

TITLE: THE WISE STUDY (WHATSAPP INTERVENTION FOR SLEEP IN THE ELDERLY) TARGETING INSOMNIA AND LONELINESS WITH A DIGITAL BOOKLET: RANDOMIZED CONTROL TRIALS

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Study Overview

Sleep hygiene education is an educational effort to teach healthy sleep habits and behaviors to improve sleep quality, duration, and regularity naturally without the use of medication; however, this approach has not been established in Indonesia. This study aims to establish a sleep hygiene education care model among lonely older adults with insomnia in Indonesia and to examine the immediate effects of the WISE Study (WhatsApp Intervention for Sleep in the Elderly) led by nurses to older adults loneliness with insomnia using a Digital Booklet. In this assessor-blinded, randomized controlled trial, participants will be randomly allocated to either the nurse-led WISE experimental group or the control group provided with usual care. The outcomes will include sleep parameters measured using the Indonesian version of the Insomnia Severity Index (ISI), Generalized Anxiety Disorder-7 (GAD-7), Geriatric Depression Scale-Short Form (GDS-SF), Brief Fatigue Inventory (BFI), Epworth Sleepiness Scale (ESS), and sleep diaries. The questionnaires will be assessed at pre-treatment, post-treatment, and one-month follow-up. Generalized estimating equations will be used to test the research hypotheses. Questionnaires will be assessed at pre-treatment, post-treatment, and one-month follow-up. We hypothesized that older adults who were loneliness with insomnia who underwent nurse-led WISE would experience greater improvements in sleep quality compared to participants in a control group who received usual care.

Detailed Description

Background: Insomnia, defined as trouble beginning and sustaining sleep that interferes with daytime activities, is a widespread complaint among the general public, affecting mood, cognitive performance, and quality of life. WhatsApp Intervention Therapy for Sleep in the Elderly (WISE) is a unique technique for lonely older persons suffering from insomnia, however its treatment model has not been established in Indonesia.

Purposes: was to develop the WISE intervention paradigm among older adults who were experiencing loneliness with insomnia in Indonesia, as well as to evaluate the immediate impact of nurse-led WISE on older adults suffering from insomnia, loneliness, and depression. We hypothesised that lonely older individuals with insomnia who received nurse-led WISE would have better sleep quality than those in the control group who received standard care.

Methods: This randomized, control-blinded trial will use a two-arm, parallel-group design. A total of 100 adults with insomnia will be randomly allocated to either a nurse-led WISE program or a no-treatment control group in a 1:1 ratio. In the nurse-led WISE group, all participants will undergo a four-week nurse-led WISE program consisting of two weeks in-person sessions and two weeks telephone sessions. The program will include education about sleep disturbance, symptoms, causes of insomnia, sleep hygiene, stimulus control, sleep restriction, and relaxation. The control group

will receive no treatment and will receive weekly WhatsApp contact. The outcomes will include sleep parameters measured using the Indonesian version of the Insomnia Severity Index (ISI), Generalized Anxiety Disorder-7 (GAD-7), Geriatric Depression Scale-Short Form (GDS-SF), Brief Fatigue Inventory (BFI), Epworth Sleepiness Scale (ESS), and sleep diaries. The questionnaires will be assessed at pre-treatment, post-treatment, and one-month follow-up. Generalized estimating equations will be used to test the research hypotheses.

Official Title: *The WISE Study (WhatsApp Intervention for Sleep in the Elderly): Targeting Insomnia and Loneliness with a Digital Booklet*

Conditions: *Loneliness older adults with insomnia*

Intervention / Treatment: *WISE*

This study has 1 location: *Coastal area of Indonesia*

Eligible Criteria:

- Inclusion Criteria:
 - Elderly individuals diagnosed with loneliness
 - Reported experiencing sleep disturbances in the past 2 weeks, either continuously or intermittently
 - Experiencing insomnia with a total score of ≥ 8 on the Indonesian version of the Insomnia Severity Index (ISI) during screening
 - Able to communicate in Indonesian
- Exclusion Criteria:
 - Elderly individuals with dementia, delirium, severe mental retardation, or cognitive impairment that prevents them from understanding or assessing their own sleep experience.
 - Currently using new sleeping medication/stimulants

