

# A Study to Assess the Effectiveness of Comprehensive Nursing Intervention on Body Balance Among Elderly with Osteoarthritis in A Selected Old Age Home, Puducherry.

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## ABSTRACT:

Osteoarthritis is a common degenerative joint disorder among elderly individuals and is associated with impaired body balance, reduced mobility, and increased risk of falls. This study aimed to assess the effectiveness of comprehensive nursing intervention on body balance among elderly persons with osteoarthritis in a selected old age home, Puducherry. A quantitative research approach with a quasi-experimental pre-test and post-test control group design was adopted. A total of 15 elderly persons with osteoarthritis were selected using non-probability purposive sampling. Body balance was assessed using a structured balance assessment scale. The pre-test findings showed that most participants had poor to moderate body balance. Comprehensive nursing intervention consisting of balance exercises, joint mobility exercises, posture training, health education, and fall-prevention strategies was provided for a specified period. The post-test findings demonstrated a marked improvement in body balance. Statistical analysis revealed a significant improvement in post-test balance scores compared with pre-test scores, indicating the effectiveness of the intervention. The study concluded that comprehensive nursing intervention is effective in improving body balance, reducing fall risk, and promoting functional independence among elderly persons with osteoarthritis.

**KEY WORDS:** Elderly, Osteoarthritis, Body Balance, Comprehensive Nursing Intervention, Old Age Home

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## I. INTRODUCTION

Osteoarthritis is one of the most common chronic degenerative joint disorders affecting elderly individuals. It is characterized by progressive degeneration of the articular cartilage, joint stiffness, pain, reduced range of motion, and difficulty in performing daily activities. As age advances, these physical limitations can affect posture, gait, and body balance, thereby increasing the risk of falls and injuries. Impaired body balance can lead to reduced mobility, loss of confidence, dependence on others, and decreased quality of life among elderly persons. Therefore, maintaining adequate balance and functional mobility is an important aspect of promoting healthy ageing and independence.

Comprehensive nursing intervention can play an important role in improving body balance and functional ability among elderly individuals with osteoarthritis. Interventions such as balance exercises, joint mobility exercises, posture training, health education, and fall-prevention strategies can help improve physical functioning and reduce the risk of falls. Nurses have an important role in assessing balance problems, providing appropriate exercises, educating elderly persons about safety measures, and encouraging independence in daily activities. Hence, the present study was undertaken to assess the effectiveness of comprehensive nursing intervention on body balance among elderly with osteoarthritis in a selected old age home, Puducherry.

## II. MATERIALS AND METHODS

### Statement of the problem:

“A study to assess the effectiveness of comprehensive nursing intervention on body balance among elderly with osteoarthritis in a selected old age home, Puducherry”.

### The Objectives of the study were:

- To assess the level of body balance among elderly with osteoarthritis in a selected old age home in Experimental and control Group
- To evaluate the effectiveness of comprehensive nursing intervention on body balance among elderly with

osteoarthritis in Experimental Group

- To find the association between the level of body balance and selected demographic variables of the elderly Experimental and control Group.

**Hypothesis:**

**H1:** There is a significant difference in the level of body balance among elderly with osteoarthritis before and after the comprehensive nursing intervention

**H2:** There is a significant association between the level of body balance among elderly with osteoarthritis and their selected demographic variables.

### **III. METHODOLOGY**

**Research approach:**

**Quantitative research approach was adopted**

**Research design:**

A quasi-experimental pre-test and post-test control group design was used.

**Setting of the study:**

The study was conducted in a selected old age home, Puducherry.

**Variables under the study:**

**Independent Variable:**

Comprehensive nursing intervention, which included balance training exercises, muscle strengthening activities, pain management techniques, joint protection strategies, health education, and fall prevention measures.

**Dependent Variable:**

Level of body balance among elderly individuals with osteoarthritis.

**Target population:**

Elderly individuals diagnosed with osteoarthritis.

**Accessible population:**

The accessible population selected for the present study included elderly individuals diagnosed with osteoarthritis who were residing in the selected old age home, Puducherry.

**Sample size:**

A total of 30 elderly individuals diagnosed with osteoarthritis were selected for the study, with 15 participants assigned to the experimental group and 15 participants assigned to the control group.

**Sampling technique:**

Non-probability purposive sampling technique was used to select the samples. The eligible elderly individuals were identified based on the inclusion and exclusion criteria. A total of 30 elderly individuals with osteoarthritis were selected and assigned to the experimental group (n=15) and control group (n=15).

