# Intervenciones de enfermería en el deterioro de regulación del estado de ánimo en adultos mayores

*Nursing interventions in impaired mood regulation in older adults*

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**Palabras claves:**

Adulto Mayor; Demencia; Depresión; Regulación Emocional; Calidad de Vida.

**Resumen**

**Introducción.** La alta prevalencia de trastornos de deterioro del estado de ánimo en adultos mayores con demencia conlleva a efectos negativos en la calidad de vida. Como intervención no farmacológica para este padecimiento se propone la Doll Therapy o terapia asistida con muñecos, fundamentada en teorías del apego, objeto transicional y enfoque centrado en la persona. **Objetivo.** Determinar el efecto de las intervenciones de enfermería en el deterioro de regulación del estado de ánimo en adultos mayores. **Metodología.** Estudio cuantitativo, cuasiexperimental y longitudinal, realizado en 18 adultos mayores institucionalizados con demencia. Se aplicó el Mini Mental Test y el Inventario Diferencial de Adjetivos para el Estado de Ánimo (IDDA-EA) antes y después de la intervención con *Doll Therapy* durante 4 semanas, con 3 sesiones semanales con una duración de 60 minutos cada una. **Resultados.** Los participantes presentaron demencia según el Mini Mental Test. El IDDA-EA pre-intervención reveló bajos niveles de activación, altos niveles de estrés y disminución del arousal. Tras la *Doll Therapy*, se encontraron mejoras estadísticamente significativas en la dimensión de activación (p=0,025), reflejando un aumento en los niveles de energía, interés y disposición. **Conclusión.** La *Doll Therapy* demostró ser una intervención de enfermería efectiva para mejorar la regulación del estado de ánimo en adultos mayores institucionalizados con demencia, específicamente en la dimensión de activación. Se recomienda extender el tiempo de aplicación para consolidar efectos positivos en las dimensiones de estrés y arousal. **Área de estudio general:** Salud Humana. **Área de estudio específica:** Enfermería. **Tipo de estudio:** Artículos originales.

**Keywords:**

Older Adult; Dementia; Depression; Emotional regulation; Quality of Life

**Abstract**

**Introduction.** The high prevalence of mood impairment disorders in older adults with dementia leads to negative effects on quality of life. Doll Therapy or doll-assisted therapy is proposed as a non-pharmacological intervention for this condition, based on theories of attachment, transitional object, and person-centered approach. objective. Determine the effect of nursing interventions on the deterioration of mood

regulation in older adults. Methodology. Quantitative, quasi-experimental and longitudinal study, conducted in 18 institutionalized older adults with dementia. The Mini Mental Test and the Differential Inventory of Adjectives for Mood State (IDDA-EA) were applied before and after the intervention with Doll Therapy for 4 weeks, with 3 weekly sessions lasting 60 minutes each. Results. The participants presented dementia according to the Mini Mental Test. The pre-intervention IDDA-EA revealed low levels of activation, elevated levels of stress and decreased arousal. After Doll Therapy, statistically significant improvements were found in the activation dimension (p=0.025), reflecting an increase in energy, interest, and disposition levels. Conclusion. Doll Therapy proved to be an effective nursing intervention to improve mood regulation in institutionalized older adults with dementia, specifically in the activation dimension. It is recommended to extend the application time to consolidate positive effects on the dimensions of stress and arousal.

## Introduction

The World Health Organization (WHO) (1) adopted the term active aging at the end of the 20th century, in order to recognize a series of factors and areas that positively affect aging. Therefore, we can define it as the process of physical, functional, psychological and social changes(2). Numerous sociodemographic studies show a collective increase in older people, given that the population pyramid in Spain between 2018 and 2033 supports a change in the decline in birth and mortality rates, so it is extremely important to advance education in older people, so that a significant part of this group is fully active.(3).

According to WHO, depression is a serious illness that interferes with daily life, with the ability to work, sleep, study, eat and enjoy life. Depression is caused by a combination of genetic, biological, environmental and psychological factors.(4)It is estimated that, worldwide, 5-8% of the older adult population suffers from depression, this being the main cause of deterioration in the quality of life in this age group (5). On the other hand, a meta-analysis published in 2022 determined an average prevalence of depression of 10.1% in institutionalized older adults globally (6).

