Cogitare Enfermagem

ORIGINAL ARTICLE

Animal-Assisted Treatment in older adults' rehabilitation: Effects on balance and on quality of life

HIGHLIGHTS

1. CR and AATx significantly improve balance and quality of life.
2. The animals used in AATx enhance functional and emotional benefits.
3. AATx is essential in geriatric rehabilitation programs.
4. AATx stands out for yielding greater improvements in quality of life.

Ariana Oliveira Santos[1]
Luciana Moreira Magalhães de Oliveira[2]
María Belén Arriaga Gutiérrez[2]
Taiana Ribeiro Borges[1]
Jéssica Nery Novaes Aderne[1]
Leonardo Sampaio de Mattos[1]
Eduardo Martins Netto[2]

ABSTRACT

Objective: To analyze the effects exerted by Animal-Assisted Treatment on older adults' balance and quality of life, as compared to conventional rehabilitation. Method: A randomized clinical trial conducted with two groups of aged individuals (from 60 to 79 years old) and lasting 12 weeks, with 2 weekly sessions. Sociodemographic data, health conditions and balance and quality of life assessments were collected. *The Mann-Whitney* and *Wilcoxon* tests ($p<0.05$) were used in the statistical analysis. **Results:** Both groups presented significant improvements in balance. The group where animals were used presented better gains in quality of life in *WHOQOL-Old* (Social Participation: $p<0.049$), *WHOQOL-Bref* (Physical: $p<0.004$; and Psychological: $p<0.016$) and in SF-36 (Physical Function: $p<0.009$; Physical Performance: $p<0.036$; Pain: $p<0.002$; Social Function: $p<0.042$; and Physical component: $p<0.010$). **Conclusion:** Both approaches promoted benefits; however, the Animal-Assisted Treatment stood out in relation to well-being, functionality and reduction in social isolation among the older adults.

DESCRIPTORS: Health of the Elderly; Animal Assisted Therapy; Rehabilitation Services; Postural Balance, Quality of Life.

HOW TO REFERENCE THIS ARTICLE:
Santos AO, de Oliveira LMM, Gutiérrez MBA, Borges TR, Aderne JNN, de Mattos LS, et. al. Animal-Assisted Treatment in older adults' rehabilitation: Effects on balance and on quality of life. Cogitare Enferm [Internet]. 2026 [cited "insert year, month and day"];31:e100902en. Available from: https://doi.org/10.1590/ce.v31i0.100902en

[1]Fundação José Silveira, Centro de Reabilitação Nice Aguiar, Jequié, BA, Brasil.
[2]Fundação José Silveira, Centro de Pesquisa, Aprendizagem e Inovação, Salvador, BA, Brasil

INTRODUCTION

Population aging is a global phenomenon that has been transforming societies, imposing significant challenges on older adults' health and Quality of Life (QoL). This requires re-evaluating care strategies and interventions that promote healthy aging[1]. Gradual deterioration of the physical and cognitive functions associated with aging can impair mobility, balance and QoL, rendering health maintenance and well-being promotion even more critical[2].

Physical activity is an essential tool to preserve muscle mass, improve cardiovascular function[3], increase bone density[4] and promote balance and coordination. These benefits are fundamental to reduce the risk of falls[5], one of the main morbidity and mortality factors among aged individuals[6].

Physical activity is associated with various health benefits, such as better cardiovascular and respiratory health, increased sensitivity to insulin, bone and muscle strengthening and improvements in mood and cognitive function, in addition to reducing the risks of Type 2 diabetes, cancer and depression[7]. However, some statistics show that only a small percentage of the adult population practices physical activity regularly[8], with even lower rates among aged individuals[9]. Although the benefits of physical activity are known, these data suggest low motivation levels and/or self-regulation failures[10]. Lack of time, fear of falling, high costs, transportation difficulties, pain and finding no pleasure in the activities can be mentioned among the barriers for the regular practice of physical exercise[11].