**Criteria for sample selection:**

**Inclusion criteria:**

- Elderly individuals diagnosed with osteoarthritis.
- Elderly individuals who were residing in the selected old age home, Puducherry.
- Elderly individuals who were available during the period of data collection.
- Elderly individuals who were willing to participate in the study.
- Elderly individuals who were able to understand and follow the instructions given by the researcher.

**Exclusion criteria:**

- Elderly individuals with severe physical or cognitive impairment that prevented participation in the intervention.
- Elderly individuals who had undergone major orthopedic surgery recently.
- Elderly individuals who were critically ill or medically unstable during the period of data collection.
- Elderly individuals who were not willing to participate in the study.

**Data collection technique:**

**Development of an instrument:**

A standardized balance assessment tool was used to assess the level of body balance among elderly individuals with osteoarthritis.

**Data collection procedure:**

A standardized balance assessment tool was used to assess the body balance of elderly individuals with osteoarthritis. Pre-test assessment was conducted for both experimental and control groups. The experimental

group received comprehensive nursing intervention, whereas the control group received routine care. Post-test assessment was conducted after the intervention period using the same standardized balance assessment tool.

# **Description of the tool:**

The data analysis is organized under the following sections:

**Section A:** Description of demographic variables among elderly with osteoarthritis in experimental and control groups

**Section B:** Comparative the pre-test and post-test body balance levels among elderly with osteoarthritis in experimental and control groups

**Section C:** Effectiveness of the comprehensive nursing intervention on body balance among elderly with osteoarthritis in Experimental Group.

**Section D:** Association between post-test level of body balance and selected demographic variables among elderly with osteoarthritis in Experimental and Control Group

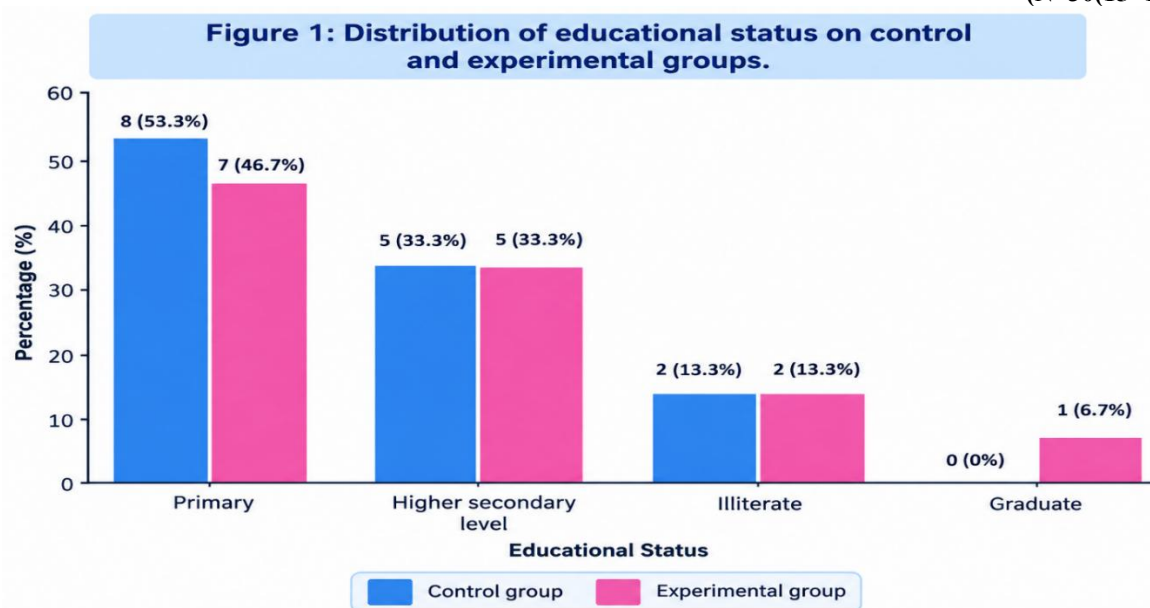
## **SECTION A: Description of Demographic Variables among Elderly with Osteoarthritis in Experimental and Control Groups**