At the international level, in Mexico the National Institute of Geriatrics reported in 2021 a prevalence of depression of 30% in adults over 60 years of age (7). While, in Chile, a 2020 study revealed a prevalence of depression of 25.7% in older adults residing in long-

stay facilities (8). In Ecuador, according to the Health, Well-being and Aging Survey (SABE, 2009-2010) 39% of adults over 75 years of age have mild or moderate depression, since life expectancy is currently 72.7 years in men and 78.1 years in women.(9, 10).

Dementia is a major medical condition affecting an estimated 47.5 million people worldwide, and the (WHO) expects the number to rise to 75.6 million by 2030. Dementia carries a significant responsibility and is overwhelming for both the patient, caregiver and families. This is an even greater problem in the advanced stages of dementia as patients develop behavioral and psychological symptoms of dementia (BPSD). BPSD is associated with increased caregiving burden, higher levels of caregiver stress, anxiety, depression and higher morbidity, institutionalization and mortality rates of patients (1, 3).

We must mention that the deterioration of mood regulation is a mental state characterized by changes in mood or affect, accompanied by affective, cognitive, physical and/or physiological manifestations that vary from mild to severe, which is characterized by abandonment, sad attitude, psychomotor agitation, excessive self-consciousness, affected self-esteem, excessive self-blame, changes in verbal behavior.11, 12). The presence of dementia doubles the probability of developing depression. In these people, depression may represent an adjustment reaction to the perception of cognitive loss, but it may also be a reflection of underlying brain damage. In this sense, dementia has been established as a risk factor for depression (13).

To address this problem, Doll Therapy is established, which consists of the use of therapeutic dolls in a variety of interventions to influence the mood of older adults with dementia. Therefore, doll therapy means working on the subconscious, since it is a process of projecting onto dolls everything we have in our subconscious: expectations, memories, values, beliefs.(14). Therefore, it can be carried out both individually and in a group and stimulates patients in the cognitive-affective spheres, thus preventing the person's disorder from progressing or stagnating, this evolution being a gradual process.(15).

This research aims to determine the effect of nursing intervention on the deterioration of mood regulation in older adults, taking into account changes in mood or affect for their physical and mental development, through non-pharmacological intervention such as Doll Therapy to reduce psychological and behavioral symptoms in older people with dementia.

**Methodology**

This study adopts a quantitative approach, since it facilitates concentration on numerical and statistical analysis.(16), with a longitudinal quasi-experimental design, characterized by the continuous evaluation of a specific group of individuals(17), and of comparative

scope, since it sought to find differences in the result of the treatment implemented during the period September 2023 - February 2024. To which the following inclusion criteria were applied: subjects aged 65 years or older, residents for at least one year in the Sagrado Corazón de Jesús Nursing Home and with dementia. For the exclusion criteria, the following were applied: older adults with mental disorders (schizophrenia, bipolarity, among others) and with the presence of a disability (hearing, visual or physical). The sample consisted of older adults who met the inclusion and exclusion criteria.

The instrument used was the "Mini Mental Test" with a Cronbach's Alpha reliability greater than or equal to 0.9. This test evaluates memory, orientation, concentration and language. The items include topics such as life satisfaction, memory problems and reading. Each correct answer is scored with one point, with a maximum score of 30. In addition, sociodemographic information was collected such as: sex, age range, marital status, education level, words that come to mind when hearing elderly, current illness, disability, mental disorders and economic benefits that helped to meet all the parameters (14).

Once the sample was selected using the "Mini Mental Test", the Differential Adjective Inventory for the Study of Mood State (IDDA-EA) was applied to all people with dementia, with Cronbach's alpha 0.80. This model is a form of objective and comprehensive evaluation of three factors that are activation, stress and arousal of the individual self-perception of the energy potential that each person experiences at all times, all this in order to correctly interpret and attribute the mood of each older adult.

Later, Doll Therapy was applied, which aims to promote attachment, company and utility in people with dementia to increase their well-being and minimize the appearance of challenging behaviors. It is mainly based on the combination of three theories: attachment theory, transitional object theory and person-centered theory. The therapy was applied for 4 weeks, with 3 sessions per week, for 60 minutes. The first week, the attachment theory of the elderly to the doll was carried out, which postulates the need that the person has to establish emotional bonds in the face of unknown situations, fear or danger (14, 15).

The second week, the transactional object theory was applied, which is based on the calming properties that help relieve and reduce anxiety and especially dementia. For the transactional object theory, each older adult was told that they could interact, cuddle, hold and remember happy events from their childhood once they stared at the doll in this way to see their mood, stress, feeling of loneliness, as well as self-esteem and their state of happiness. The third week, the person-centered theory was applied, which places the individual at the center of attention, being supported and trained in the decision-making process (14, 15).