Thus, ongoing adherence to physical exercise programs can be challenging for many older adults. In this context, Animal-Assisted Services (ASSs), formerly Animal-Assisted Interventions (AAIs), emerge as an innovating strategy capable of increasing motivation and adherence to physical activity programs. As for the Health area, Animal-Assisted Treatment (AATx) (formerly known as Animal-Assisted Therapy)[12] can provide emotional and social benefits that complement the physical effects of exercising the body[13]. Interacting with animals has been associated with stress reductions, increased well-being and improved QoL, factors that can ease regular participation in physical exercise programs[14]. In addition to that, the improvements in mobility and balance tend to reduce the number of falls and the hospitalization risk and to cut down individual and Public Health costs[15].

Given the above, the objective of this study is to analyze the effects exerted by Animal-Assisted Treatment on older adults' balance and QoL, as compared to conventional rehabilitation.

METHOD

This study is a two-arm, single-blind (evaluator) and randomized clinical trial, comparing a Conventional Rehabilitation (CR) group and another one subjected to AATx. The study was conducted at a Rehabilitation Center in inland Bahia, 365 km away from the capital city. The *locus* was chosen because the participants already attended it for their treatments, in addition to the fact that it offered a suitable infrastructure including Physiotherapy rooms, a sports field and space for walking.

The subjects included were older adults of both genders, aged between 60 and 79 years old and with no cardiovascular alterations or other physical, visual or hearing impairments that limited performing the exercises (according to an analysis

of clinical histories and medical records). Assessed by means of the Mini Mental State Examination (MMSE), absence of cognitive deficit was also required, with minimum scores of 13 for illiterate people, 18 for individuals with 1 to 8 years of study and 26 for those with 8 or more years of study[16]. The participants were patients in the CRNA waiting list.

The randomization procedure was performed by means of cards placed in opaque envelopes that were sequentially numbered, allocating 28 participants (14 per group) to the Conventional Rehabilitation (CR) or AATx group. The process was in charge of a researcher not clinically involved in the study, which ensured allocation secrecy. The patients excluded were those that had already took part in AATx programs in the last 3 months, stated having some allergy or phobia to animals (especially dogs) or refused to sign the Free and Informed Consent Form (FICF).

Full-blinding was not possible due to the intervention nature, which involved using a dog or not. However, the statistical analysis was in fact performed blindly, coding the groups as 1 and 2 and without explicitly identifying the intervention applied. The study was approved by the Research Ethics Committee (*Comitê de Ética em Pesquisa*, CEP) of the Climério de Oliveira Maternity Hospital belonging to *Universidade Federal da Bahia* (UFBA) under CAAE No. 76502223.2.0000.5543 and Opinion No. 6,612,440, in full compliance with National Health Council resolutions No. 466/2012 and No. 510/2016.

The sociodemographic data were collected with a questionnaire specifically designed for this study and which included gender, age group (60-69 years old, 70-79 years old), schooling (illiterate, literate), marital status and monthly income (1-2 minimum wages, 2-3 minimum wages, 3 or more minimum wages). The health-related variables were as follows: Chronic diseases (none, one, two or more) such as hypertension or pulmonary, cardiac and circulatory diseases; Medication use; Falls in the last 6 months; Smoking habit (has never smoked, former smoker, smoker); and Hospitalizations in the last 6 months.

Dynamic balance was evaluated with the *Mini-BESTest*, a reduced version of the *BESTest*, validated for older adults in the Portuguese language[17]. The test includes four domains: *Anticipatory postural adjustments* (up to 6 points), *Postural responses* (up to 6 points), *Sensory orientation* (up to 6 points) and *Gait stability* (up to 10 points). The maximum score is 28, with a cutoff value set at 20 points indicating a lower risk of falls[18].