**Table 1: Distribution of demographic variables among elderly with osteoarthritis in experimental and control groups**  
(N=30(15+15))

| S.No     | Demographic Variables       | Control Group |      | Experimental Group |      |
|----------|-----------------------------|---------------|------|--------------------|------|
|          |                             | N             | %    | N                  | %    |
| <b>1</b> | <b>Age of the person</b>    |               |      |                    |      |
| a)       | 60-69 years                 | 10            | 66.7 | 7                  | 46.7 |
| b)       | 70-79 years                 | 5             | 33.3 | 8                  | 53.3 |
| c)       | 80 years                    | 0             | 0    | 0                  | 0    |
| d)       | Above 80 years              | 0             | 0    | 0                  | 0    |
| <b>2</b> | <b>Gender of the person</b> |               |      |                    |      |
| a)       | Male                        | 0             | 0    | 0                  | 0    |
| b)       | Female                      | 15            | 100  | 15                 | 100  |
| c)       | Transgender                 | 0             | 0    | 0                  | 0    |
| <b>3</b> | <b>Religion</b>             |               |      |                    |      |
| a)       | Hindu                       | 11            | 86.7 | 10                 | 66.7 |
| b)       | Christian                   | 4             | 26.7 | 4                  | 26.7 |
| c)       | Muslim                      | 0             | 0    | 1                  | 6.7  |
| d)       | Others                      | 0             | 0    | 0                  | 0    |
| <b>4</b> | <b>Marital Status</b>       |               |      |                    |      |
| a)       | Married                     | 13            | 86.7 | 6                  | 40   |
| b)       | Single                      | 1             | 6.7  | 7                  | 46.7 |
| c)       | Divorced                    | 1             | 6.7  | 2                  | 13.3 |

**Table 1:**The table presents the frequency and percentage-wise distribution of demographic characteristics of elderly with osteoarthritis in both the control and experimental groups. Regarding the age, in control group , majority of clients 10 (66.7%) were in the age group of 60-69 years, 5 (33.3%) were in the age group of (70-79) years whereas in experimental group 8(53.3%) were in the age group of 70-79 years,7(46.7%) were in the age group of 60-69 years. With regards to the Gender , majority of clients in both experimental and control group 15 (100%) were female. In the aspect of religion,11(86.7%) were Hindu, 4(26.7%) were christian in control group whereas in experimental group 10(66.7%) were Hindu, 4 (26.7%) were christian,1(6.7%) were Muslim. With regards of Marital status 13(86.7%) were married 1(6.7%) were single,1(6.7%) were divorced in control group whereas in experimental group 7(46.7%) were single,6(40%) were married and 2(13.3%) were divorced

(N=30(15+15))



**Figure 1: Distribution of educational status on control and experimental groups.**

The above figure depicted that the educational status of control group 8(53.3%) were primary,5(33.3%) were Higher secondary level,2(13.3%) were illiterate whereas in experimental group 7(46.7%) were primary,5(33.3%) were higher secondary level, 2 (13.3%) were illiterate and 1(6.7%) were graduate .

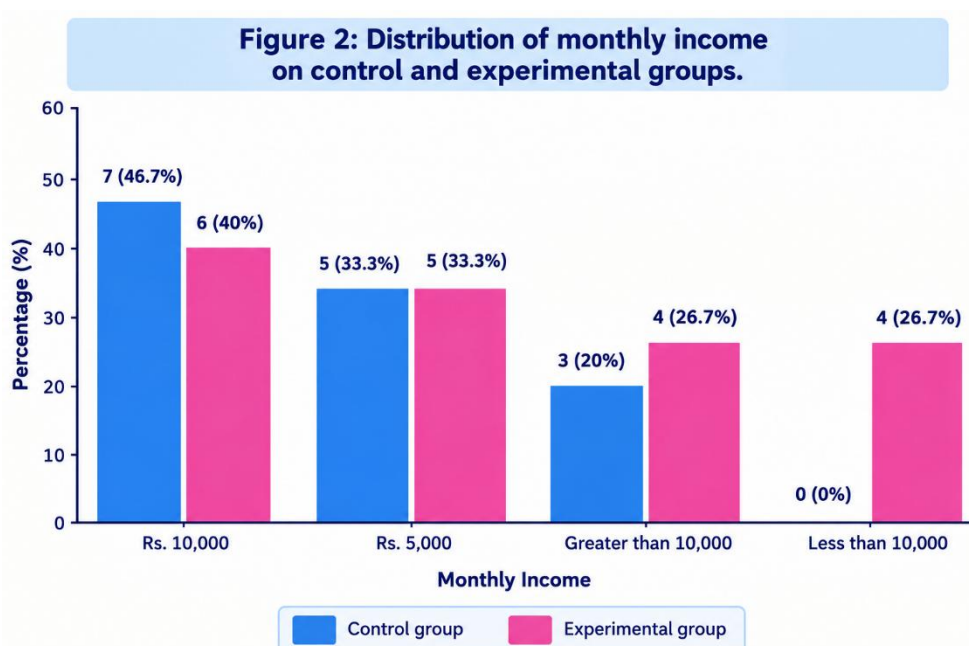
**Table 2: Distribution of the demographic variables of clients among elderly with osteoarthritis in experimental and control group.**