Ages Eligible for Study: *60 years and above*

Sexes Eligible for Study: *All*

Accepts Healthy Volunteers: *Yes*

Study Design:

- **Primary Purpose:** *Treatment*
- **Allocation:** *Randomized*
- **Intervention Model:** *Parallel Group Design*
- **Masking:** *Single (outcomes assessor)*

Arms and Interventions

Participant Group/Arm	Intervention/Treatment
Experimental: Nurse-led WISE intervention group Participants will undergo a 4-week treatment period (2 weeks in person and 2 weeks over the phone).	Behavioral: WISE Upon arrival at the initial meeting, participants will receive a workbook containing an overview and content of WISE, including sleep disorders, symptoms, causes of insomnia, sleep hygiene, and relaxation. At the beginning of the intervention and at the end of the fourth week after the intervention, an interventional nurse will meet with participants to assess their Insomnia Severity Index (ISI), Generalized Anxiety Disorder-7 (GAD-7), Geriatric Depression Scale-Short Form (GDS-SF), Brief Fatigue Inventory (BFI), Epworth Sleepiness Scale (ESS), and sleep diary. From week 1 to week 4, participants will receive daily education via WhatsApp.
No Intervention: Control Group Participants received no education or treatment for 4 weeks.	

Primary Outcome Measures

Outcome Measures	Measure Description	Time Frime
Changes in Insomnia Severity	Insomnia severity will be measured using the Indonesian version of the Insomnia Severity Index (ISI). The ISI has seven questions to assess sleep difficulties. The total score ranges from 0 to 28, with scores above 7 being associated with insomnia. Higher scores indicate more severe insomnia.	At baseline to week 4 (after the intervention), and one month (follow-up)
Changes in Epworth Sleepiness	Epworth Sleepiness will be measured using the Indonesian version of Epworth Sleepiness Scale (ESS) with a 8-item questionnaires with total scores 24. Higher scores presence of ESS.	At baseline to week 4 (after the intervention), and one month (follow-up)
Changes in Sleep parameters from sleep logs	Sleep parameters will be measured using Sleep Logs with a-6 item questionnaires that assess for daily sleep log. Higher scores presence poor of sleep.	At baseline to week 4 (after the intervention),

		and one month (follow-up)
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Secondary Outcome Measures

Outcome Measures	Measure Description	Time Frime
Changes in level of Anxiety	Level of anxiety will be measured using the Indonesian version of the Insomnia Generalized Anxiety Disorder-7 (GAD-7). The total score ranges from 0 to 21. Higher scores indicate more depression.	At baseline to week 4 (after the intervention), and one month (follow-up)
Changes in level of depression	Level of depression will be measured using the Indonesian version of Geriatric Depression Scale-Short Form (GDS-SF) with a 15-item questionnaire that assesses the level of depression. Higher scores indicate more depression.	At baseline to week 4 (after the intervention), and one month (follow-up)
Changes in level of fatigue in a person — both in terms of intensity and its impact on daily activities	Level of fatigue will be measured using the Indonesian version of Brief Fatigue Inventory (BFI) with a 9-item questionnaire that assesses the level and impact of fatigue in the past 24 hours using a scale of 0–10, with the final score being the average of all items. Higher scores indicate more severe fatigue.	At baseline to week 4 (after the intervention), and one month (follow-up)

Sponsor: Chulalongkorn University (C2F-2025 to 2026)

Terms related to this study

Keywords Provided by Faizul Hasan, Chulalongkorn University

Additional Relevant MeSH Terms:

WiSE

Older adults loneliness

Plan to Share Individual Participant Data (IPD)?: No

Studies a U.S. FDA-Regulated Drug Product: No

Product Manufactured in and Exported from the U.S.: No

Studies a U.S. FDA-Regulated Device Product: No