The Berg Balance Scale (validated for Portuguese) was also used. This instrument assesses balance and functionality by means of 14 everyday tasks such as seating down, standing up, leaning and climbing stairs. Each item varies from 0 (Inability) to 4 (Total ability), with a maximum score of 56 points[19].

Three questionnaires were used, namely:

1. SF-36 (36-Item Short Form Health Survey): Translated and validated in Brazil, it assesses eight domains (Functional Capacity, Physical Aspects, Pain, General Health, Vitality, Social Aspects, Emotional Aspects and Mental Health)[20].

2. WHOQOL-Bref: Version in Portuguese with 26 questions divided into the Physical, Psychological, Social Relations and Environment domains and using a *Likert* scale from 1 to 5[21].

3. WHOQOL-Old: Also validated for Portuguese, with 24 items in six domains (Sensory function, Autonomy, Past/Present/Future Activities, Social Participation, Death and Dying, Intimacy), with a *Likert* scale from 1 to 5[22].

AATx was implemented with a *Golden Retriever* dog, duly vaccinated, trained and evaluated by the *Vale da Neblina* team. In addition to a cardio-respiratory and body structure analysis, the dog was subjected to health tests in charge of a veterinarian (laboratory tests, ultrasound and X-rays), to ensure its well-being. This team specialized in canine behavior analyzed the therapy dog socialization and behavior. It communicated well with its handler, understood requests and cues, was able to do heelwork, did not pull the lead and showed self-control in the presence of people, other dogs or distractions. After screening, training and due hygiene procedures, the dog was considered fit to be used in the AASs according to the population chosen. The protocol aimed at improving the participants' balance and QoL, with adapted physical exercises to improve gait, speed and postural control.

The intervention lasted 12 weeks and was implemented from the third week of February to the second week of March 2024, with two weekly sessions (total of 24 sessions) lasting 40 minutes each (5-minute warm-up, activity for 30 minutes and 5-minute cool-down). The Experimental Group performed physical exercises such as obstacle walking, quadriceps isometry with the dog going over the leg, sitting down/standing up with dumbbells and side-walking interacting with the dog. The CR group was subjected to the same physical exercises, but without including the dog.

The continuous data were presented as median and Interquartile Range (IQR) values and the categorical data, as absolute and relative frequencies. The *Mann-Whitney* test for independent samples was used to compare the scores between the groups; in turn, *Wilcoxon*'s test for paired samples was employed to compare the scores before and after the intervention. The analyses were performed in SPSS v. 29.0.2.0, with $p<0.05$ as significance level. Sample size calculation was based on the "Pain" score reduction detected in the SF-36 questionnaire, finding a 30-point difference in the scores between both groups, with a standard deviation of 25. The estimated number would be 11 participants per group, considering 20% data loss and resulting in an ideal of 13 individuals and a minimum of 11.

RESULTS

A total of 28 participants were initially included, allocating 14 to each group. Six volunteers were excluded for abandoning the treatment; therefore, 12 and 10 participants were evaluated at the end of the protocol in the AATx and CR groups, respectively. The older adults' age median was 68 (64-72) years old. In relation to gender, there was predominance of females with 20 subjects (90.9%). As for schooling, 14 aged individuals (59.1%) had Incomplete Elementary School. Of all the participants, 8 (36.4%) reported being married and 16 (72.7%) earned monthly incomes between 1 and 2 minimum wages.

Referring to the health-related variables, higher frequency of older adults with diseases was observed, with hypertension as the most prevalent one and affecting 16 participants (72.7%). Most of the older adults (n=19; 86.4%) reported continued medication use. As for falls in the last six months, 15 participants (68.2%) asserted not having had any such episode. In relation to smoking, 15 aged individuals (68.2%) stated having never smoked (Table 1).