| S.NO     | DEMOGRAPHIC VARIABLES                    | CONTROL GROUP |      | EXPERIMENTAL GROUP |      |
|----------|------------------------------------------|---------------|------|--------------------|------|
|          |                                          | N             | %    | N                  | %    |
| <b>1</b> | <b>Co- morbidities</b>                   |               |      |                    |      |
| a)       | Hypertension                             | 6             | 40   | 2                  | 13.3 |
| b)       | Diabetes                                 | 5             | 33.3 | 7                  | 46.7 |
| c)       | Cardiovascular disease                   | 2             | 13.3 | 6                  | 40   |
| d)       | Others                                   | 2             | 13.3 | 0                  | 0    |
| <b>2</b> | <b>Mobility status</b>                   |               |      |                    |      |
| a)       | Independent                              | 3             | 20   | 5                  | 33.3 |
| b)       | Need assistance                          | 12            | 80   | 6                  | 40   |
| c)       | Bedridden                                | 0             | 0    | 4                  | 26.7 |
| <b>3</b> | <b>Past treatment for osteoarthritis</b> |               |      |                    |      |
| a)       | Allopathic                               | 4             | 26.7 | 4                  | 26.7 |
| b)       | Ayurvedic                                | 6             | 40   | 7                  | 46.7 |
| c)       | Physiotherapy                            | 5             | 33.3 | 4                  | 26.7 |
| d)       | Home remedies                            | 0             | 0    | 0                  | 0    |
| <b>4</b> | <b>Diet pattern</b>                      |               |      |                    |      |
| a)       | Vegetarian                               | 4             | 26.7 | 4                  | 26.7 |
| b)       | Non- vegetarian                          | 6             | 40   | 6                  | 40   |
| c)       | Mixed                                    | 5             | 33.3 | 4                  | 26.7 |

**Table 2:** The above table depicted that the comorbidities of control group 6(40%) were hypertension, 5(33.3%) were diabetes, 2(13.3%) were cardiovascular disease, 2(13.3%) were others whereas in experimental group 7(46.7%) were diabetes, 6(40%) were cardiovascular disease, 2(13.3%) were hypertension. In mobility status of control group 12(80%) were need assistance, 3(20%) were independent whereas in experimental group 6(40%) were need assistance, 5(33.3%) were independent, 4(26.7%) were bedridden. With regards to the past treatment in control group 6(40%) were ayurvedic, 5(33.3%) were physiotherapy, 4(26.7%) were allopathy, whereas in experimental group 7(46.7%) were ayurvedic, 4(26.7%) were allopathy and physiotherapy. In dietary pattern of control group 6(40%) were non-vegetarian, 5(33.3%) were mixed, 4(26.7%) were vegetarian, whereas in experimental group 6(40%) were non-vegetarian, 4(26.7%) were vegetarian and mixed.

**Figure 2: Distribution of monthly income on control and experimental groups**

The figure depicts that monthly income of control group 7(46.7%) belong to an income of Rs.10,000, 5(33.3%) belongs to an income of Rs.5,000, 3(20%) belongs to greater than 10,000 whereas in experimental group 6(40%) belongs to an income of Rs.10,000, 5(33.3%) belongs to an income of Rs.5,000, 4(26.7%) belongs to an income less than 10,000



## SECTION B: Assessment of Pre-Test and Post-Test Body Balance Levels among Elderly with Osteoarthritis

**Table 3: Distribution of level of fall risk based on body balance scores among elderly with osteoarthritis in experimental and control groups (Pre-test and Post-test)**

