



## The effects of chair yoga with spiritual intervention on the functional status of older adults

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### KEYWORDS

Older adults;  
Spiritual;  
Chair yoga;  
Functional status

### Abstract

**Objective:** “Functional status” is an individual’s ability to fulfill his/her needs and to perform the activities of daily life independently. Functional decline can lead to a higher level of dependency. This study aims to investigate the effects of chair yoga with spiritual intervention on the functional status of older adults.

**Method:** This quasi-experimental study employed a pre- and post-test design using a control group. The study involved an intervention group of 42 respondents and a control group of a further 42 respondents. The sample was selected using multistage random sampling. The data were analyzed using a t-test.

**Results:** The results of the study show that the mean score for the intervention group was higher after the intervention ( $p = 0.000$ ). Furthermore, the mean score for functional status after the intervention was significantly higher for the intervention group than for the control group ( $p = 0.000$ ).

**Conclusions:** It is concluded that the use of chair yoga with spiritual intervention is a useful preventive measure against functional decline in older adults. The study also suggests that this form of intervention should be considered as a complementary nursing therapeutic practice for older adults in the community.

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### Introduction

The aging process is a contributory factor to health problems and functional decline in older adults<sup>1</sup>. As individuals get older, the body’s functionality diminishes, resulting in mobility restrictions and activity alterations<sup>2</sup>. Alongside physical changes, the aging process can also lead to cognitive changes<sup>3</sup>. Both physical and cognitive changes can have an impact on the functional status of older adults.

“Functional status” is the individual’s ability to maintain his/her health and perform the activities of daily life<sup>1</sup>. Its

measurement is based on the individual’s ability to perform activities independently. A decline in an individual’s functional status can lead to disability. Furthermore, functional decline can make individuals more dependent on others.

Dependence in older adults places a greater economic strain on citizens of reproductive age<sup>4</sup>. The consequences of functional decline (including falls, injuries, and mobility limitations) can, in fact, burden families and communities<sup>5</sup>.

The demographic in Indonesia is shifting, with a rising number of older adults living in the country, leading to new challenges for the health system. In 2014, the dependency

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ratio for older adults in Indonesia was 12.41, meaning that for every 100 citizens of reproductive age, there are approximately 12 older adults who cannot look after themselves<sup>6</sup>. The dependency ratio for older adults in West Java in 2014 was also found to be similar (CBS, 2015). The District Health Office of Depok City (2015) states that nearly 5 percent of the total population in the city consists of older adults in the dependence categories A (totally dependent) and B (partially dependent)<sup>7</sup>.

There is growing evidence that yoga interventions could increase the functional abilities of older adults. A study conducted showed that using a chair yoga intervention with older adults aged over 80 leads to improvements with balance and walking speed. In another study, the "Fit Chair Yoga" program was found to have positive consequences for the physical and mental abilities of older adults with Alzheimer's disease<sup>8</sup>.

All the evidence points to the positive impact of yoga on older adults' functional abilities. There is a lack of evidence, however, regarding the integration of spiritual intervention into chair yoga programs. This study aims, therefore, to identify the effects of chair yoga with spiritual intervention on the functional status of older adults.

It is proposed that the program could benefit older adults not only in terms of improving their functional abilities, but also in the sense of increasing their safety. In addition, the program allows social interactions to occur between older adults because it is a group activity.

## Method

This quasi-experimental study employed a pre- and post-test design using a control group. This method was selected to allow the researchers to identify the effects of a particular intervention by comparing the results for the intervention and control groups with each other.

The population used in this study was older adults living in Depok City. The sample was created using 2 sample t-tests (with  $\beta = 80\%$ ,  $\alpha = 5\%$ , and dropout rate = 10%). To collect data, multiple and simple random samplings were taken, involving 84 respondents (42 in the intervention group and 42 in the control group).

The study used the Functional Independence Measure (FIM) to assess the functional status of older adults, including the conduct of basic activities in daily life. FIM is an improved version of the Bathel index developed by the American Congress of Rehabilitation Medicine and the American Academy of Physical Medicine and Rehabilitation. FIM has 2 main domains of measurement: the motoric domain (13 items) and the socio-cognitive domain (5 items)<sup>10</sup>.

Chair yoga with spiritual intervention is an intervention package consisting of 6 phases: centering, warming up, the core pose, cooling down/the counter pose, praying, and meditation. The respondents in the intervention group were divided into two small groups (each subgroup consisting of 21 respondents). Volunteers were utilized as facilitators. The researchers have also completed yoga training and been certified as yoga teachers.

The chair yoga exercise program with spiritual intervention ran 3 times a week for 4 weeks, from 8-9 am. The data

were analysed using a paired t-test to examine the differences between the functional abilities and levels of life satisfaction of older adults in the intervention and control groups both before and after the program. Additionally, an independent t-test was used to examine the differences between the functional abilities and life-satisfaction levels in the intervention and control groups after the program.

Those participants who did not attend the therapy sessions more than twice were considered to have dropped out. Furthermore, participants who missed two or more classes were given an extra session at the end of the course. For the control group, the researchers provided a form of chair yoga with spiritual intervention, and post-test was immediately given after an extra session in intervention group completed.

The study was conducted in Kelurahan Sukatani (intervention group) and Kelurahan Jatijajar (control group). It was approved by the Faculty of Nursing Universitas Indonesia Ethical Committee in March 2016. The research design ensured that there was no possibility of the participants facing physical or mental harm. Personal information, such as names and dates of birth, were not included in the instrument. All the data were managed by using identification numbers.

Before the data analysis began, data editing was conducted to establish whether the data obtained was complete. The researchers utilized an assessment form to evaluate the correctness and completeness of the data. To follow, each variable was coded to enable the researchers to analyze and tabulate the data. Specific codes were assigned to the participants, according to their groups. After the coding had been completed, the researchers classified the data into previously defined categories, before tabulating the information using a statistical computer program.

Univariate analysis presents the frequency and proportion of each of the variables, including means and standard deviations. As the study used the interval parametric scale, the mean differences test (paired t-test) was conducted both before and after the intervention. In order to determine the influence of chair yoga with spiritual intervention on the control and intervention groups, the researchers used the independent t-test.

## Results

The average age of the participants in each group was 66 years. Females accounted for 88.1% of the intervention group and 92.9% of the control group. The majority of the respondents in both the intervention (76.2%) and control (69%) groups had completed senior-high school. Widows/widowers represented over half of the respondents both in the intervention (52.4%) and control (54.8%) groups.

In the intervention group, 66.6% of respondents had a history of disease, as did 71.4% of those in the control group. Levels of physical activity were higher in the intervention group, with an average of 796.43 minutes per week. The average household income was also higher in the intervention group, at IDR 1,392,857.14 (but still lower than the standard minimum wage for Depok City).

Prior to the intervention, the average functional status in the control group was higher, at a value of 122.48 ( $SD = 2.36$ ).

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