Table 1. Sociodemographic characteristics and health conditions of the study participants. Jequié, BA, Brazil, 2025

Characteristics	Total	AATx	CR	p-value
Gender				
Female	20 (90.9)	11 (91.7)	9 (90)	0.892
Age (in years old)				
Median (Interquartile Range)	68 (64-72)	71 (67-73)	65 (61-68)	0.051
Schooling up to Incomplete Elementary School	14 (66.6)	8 (66.6)	6 (60)	0.813
Marital status				
Married	8 (36.4)	5 (41.7)	3 (30)	0.721
Monthly income				
1-2 minimum wages	16 (72.7)	9 (75)	7 (30)	0.125
Comorbidities				
Systemic Arterial Hypertension	16 (72.7)	8 (66.7)	8 (80)	0.646
Diabetes Mellitus	6 (27.3)	3 (25)	3 (30)	1
Hypercholesterolemia	7 (31.8)	3 (25)	4 (40)	0.652
Others	13 (59.1)	9 (75)	4 (40)	0.08
Was undergoing some type of treatment	19 (86.4)	9 (75)	10 (100)	
Had no falls in the last 6 months	15 (68.2)	7 (58.3)	8 (80)	0.054
Has never smoked	15 (68.2)	8 (66.7)	7 (70)	0.385

Source: The authors (2025).

Static and dynamic balance was improved after the intervention in the intra-group analysis of the AATx group, when analyzing the significant values in Berg's Test ($p<0.046$) and in the *Mini-BESTest* ($p<0.029$). In the intra-group comparison corresponding to QoL among the AATx group participants, QoL improved in various domains. In *WHOQOL-Old*, it improved in the Social Participation aspect ($p<0.049$); in *WHOQOL-Bref* it did so in the Physical ($p<0.004$) and Psychological ($p<0.016$) domains; and, in SF-36, it presented improvements in "Physical Function" ($p<0.009$); "Physical Performance" ($p<0.036$); "Pain" ($p<0.002$); "Social Function" ($p<0.042$); and "Physical component" ($p<0.010$) (Table 2).

Table 2. Comparison corresponding to the median values of the "Balance" and "QoL" variables before and after the intervention in the AATx group. Jequié, BA, Brazil, 2025

(continue)

Tests	AATx Before	AATx After	p-value
Berg's test	54 (49-56)	55 (52-56)	**0.046**
Mini-BESTest	23 (20-26)	26 (24-27)	**0.029**
WHOQOL-Old			
Sensory Functioning	43.8 (40.6-46.9)	43.8 (37.5-50)	0.608
Autonomy	50 (40.6-59.4)	68.8 (40.6-68.8)	0.371
Past, Present and Future Activities	65.6 (53.1-71.9)	68.8 (56.3-75)	0.666
Social Participation	53.1 (37.5-71.9)	68.8 (59.4-71.9)	**0.049**
Death and Dying	34.4 (15.6-50)	21.9 (0-50)	0.105
Intimacy	68.8 (65.6-75)	75 (68.8-75)	0.132
WHOQOL-Bref			
Physical	46.4 (32.1-62.5)	58.9 (46.4-73.2)	**0.004**
Psychological	66.7 (56.3-72.9)	75 (60.4-79.2)	**0.016**
Social Relations	75 (66.7-75)	75 (58.3-75)	0.786
Environment	57.8 (50-62.5)	59.4 (53.1-62.5)	0.932

Table 2. Comparison corresponding to the median values of the "Balance" and "QoL" variables before and after the intervention in the AATx group. Jequié, BA, Brazil, 2025

(conclusion)

Tests	AATx Before	AATx After	p-value
SF-36 - Dimensions			
Physical Function	53 (38-70)	78 (53-93)	**0.009**
Physical Performance	0 (0-25)	38 (0-100)	**0.036**
Pain	27 (22-36)	58 (42-79)	**0.002**
General Health	64 (50-90)	82 (60-92)	0.074
Vitality	63 (40-73)	70 (50-90)	0.126
Social Function	50 (25-82)	75 (50-100)	**0.042**
Emotional Performance	33 (0-100)	100 (67-100)	0.059
Mental Health	74 (56-90)	84 (70-94)	0.532
SF-36 components			
Physical	30 (27-35)	44 (28-54)	**0.010**
Mental	35 (21-57)	53 (36-59)	0.209

Note: The values are presented as median and Interquartile Range. *Wilcoxon's* test was used.
Source: The authors (2025).

