden

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## Abstract

**BACKGROUND:** Family caregiver (FC) of persons with dementia (PWD) are increasingly affected by mental and physical health which leads to poor quality of life (QoL). Telephone-based interventions offer flexible solution to support caregivers of PWD but the effectiveness needs further evaluation. This study aimed to assess the effectiveness of a telephone-based intervention in improving QoL among FC of PWD and to examine the role of caregiver burden as a mediating factor. **METHODS:** A randomized control trial study was conducted involving 121 FCs, divided into intervention (n = 60) and control (n = 61) groups. The intervention group received a 10-week intervention by the healthcare professionals via telephone. QoL were measured using the validated Malay version of Control, Autonomy, Self-Realization and Pleasure (CASP-19) at baseline (T<sub>0</sub>) and endline (T<sub>1</sub>). Intention-to-treat (ITT) analysis was performed to determine the independent effect of the intervention on QoL, and mediation analysis was conducted using the multiple linear regression and bootstrap analysis. **RESULTS:** Participants in the intervention group showed a statistically significant improvement in QoL ( $\beta = 5.00$ , 95% CI 2.21-7.78,  $p = 0.001$ ). Mediation analysis revealed that caregiver burden mediated the relationship between the telephone-based intervention and QoL. Additionally, reduction of caregiver burden was observed to mediate the relationship between telephone-based intervention and reduced anxiety symptoms. **CONCLUSION:** Telephone-based intervention was effective in improving the QoL among FCs of PWD. The findings also suggest that caregiver burden plays a mediating role in this process, underscoring the need for policymakers to integrate burden-reduction training into future programs. **TRIAL REGISTRATION:** ISRCTN14565552. © 2026. The Author(s).

## Author keywords

Dementia; Family caregiver; Mediation analysis; Quality of life; Telephone-based intervention

## Indexed keywords

### EMTREE medical terms

anxiety; article; bootstrapping; caregiver; caregiver burden; controlled study; dementia; female; health care personnel; human; intention to treat analysis; major clinical study; Malaysia; male; mediation analysis; multiple linear regression analysis; pleasure; quality of life; randomized controlled trial; telephone

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