The fourth week, the three theories were applied together, in which it was explained to each older adult that they could hold the doll for as long as he/she wanted in order to notice how each person acts with the doll. It was evident that there were changes in the mood (14, 15).

The data were analyzed in SPSS version 25, which produced statistical tables for analysis.

The ethical guidelines that guided this study were based on the Declaration of Helsinki, taking into account the ethical principles of autonomy, respect and confidentiality. In order to comply with these principles, the participants signed the informed consent. Regarding the data collected, they were handled confidentially by assigning codes to them, complying with legal requirements. Access to personal information was restricted to authorized persons.

## Results

### Sociodemographic information

Table 1 shows that, in terms of sex, there is a relatively equal distribution between men (44.4%) and women (55.6%). Most of them are between 70 and 74 years old (44.4%). Regarding their current marital status, most of them are single (66.7%). In relation to their residence, all of the participants have been in the Sagrado Corazón de Jesús Nursing Home for 1 year. In proportion to their educational level, there is a predominance of older adults without any formal education (38.9%). The words that come to mind when hearing "elderly" most of them indicate terms with negative connotations such as "useless" and "incapable" (55.6%) or "hindrance", "supported" and "sick" (44.4%).

In the current disease, 100% of participants have Alzheimer's or other dementias.

**Table 1**. Sociodemographic

| Variables | Categories | Frequency | Percentage |
|---|---|---|---|
| Sex | Man | 8 | 44.4 |
| | Women | 10 | 55.6 |
| Age range | 65-69 | 2 | 11.1 |
| | 70-74 | 8 | 44.4 |
| | 75-79 | 6 | 33.3 |
| | 80-84 | 2 | 11.1 |
| Marital status | Single | 12 | 66.7 |
| | Divorced | 6 | 33.3 |

|  |  |  |  |
|---|---|---|---|
|  | Widowed/widower | 2 | 11.1 |
| Education level | None | 7 | 38.9 |
|  | Primary | 4 | 22.2 |
|  | Baccalaureate | 5 | 27.8 |
|  | Professional | 2 | 11.1 |
| Words that come to mind when you hear senior citizen | Useless, incapable, old | 10 | 55.6 |
|  | Hindrance, kept, sick | 8 | 44.4 |
| Current illness | Alzheimer's and other dementias | 18 | 100 |
| Disability | None | 18 | 100 |
| Mental disorders | None | 18 | 100 |
| Economic benefit | Retirement | 2 | 11.1 |
|  | Benefit for dependent persons | 4 | 22.2 |
|  | Unknown | 12 | 66.7 |

### Mini Mental Test Questionnaire

The results in Table 2 confirm the diagnosis of dementia in the 18 elderly participants. 22.2% were able to orient themselves correctly in time. Consequently, difficulties were found in immediate memory (recalling 3 words) in 11 participants (61.1%) and also in delayed memory (recalling the same 3 words later) in 15 participants (83.3%). Attention and calculation were compromised, with only 3 participants (16.7%) correctly performing the series of subtractions requested. Regarding language and construction praxis, 11 participants (61.1%) correctly named common objects, 7 (38.9%) repeated a given sentence; but none successfully copied a simple drawing.

**Table 2.** Mini mental test

| Dimensions | YEAH | % | NO | % | TOTAL |
|---|---|---|---|---|---|
| Orientation in time | 4 | 22.2 | 14 | 78.8 | 18 (100%) |
| Orientation in space | 7 | 38.9 | 11 | 61.1 | 18 (100%) |
| Memory | 7 | 38.9 | 11 | 61.1 | 18 (100%) |
| Attention and calculation | 3 | 16.7 | 15 | 83.3 | 18 (100%) |
| Delayed memory | 3 | 16.7 | 15 | 83.3 | 18 (100%) |
| Denomination | 11 | 61.1 | 7 | 38.9 | 18 (100%) |

| | | | | | |
|---|---|---|---|---|---|
| Repetition of a phrase | 7 | 38.9 | 11 | 61.1 | 18 (100%) |
| Understanding – Execution of order | 8 | 44.4 | 10 | 55.6 | 18 (100%) |
| Reading | 2 | 11.1 | 16 | 88.9 | 18 (100%) |
| Writing | 0 | 0 | 18 | 100 | 18 (100%) |
| Copy of a drawing | 0 | 0 | 18 | 100 | 18 (100%) |

*Inventory of Differential Adjectives for the Study of Mood State (IDDA-EA) Questionnaire*

Table 3 shows the results of the variations in the scores of the Activation, Stress and Arousal factors of the Differential Adjective Inventory for the Study of Mood (IDDA-EA), making the comparison before and after the application of doll-assisted therapy or Doll Therapy.