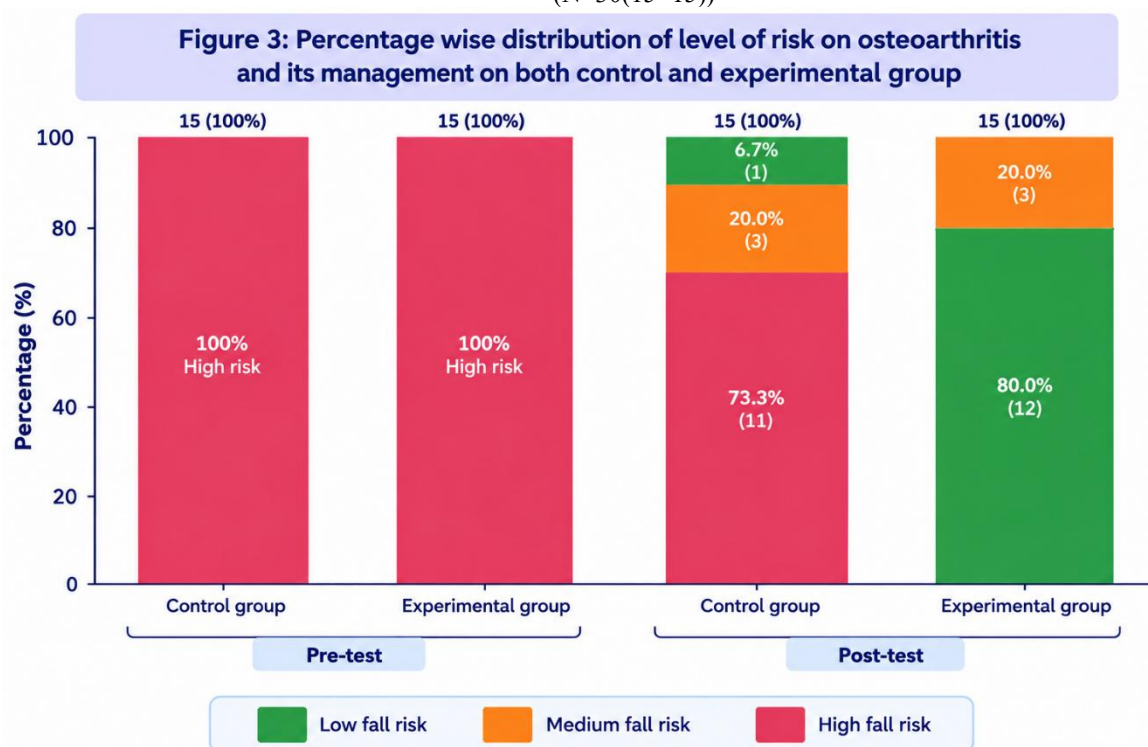
(N=30(15+15))

| SL. NO | LEVEL OF KNOWLEDGE | CONTROL GROUP |     |           |      | EXPERIMENTAL GROUP |     |           |    |
|--------|--------------------|---------------|-----|-----------|------|--------------------|-----|-----------|----|
|        |                    | PRE TEST      |     | POST TEST |      | PRE TEST           |     | POST TEST |    |
|        |                    | N             | %   | N         | %    | N                  | %   | N         | %  |
| 1      | High risk          | 15            | 100 | 11        | 73.3 | 15                 | 100 | 0         | 0  |
| 2      | Medium risk        | 0             | 0   | 4         | 26.7 | 0                  | 0   | 3         | 20 |
| 3      | Low risk           | 0             | 0   | 0         | 0    | 0                  | 0   | 12        | 80 |

**Table 3** depicts the distribution of elderly participants according to their level of fall risk based on body balance scores in both experimental and control groups before and after the intervention. In the pre-test, all participants in both groups 15 (100%) were categorized under high fall risk. In the post-test, the control group continued to show a majority under high fall risk, whereas in the experimental group, a marked shift was observed, with 12 (80%) participants moving to the low fall risk category and 3 (20%) to the medium fall risk category. This indicates improvement in body balance following the comprehensive nursing intervention.

**Fig:3 Percentage wise distribution of level of risk on osteoarthritis and its management on both control and experimental group**

(N=30(15+15))



**Figure 3: Distribution of level of risk on control and experimental groups.**

#### SECTION C: Effectiveness of the Comprehensive Nursing Intervention on Body Balance

**Table 4: Effectiveness of comprehensive nursing intervention on body balance among elderly with osteoarthritis in experimental and control groups**

(N=30(15+15))

| Sl.No | Effectiveness Of Knowledge | Control Group |           | Experimental Group |           |
|-------|----------------------------|---------------|-----------|--------------------|-----------|
|       |                            | Pre Test      | Post Test | Pre Test           | Post Test |
| 1     | Mean                       | 14.93         | 16.40     | 16.27              | 44.40     |
| 2     | Standard deviation         | 2.086         | 2.947     | 1.387              | 2.530     |
| 3     | P value                    | 0.05          |           | 0.05               |           |

**\*\* -p < 0.001 highly significant, NS – Non significant**

**Table 4** shows that the comprehensive nursing intervention significantly improved body balance among elderly with osteoarthritis. The experimental group's mean score increased from  $16.27 \pm 1.387$  to  $44.40 \pm 2.530$ , while the control group showed only a slight increase from  $14.93 \pm 2.086$  to  $16.40 \pm 2.947$ . Thus, the intervention was effective in improving body balance and reducing fall risk.