Static and dynamic balance improved in the CR group (Berg's Test: p<0.034; *Mini-BESTest*: p<0.026). Intra-group QoL also improved in different aspects. The Intimacy aspect improved in *WHOQOL-Old* (p<0.031). A significant statistical difference was verified in the Physical (p<0.021) and Psychological (p<0.011) domains from *WHOQOL-Bref*. Statistically significant values were also detected in the "Physical Function" (p<0.027) and "Pain" (p<0.008) dimensions from SF-36 (Table 3).

In the inter-group comparison using the *Mann Whitney* test for independent samples, a significant statistical difference was only verified in static and dynamic balance before the intervention, as assessed with the *Mini-BESTest* (p=0.03) (Table 4).

Table 3. Comparison corresponding to the median values of the "Balance" and "QoL" variables before and after the intervention in the CR group. Jequié, BA, Brazil, 2025

(continue)

Tests	CR Before	CR After	p-value
Berg's Test	56 (55-56)	56 (56-56)	**0.034**
Mini-BESTest	27 (25-28)	28 (27-28)	**0.026**
WHOQOL-Old			
Sensory Functioning	43.8 (37.5-43.8)	40.6 (31.3-43.8)	1.000
Autonomy	59.4 (50-62.5)	56.3 (50-62.5)	0.760
Past, Present and Future Activities	56.3 (37.5-68.8)	65.6 (50-68.8)	0.340
Social Participation	59.4 (50-75)	62.5 (56.3-68.8)	0.259
Death and Dying	12.5 (12.5-18.8)	12.5 (6.3-25)	0.443
Intimacy	75 (56.3-75)	75 (68.8-81.3)	**0.031**
WHOQOL-Bref			
Physical	58.9 (39.3-67.9)	66.1 (57.1-75)	**0.021**
Psychological	64.6 (54.2-75)	77.1 (62.5-83.3)	**0.011**
Social Relations	58.3 (58.3-75)	70.8 (58.3-75)	0.307
Environment	54.7 (50-56.3)	59.4 (53.1-62.5)	0.058

Table 3. Comparison corresponding to the median values of the "Balance" and "QoL" variables before and after the intervention in the CR group. Jequié, BA, Brazil, 2025 (conclusion)

Tests	CR Before	CR After	p-value
SF-36 - Dimensions			
Physical Function	70 (45-100)	98 (75-100)	**0.027**
Physical Performance	25 (0-100)	88 (0-100)	0.131
Pain	42 (22-52)	72 (52-84)	**0.008**
General Health	57 (25-82)	76 (52-82)	0.220
Vitality	58 (40-80)	70 (65-90)	0.092
Social Function	94 (50-100)	94 (63-100)	0.666
Emotional Performance	100 (33-100)	100 (67-100)	0.257
Mental Health	84 (68-96)	92 (76-92)	0.302
SF-36 components			
Physical	38 (28-41)	51 (36-53)	0.052
Mental	53 (26-61)	55 (42-57)	0.721

Source: The authors (2025).

Table 4. Comparison between the median balance values found in Berg's Test and in the *Mini-BESTest* and QoL before the intervention in the intervention groups. Jequié, BA, Brazil, 2025