**Table 3.** *Inventory of Differential Adjectives for the Study of Mood State (IDDA-EA) Questionnaire*

| Participant | Sex | Enneatype Pre Activation | Enneatype Post Activation | Pre Stress Enneatype | Post Stress Enneatype | Arousal Pre Enneatype | Enneatype Arousal Post |
|---|---|---|---|---|---|---|---|
| 1 | Man | 6 | 8 | 9 | 9 | 9 | 9 |
| 2 | Women | 1 | 3 | 5 | 7 | 5 | 7 |
| 3 | Women | 2 | 4 | 6 | 8 | 6 | 8 |
| 4 | Women | 5 | 7 | 9 | 9 | 9 | 9 |
| 5 | Man | 8 | 9 | 9 | 9 | 9 | 9 |

**Table 3.** *Inventory of Adjectives Differential Mood Disorder (IDDA-EA) Questionnaire (continued)*

| Participant | Sex | Enneatype Pre Activation | Enneatype Post Activation | Pre Stress Enneatype | Post Stress Enneatype | Arousal Pre Enneatype | Enneatype Arousal Post |
|---|---|---|---|---|---|---|---|
| 6 | Man | 4 | 5 | 5 | 7 | 4 | 5 |
| 7 | Man | 2 | 4 | 6 | 5 | 2 | 4 |
| 8 | Women | 4 | 6 | 8 | 9 | 8 | 9 |
| 9 | Man | 9 | 5 | 9 | 7 | 9 | 5 |
| 10 | Women | 1 | 3 | 5 | 6 | 2 | 4 |
| 11 | Man | 1 | 3 | 9 | 7 | 4 | 3 |
| 12 | Women | 3 | 5 | 7 | 9 | 7 | 9 |
| 13 | Man | 3 | 4 | 7 | 6 | 3 | 5 |
| 14 | Women | 2 | 4 | 6 | 8 | 6 | 8 |
| 15 | Man | 1 | 4 | 5 | 6 | 3 | 4 |
| 16 | Women | 1 | 2 | 9 | 6 | 9 | 6 |
| 17 | Women | 4 | 5 | 8 | 9 | 8 | 9 |
| 18 | Women | 1 | 2 | 5 | 5 | 5 | 4 |

*Hypothesis formulation for the dimensions of the IDDA questionnaire*

*Activation*

**H1:**There is a difference in the activation of the mood of older adults after Doll Therapy treatment.

H0: There is no difference in mood activation of older adults after Doll Therapy treatment.

*Stress*

**H1:**There is a difference in stress in older adults after Doll Therapy treatment.

H0: There is no difference in stress in older adults after Doll Therapy treatment.

**Arousal.**

**H1:**There is a difference in Arousal of older adults after Doll Therapy treatment.

H0: There is no difference in Arousal of older adults after Doll Therapy treatment.

After verifying the normal distribution of the 18 data of the 3 dimensions before and after, normal distribution was evident only in the significance value of the Shapiro-Wilk test for activation Post = 0.132 > 0.05, therefore, the nonparametric Wilconsox T test was chosen for the 3 dimensions.

**Table 4.** *Shapiro-Wilk test*

| ENNEATYPES | Kolmogorov-Smirnova | | | Shapiro-Wilk | | |
|---|---|---|---|---|---|---|
| | Statistical | gl | Next. | Statistical | gl | Next. |
| Pre Activation | 0.174 | 18 | 0.157 | 0.853 | 18 | 0.010 |
| Post Activation | 0.197 | 18 | 0.062 | 0.921 | 18 | 0.132 |
| Pre Stress | 0.207 | 18 | 0.039 | 0.823 | 18 | 0.003 |
| Post stress | 0.207 | 18 | 0.040 | 0.871 | 18 | 0.018 |
| Arousal Pre | 0.169 | 18 | 0.188 | 0.889 | 18 | 0.037 |
| Arousal Post | 0.199 | 18 | 0.057 | 0.842 | 18 | 0.006 |

**Table 5.** *Wilconsox T test*

|  | Activation | Stress | Arousal |
|---|---|---|---|
| Sig. asin. (bilateral) | 0.025 | 0.460 | 0.165 |

The bilateral significance value of the nonparametric Wilconsox T test yields a value of 0.025< 0.05.