**SECTION D: Association between Post-Test Level of Body Balance and Selected Demographic Variables**

**Table 5: Association between selected demographic variables and post-test body balance scores in the control group**

(N=15)

| Sl. No | Demographic Variables | Categories     | Pre- test High n (%) | Post- test High n (%) | Post- test Medium n (%) | $\chi^2$ | df | p- value | Result |
|--------|-----------------------|----------------|----------------------|-----------------------|-------------------------|----------|----|----------|--------|
| 1      | Age of the person     | 60–69 years    | 10<br>(66.7)         | 8<br>(53.3)           | 2 (13.3)                | 0.682    | 1  | 0.409    | NS     |
|        |                       | 70–79 years    | 5<br>(33.3)          | 3 (20)                | 2 (13.3)                |          |    |          |        |
|        |                       | 80 years       | 0 (0)                | 0 (0)                 | 0 (0)                   |          |    |          |        |
|        |                       | Above 80 years | 0 (0)                | 0 (0)                 | 0 (0)                   |          |    |          |        |
| 2      | Gender                | Male           | 0 (0)                | 0 (0)                 | 0 (0)                   | –        | –  | –        | K      |
|        |                       | Female         | 15<br>(100)          | 11<br>(73.3)          | 4 (26.7)                |          |    |          |        |
|        |                       | Transgender    | 0 (0)                | 0 (0)                 | 0 (0)                   |          |    |          |        |
| 3      | Religion              | Hindu          | 11<br>(73.3)         | 9 (60)                | 2 (13.3)                | 1.519    | 1  | 0.218    | NS     |
|        |                       | Christian      | 4<br>(26.7)          | 2<br>(13.3)           | 2 (13.3)                |          |    |          |        |
|        |                       | Muslim         | 0 (0)                | 0 (0)                 | 0 (0)                   |          |    |          |        |
|        |                       | Others         | 0 (0)                | 0 (0)                 | 0 (0)                   |          |    |          |        |
| 4      | Marital Status        | Married        | 13<br>(86.7)         | 10<br>(66.7)          | 3 (20)                  | 3.199    | 2  | 0.202    | NS     |
|        |                       | Single         | 1<br>(6.7)           | 0 (0)                 | 1 (6.7)                 |          |    |          |        |
|        |                       | Divorced       | 1<br>(6.7)           | 1<br>(6.7)            | 0 (0)                   |          |    |          |        |

**\*\* $-p < 0.001$  Highly Significant, \* $-p < 0.05$  significant, NS-Non significant**

Table 5 depicts the association between age, gender, religion, and marital status with post- test level. The chi-square analysis showed no statistically significant association between these demographic variables and post-test level at  $p < 0.05$ .

**Table 6: Association between selected demographic variables and post-test body balance scores in the control group**

| Sl. No | Demographic Variables | Categories | Pre- test High n (%) | Post- test High n (%) | Post- test Medium n (%) | $\chi^2$ | df | p- value | Result |
|--------|-----------------------|------------|----------------------|-----------------------|-------------------------|----------|----|----------|--------|
| 1      | Monthly Income        | ₹5000      | 5<br>(33.3)          | 4<br>(26.7)           | 1 (6.7)                 | 3.117    | 2  | 0.210    | NS     |
|        |                       | ₹10,000    | 7<br>(46.7)          | 6 (40)                | 1 (6.7)                 |          |    |          |        |
|        |                       | > ₹10,000  | 3 (20)               | 1<br>(6.7)            | 2 (13.3)                |          |    |          |        |
| 2      | Physical Activity     | Sedentary  | 5<br>(33.3)          | 4<br>(26.7)           | 1 (6.7)                 | 0.682    | 2  | 0.711    | NS     |
|        |                       | Moderate   | 9 (60)               | 6 (40)                | 3 (20)                  |          |    |          |        |