Tests	AATx (n=12)	CRNA (n=10)	p-value
Berg's Test	54 (49-56)	56 (55-56)	0.088
Mini-BESTest	23 (20-26)	27 (25-28)	**0.030**
WHOQOL-Old			
Sensory Functioning	43.8 (40.6-46.9)	43.8 (37.5-43.8)	0.128
Autonomy	50 (40.6-59.4)	59.4 (50-62.5)	0.335
Past, Present and Future Activities	65.6 (53.1-71.9)	56.3 (37.5-68.8)	0.286
Social Participation	53.1 (37.5-71.9)	59.4 (50-75)	0.404
Death and Dying	34.4 (15.6-50)	12.5 (12.5-18.8)	0.061
Intimacy	68.8 (65.6-75)	75 (56.3-75)	0.539
WHOQOL-Bref			
Physical	46.4 (32.1-62.5)	58.9 (39.3-67.9)	0.337
Psychological	66.7 (56.3-72.9)	64.6 (54.2-75)	0.868
Social Relations	75 (66.7-75)	58.3 (58.3-75)	0.050
Environment	57.8 (50-62.5)	54.7 (50-56.3)	0.370
SF-36 - Dimensions			
Physical Function	53 (38-70)	70 (45-100)	0.154
Physical Performance	0 (0-25)	25 (0-100)	0.207
Pain	27 (22-36)	42 (22-52)	0.106
General Health	64 (50-90)	57 (25-82)	0.371
Vitality	63 (40-73)	58 (40-80)	0.817
Social Function	50 (25-82)	94 (50-100)	0.050
Emotional Performance	33 (0-100)	100 (33-100)	0.291
Mental Health	74 (56-90)	84 (68-96)	0.408
SF-36 components			
Physical	30 (27-35)	38 (28-41)	0.080
Mental	35 (21-57)	53 (26-61)	0.322

Source: The authors (2025).

In the inter-group comparison using the *Mann Whitney* test for independent samples, a significant statistical difference was verified in static and dynamic balance after the interventions, as assessed with the *Mini-BESTest* (p=0.005) (Table 5).

Table 5. Comparison between the mean balance values found in Berg's Test and in the *Mini-BESTest* and QoL before the intervention in the intervention groups. Jequié, BA, Brazil, 2025

Tests	AATx (n=12)	CRNA (n=10)	p-value
Berg's Test	55 (52-56)	56 (56-56)	0.107
Mini-BESTest	26 (24-27)	28 (27-28)	**0.005**
WHOQOL-Old			
Sensory Functioning	43.8 (37.5-50)	40.6 (31.3-43.8)	0.274
Autonomy	68.8 (40.6-68.8)	56.3 (50-62.5)	0.441
Past, Present and Future Activities	68.8 (56.3-75)	65.6 (50-68.8)	0.480
Social Participation	68.8 (59.4-71.9)	62.5 (56.3-68.8)	0.500
Death and Dying	21.9 (0-50)	12.5 (6.3-25)	0.570
Intimacy	75 (68.8-75)	75 (68.8-81.3)	0.358
WHOQOL-Bref			
Physical	58.9 (46.4-73.2)	66.1 (57.1-75)	0.426
Psychological	75 (60.4-79.2)	77.1 (62.5-83.3)	0.595
Social Relations	75 (58.3-75)	70.8 (58.3-75)	0.450
Environment	59.4 (53.1-62.5)	59.4 (53.1-62.5)	0.893
SF-36 - Dimensions			
Physical Function	78 (53-93)	98 (75-100)	0.166
Physical Performance	38 (0-100)	88 (0-100)	0.622
Pain	58 (42-79)	72 (52-84)	0.303
General Health	82 (60-92)	76 (52-82)	0.246
Vitality	70 (50-90)	70 (65-90)	0.740
Social Function	75 (50-100)	94 (63-100)	0.430
Emotional Performance	100 (67-100)	100 (67-100)	0.966
Mental Health	84 (70-94)	92 (76-92)	0.527
SF-36 components			
Physical	44 (28-54)	51 (36-53)	0.552
Mental	53 (36-59)	55 (42-57)	0.921

Source: The authors (2025).