**Discussion**

The present research aimed to determine the effect of nursing intervention on mood regulation impairment in institutionalized older adults with dementia, through the application of doll-assisted therapy or Doll Therapy. The results found agree with studies such as that of Mitchell & Templeton (18), which supports the benefits of this non-pharmacological intervention on psychological and behavioral symptoms in this age group.

100% of the participants presented dementia, between the ages of 70 and 74 years, data that agree with DeTure & Dickson (19) and Huang & Mucke (20), who reported a prevalence of dementia of 5-8% in people over 65 years, while Huang & Mucke (20), showed that the prevalence doubles every 5 years from the age of 65 (from 6.5% between 65-70 years to more than 30% in those over 85 years. Regarding marital status, single people predominated, this factor is related to epidemiological studies carried out by Liu et al. (21), which show that being single can increase the risk of dementia by 42%, even after controlling for other medical and socioeconomic conditions due to less cognitive stimulation and social support networks (22, 23, 24).

According to the study by Kales et al. (25), psychological and behavioral symptoms are very common in dementia, affecting up to 90% of patients at some point in the disease. These symptoms include agitation, aggression, apathy, hyponymia, stress, disinhibition, delusions, hallucinations, among others. In this way, cognitive impairment leads to behavioral changes such as erratic wandering, sleep disturbances, and loss of functional skills for daily living activities. In this context, Doll Therapy emerges as a promising non-pharmacological intervention to mitigate these symptoms and improve the quality of life of patients with dementia (26).

Therefore, this study showed that doll-assisted therapy had a positive effect on the mood activation enneatype in institutionalized older adults with dementia. This is consistent with the research of Mitchell & Templeton (18), who mention that by providing a doll to a person with dementia there is a reduction in episodes of distress, an increase in general well-being, better dietary intake and higher levels of engagement with others. It could be

argued that the therapy complies with the concepts of beneficence (it facilitates the promotion of well-being) and respect for autonomy (the person with dementia can exercise their right to engage with the dolls if they so wish) (18).

The Stress and Arousal enneatypes did not show statistically significant differences between pre- and post-treatment. Ng, et al. (26) determined that the therapy is effective in alleviating behavioral-emotional symptoms and improving well-being among patients with dementia who engaged with dolls. Molteni et al. (27) demonstrated the efficacy of 30 days of Doll Therapy, resulting in a significant reduction in agitation, anxiety, wandering, apathy, and irritability. This is of fundamental importance since cognitive-behavioral symptoms affect the presentation and progression of dementia, causing greater difficulties for their families and professional caregivers.

Doll Therapy offers significant advantages in terms of cost-effectiveness: unlike other non-pharmacological treatments (e.g. pets, music or art therapy), it does not necessarily require the presence of an expert, but can be carried out within 24 h by nursing home staff (nursing staff, caregivers, assistants) if they are properly trained and supervised (27).

**Conclusions**

- The present study demonstrated the efficacy of 4 weeks of Doll Therapy, which can be considered as a first-line non-pharmacological treatment to challenge mood regulation impairment in older adults with dementia. Doll Therapy increases perceptions of safety by creating a situation in which the older adult feels safe, energetic, highly interested, engaged, and reduces attachment behaviors that weigh on the professional caregiver.
- Overall, the significance value of the Wilconsox T test is less than 0.05, the alternative hypothesis is accepted, that is, there is a difference in the activation enneatype after the application of Doll Therapy, evidencing a positive effect of the therapy. The benefits are not only a function of the tool used (the doll), but also of the relationship established between family members and professional caregivers who are properly trained and aware of their role as an attachment figure.

**Conflict of interest**

The authors declare that there is no conflict of interest in relation to the submitted article.

**Authors' contribution statement**

Introduction: Rodney Misael Molina Peralta, Valeria Isabel Espin Lopez

Methodology: Rodney Misael Molina Peralta, Valeria Isabel Espin Lopez

Analysis:Rodney Misael Molina Peralta,Valeria Isabel Espin Lopez

Discussion:Rodney Misael Molina Peralta,Valeria Isabel Espin Lopez

Conclusion:Rodney Misael Molina Peralta,Valeria Isabel Espin Lopez

Review and editing:Rodney Misael Molina Peralta,Valeria Isabel Espin Lopez

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