|   |                         |                    |              |             |          |       |   |       |    |
|---|-------------------------|--------------------|--------------|-------------|----------|-------|---|-------|----|
|   |                         | Active             | 1<br>(6.7)   | 1<br>(6.7)  | 0 (0)    |       |   |       |    |
| 3 | Bad Habits              | Never              | 11<br>(73.3) | 7<br>(46.7) | 4 (26.7) | 1.983 | 1 | 0.156 | NS |
|   |                         | Past               | 4<br>(26.7)  | 4<br>(26.7) | 0 (0)    |       |   |       |    |
|   |                         | Current            | 0 (0)        | 0 (0)       | 0 (0)    |       |   |       |    |
| 4 | Mobility<br>Affected by | Pain<br>severity   | 4<br>(26.7)  | 3 (20)      | 1 (6.7)  | 7.330 | 3 | 0.062 | NS |
|   |                         | Joint<br>stiffness | 6 (40)       | 6 (40)      | 0 (0)    |       |   |       |    |
|   |                         | Swelling           | 4<br>(26.7)  | 1<br>(6.7)  | 3 (20)   |       |   |       |    |
|   |                         | Balance &<br>gait  | 1<br>(6.7)   | 1<br>(6.7)  | 0 (0)    |       |   |       |    |

**\*\* $-p < 0.001$  Highly Significant, \* $-p < 0.05$  significant, NS-Non significant**

Table 6 reveals that monthly income, physical activity, bad habits, and factors affecting mobility had no statistically significant association with post-test level at the 0.05 level of significance.

**Table 7: Association between selected demographic variables and post-test body balance scores in the experimental group**

**(N=15)**

| Sl. No | Demographic Variables | Categories     | Pre- test High n (%) | Post- test Low n (%) | Post- test Mediumn (%) | $\chi^2$   | df | p- value | Result |
|--------|-----------------------|----------------|----------------------|----------------------|------------------------|------------|----|----------|--------|
| 1      | Age of the person     | 60–69 years    | 7<br>(46.7)          | 4<br>(26.7)          | 3 (20)                 | 4.286<br>* | 1  | 0.038    | S      |
|        |                       | 70–79 years    | 8<br>(53.3)          | 8<br>(53.3)          | 0 (0)                  |            |    |          |        |
|        |                       | 80 years       | 0 (0)                | 0 (0)                | 0 (0)                  |            |    |          |        |
|        |                       | Above 80 years | 0 (0)                | 0 (0)                | 0 (0)                  |            |    |          |        |
| 2      | Gender of the person  | Male           | 0 (0)                | 0 (0)                | 0 (0)                  | —          | —  | —        | K      |
|        |                       | Female         | 15<br>(100)          | 12<br>(80)           | 3 (20)                 |            |    |          |        |
|        |                       | Transgender    | 0 (0)                | 0 (0)                | 0 (0)                  |            |    |          |        |
| 3      | Religion              | Hindu          | 10<br>(66.7)         | 9 (60)               | 1 (6.7)                | 3.125      | 2  | 0.210    | NS     |
|        |                       | Christian      | 4<br>(26.7)          | 2<br>(13.3)          | 2 (13.3)               |            |    |          |        |
|        |                       | Muslim         | 1<br>(6.7)           | 1<br>(6.7)           | 0 (0)                  |            |    |          |        |
|        |                       | Others         | 0 (0)                | 0 (0)                | 0 (0)                  |            |    |          |        |
| 4      | Marital Status        | Married        | 6 (40)               | 6 (40)               | 0 (0)                  | 2.946      | 2  | 0.229    | NS     |
|        |                       | Single         | 7<br>(46.7)          | 5<br>(33.3)          | 2 (13.3)               |            |    |          |        |
|        |                       | Divorced       | 2<br>(13.3)          | 1<br>(6.7)           | 1 (6.7)                |            |    |          |        |

**\*\* $-p < 0.001$  Highly Significant, \* $-p < 0.05$  significant, NS-Non significant**

Table 7 depicts the association between age, gender, religion, and marital status with post- test level. Age showed a statistically significant association with post-test level ( $p < 0.05$ ), whereas gender, religion, and marital status did not show any significant association.

