

## ABSTRAK

**Latar Belakang:** Proses menua terjadi kemunduran fungsional tubuh termasuk kemunduran fungsi kognitif, kebugaran, dan depresi. Kondisi fisik aktif diharapkan dapat menciptakan adaptasi positif yang menghambat proses penuaan. Atas dasar inilah perlu diciptakan lansia yang aktif dengan melakukan aktivitas sehari-hari yang dapat menunjang fungsi kognitif, kebugaran, dan mental.

**Tujuan:** Tujuan penelitian ini adalah untuk pengembangan model latihan terintegrasi aktivitas fisik harian untuk meningkatkan fungsi kognitif dan kebugaran serta menurunkan level depresi lansia.

**Metode:** Merupakan penelitian *Research and Development*, dalam 3 tahap. Sampel penelitian adalah lansia usia 60 tahun atau lebih yang merupakan anggota kelompok Posyandu Lansia PKK Teratai Perum Nogotirto Gamping Sleman yang aktif melakukan senam berdasarkan kriteria inklusi dan eksklusi penelitian yang telah ditetapkan, serta mengisi dan menyetujui *informed consent*. Tahap desain dan uji kelayakan dilakukan analisis non parametrik dengan persentase. Tahap uji efektivitas digunakan metode *repeated pre test-post test quasi experimental* dengan *within subject design*, yang dilakukan pada bulan Juli sampai dengan November 2024. Kelompok data kontrol tidak diberikan perlakuan dan setelah 2 bulan dijadikan kelompok data perlakuan. Penilaian dilakukan selama 2 bulan pada kedua kelompok meliputi fungsi kognitif (MMSE versi Indonesia), kebugaran (SFT *battery*), dan level depresi (GDS versi Indonesia). Uji beda digunakan *Repeated Measures* anova bila data berdistribusi normal atau *Friedman test* bila data tidak berdistribusi normal, dengan tingkat kemaknaan  $p < 0,05$ , dan pengukuran *effect size* dengan Cohen's D.

**Hasil:** Telah disusun rancangan model latihan terintegrasi aktivitas fisik harian pada saat bangun tidur (posisi berbaring), menjelang dan setelah mandi, serta saat aktivitas dengan duduk dan berdiri. Penelitian menunjukkan bahwa uji kelayakan rancangan model latihan terintegrasi aktivitas fisik harian dinyatakan valid dengan skor validasi ahli  $\geq 75$  persen, dan skor kelayakan subjek  $\geq 75$  persen. Uji statistik yang dilakukan setelah 2 bulan perlakuan menunjukkan adanya perbedaan yang signifikan antara kelompok data kontrol dan kelompok data perlakuan pada peningkatan fungsi kognitif ( $p < 0,001$ ) dan kebugaran ( $p < 0,001$ ) serta penurunan level depresi ( $p < 0,001$ ) masing-masing dengan *effect size* sangat besar ( $d \geq 1$ ).

**Kesimpulan:** Disimpulkan bahwa model latihan terintegrasi dengan aktivitas fisik harian lansia layak diterapkan pada lansia dan terbukti efektif untuk meningkatkan fungsi kognitif dan kebugaran serta menurunkan level depresi.

Kata kunci: aktivitas fisik, fungsi kognitif, kebugaran, depresi, lansia

## ABSTRACT

**Background:** The ageing process results in functional deterioration of the body including deterioration of cognitive function, fitness, and depression. Active physical conditions are expected to create positive adaptations that inhibit the aging process. It is necessary to create an active elderly by doing daily activities that can support cognitive function, fitness, and mental.

**Objectives:** The purpose of this study is to develop an integrated exercise model of daily physical activity to improve cognitive function and fitness and reduce the level of depression of the elderly.

**Methods:** This is a Research and Development study, in 3 stages. The research sample was elderly people aged 60 years or older who were members of the elderly Posyandu group PKK Teratai Perum Nogotirto Gamping Sleman who were active in doing gymnastics based on the inclusion and exclusion criteria of the research that has been set, and filled out and agreed to informed consent. The design stage and feasibility test were carried out non-parametric analysis with percentages. The effectiveness test stage used a repeated pre-test-post test quasi-experimental method with within subject design, which was conducted from July to November 2024. The control data group was not given treatment and after 2 months it became the treatment data group. Assessment was conducted for 2 months in both groups including cognitive function (MMSE Indonesian version), fitness (SFT battery), and depression level (GDS Indonesian version). Repeated Measures anova was used if the data was normally distributed or Friedman test if the data was not normally distributed, with a significance level of  $p < 0.05$ , and effect size measurement with Cohen's D.

**Results:** The design of a daily physical activity integrated exercise model has been developed when waking up (lying position), before and after bathing, as well as during sitting and standing activities. The study showed that the feasibility test of the daily physical activity integrated exercise model design was declared valid with an expert validation score  $\geq 75$  per cent, and a subject feasibility score  $\geq 75$  per cent. Statistical tests conducted after 2 months of treatment showed a significant difference between the control data group and the treatment data group on improving cognitive function ( $p < 0.001$ ) and fitness ( $p < 0.001$ ) and reducing depression levels ( $p < 0.001$ ) each with a very large effect size ( $d \geq 1$ ).

**Conclusion:** It can be concluded that the exercise model integrated with daily physical activity for the elderly is feasible to be applied to the elderly and proven effective to improve cognitive function and fitness and reduce depression levels.

Keywords: physical activity, cognitive function, fitness, depression, elderly