**Table 8: Association between selected demographic variables and post-test body balance scores in the experimental group**

| Sl. No | Demographic Variables | Categories             | Pre- test High n (%) | Post- test Low n (%) | Post- test Medium n (%) | $\chi^2$  | df | p-value   | Result |
|--------|-----------------------|------------------------|----------------------|----------------------|-------------------------|-----------|----|-----------|--------|
| 1      | Co-morbidities        | Hypertension           | 2<br>(13.3)          | 1<br>(6.7)           | 1 (6.7)                 | 1.31<br>0 | 2  | 0.52<br>0 | NS     |
|        |                       | Diabetes               | 7<br>(46.7)          | 6<br>(40)            | 1 (6.7)                 |           |    |           |        |
|        |                       | Cardiovascular disease | 6<br>(40)            | 5<br>(33.3)          | 1 (6.7)                 |           |    |           |        |
|        |                       | Others                 | 0 (0)                | 0 (0)                | 0 (0)                   |           |    |           |        |
| 2      | Mobility Status       | Independent            | 5<br>(33.3)          | 3<br>(20)            | 2 (13.3)                | 2.29<br>2 | 2  | 0.31<br>8 | NS     |
|        |                       | Need assistance        | 6<br>(40)            | 5<br>(33.3)          | 1 (6.7)                 |           |    |           |        |
|        |                       | Bedridden              | 4<br>(26.7)          | 4<br>(26.7)          | 0 (0)                   |           |    |           |        |
| 3      | Past Treatment        | Allopathic             | 4<br>(26.7)          | 3<br>(20)            | 1 (6.7)                 | 1.38<br>4 | 2  | 0.50<br>1 | NS     |
|        |                       | Ayurvedic              | 7<br>(46.7)          | 5<br>(33.3)          | 2 (13.3)                |           |    |           |        |
|        |                       | Physiotherapy          | 4<br>(26.7)          | 4<br>(26.7)          | 0 (0)                   |           |    |           |        |
|        |                       | Home remedies          | 0 (0)                | 0 (0)                | 0 (0)                   |           |    |           |        |
| 4      | Diet Pattern          | Vegetarian             | 4<br>(26.7)          | 3<br>(20)            | 1 (6.7)                 | 1.97<br>9 | 2  | 0.37<br>2 | NS     |
|        |                       | Non-vegetarian         | 6<br>(40)            | 4<br>(26.7)          | 2 (13.3)                |           |    |           |        |
|        |                       | Mixed                  | 5<br>(33.3)          | 5<br>(33.3)          | 0 (0)                   |           |    |           |        |
|        |                       |                        |                      |                      |                         |           |    |           |        |

**\*\* $-p < 0.001$  Highly Significant, \* $-p < 0.05$  significant, NS-Non significant**

Table 8 indicates that co-morbidities, mobility status, past treatment, and diet pattern were not significantly associated with post-test level.

### **NURSING IMPLICATIONS:**

The findings of the study have implications in the areas of nursing education, nursing practice, nursing administration, and nursing research.

#### **Nursing Education:**

- Nursing curricula should include geriatric balance assessment and fall prevention strategies.
- Student nurses should be trained in non-pharmacological interventions for osteoarthritis.
- Clinical exposure in old age homes should be encouraged.
- Students should be provided with adequate opportunities for developing skills in handling such clients and how to identify the difficulties and help them to provide comfort and wellbeing.

#### **Nursing Practice:**

- Nurses should routinely assess balance and fall risk among elderly with osteoarthritis.
- Comprehensive nursing interventions should be incorporated into routine geriatric care.
- Nurses should educate elderly individuals on safe mobility and balance exercises.

### **Nursing Administration**

- Administrators should implement structured balance enhancement programs in old age homes.
- Adequate staffing should be ensured for effective intervention delivery.
- Policies should support regular balance screening and fall prevention.

### **Nursing Research**

- Further research is needed on long-term effects of nursing interventions on balance.
- Comparative studies can be conducted on different balance training methods.
- Larger sample size studies are recommended for generalization.

## **IV. RECOMMENDATIONS**

- Periodic screening of **musculoskeletal strength and joint mobility** should be included in routine geriatric care.
- **Assistive devices** such as walkers and handrails should be encouraged to improve safety and confidence during ambulation.
- The same study can be conducted with the experimental research design.
- The same study can be done as a comparative study in different setting.
- Nurses should implement **balance training and fall-prevention programs** as part of institutional protocols.
- **Individualized exercise programs** should be planned according to the severity of osteoarthritis and balance impairment.

## **V. CONCLUSION**

The study concludes that comprehensive nursing intervention effectively improves body balance among elderly individuals with osteoarthritis. Structured interventions, including balance training, pain management, joint protection, and fall prevention, contributed to better functional mobility. Age and educational status influenced the improvement, highlighting the need for individualized nursing care. Overall, nurses play a vital role in reducing fall risk, improving mobility, and enhancing quality of **life** among elderly individuals with osteoarthritis.

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