DISCUSSION

This study showed that both protocols (CR and AATx) exerted statistically significant effects on older adults' static and dynamic balance. The intra-group analysis revealed benefits in QoL and balance in both modalities. However, when compared to CR, the AATx group stood out with improvements in the QoL Physical, Social and Emotional domains. These results are in line with the literature, which signals AATx as a multifaceted approach yielding benefits from physical aspects like balance and gait to other aspects, such as social interaction, mood, less agitation/aggressiveness and better QoL[23-24].

Both groups presented improvements in QoL; however, the AATx group showed significant gains in the "Social Participation" domain from *WHOQOL-Old* and in SF-36 dimensions like physical, social and emotional functions. Mittly *et al.*[25] corroborate these

findings, highlighting that dogs act as social catalyzers, promoting greater interaction among the participants, which is reflected in everyday life.

Interacting with a dog stimulates spontaneous communication and evokes positive memories and feelings, proving to be effective for older adults, even for those with dementia symptoms. That interaction goes beyond affection and serves as a social facilitator, capable of encouraging spontaneous communication, either through orders given to the dog, by petting it or when narrating memories associated with pets, bringing up good remembrances and well-being. The positive effects on the emotional and cognitive spheres contribute to reducing loneliness and isolation, indirectly but crucially supporting communication and social participation in old age[24].

Assessed by means of SF-36, pain reductions were observed in both groups. Common in aged individuals with comorbidities such as rheumatic diseases, chronic pain oftentimes leads to polypharmacy[26]. Alternative and multidisciplinary approaches like AATx offer a holistic perspective by not only addressing the physical aspects but also the emotional ones, which can exert positive effects on pain control. These interventions contribute to reducing anxiety, promote mood improvements and favor greater social engagement, resulting in emotional well-being signs and in increased physical activity, with a positive impact on QoL[24].

Both groups also improved in terms of balance with significant results in the *Mini-BESTest*, indicating better postural stability and functionality. CR improves mobility and balance, reducing the risk of falls[27]; in turn, AATx also proves to be effective in these aspects[28].

Physical exercise increases gait confidence, improving balance, mobility and flexibility, which are essential to prevent falls and their consequences (such as hospitalizations and functional decline)[29-30]. Strategies that improve balance exert a positive impact on QoL, considering the biopsychosocial aspects inherent to aging[28].

As limitations, the small sample size and the impossibility of implementing full-blinding due to the study nature stand out. Despite that, the results suggest that both protocols are effective, with AATx presenting additional advantages in the QoL domains.

The studies on AATx with dogs are still scarce; however, the findings indicate that incorporating these animals to rehabilitation programs can improve adherence and maximize the benefits for older adults. It is recommended to invest in adequate training for animals and due qualification for professionals.

Future longitudinal and multicenter research studies with larger samples should be conducted to validate the results in different contexts. The focus on active and healthy aging should be priority, promoting QoL and reducing impairments in older adults' health.

CONCLUSION

This study showed that both CR and AATx improved the aged individuals' QoL and balance. The AATx group stood out with gains in more QoL domains, whereas both groups presented significant improvements in balance. Including animals in therapeutic interventions enhances the functional and emotional benefits, reducing social isolation and improving well-being. Despite the limitations, the results reinforce the importance of physical exercise and of AATx in rehabilitation programs targeted at older adults.

REFERENCES

1. de Souza AKN, Cunha DG, Lopes GS. Estratégias na atenção primária e a percepção do idoso para um envelhecimento saudável e bem sucedido. Revista Contemporânea [Internet]. 2023 [cited 2024 Jun 24];3(12):29014-40. Available from: https://doi.org/10.56083/RCV3N12-213

2. Angulo J, El Assar M, Alvarez-Bustos A, Rodriguez-Manas L. Physical activity and exercise: strategies to manage frailty. Redox Biol [Internet]. 2020 [cited 2024 Aug 8];35:101513 p. Available from: https://doi.org/10.1016/j.redox.2020.101513

3. Sengun N, Pala R, Cinar V, Akbulut T, Larion A, Padulo J, et al. Alterations in biomarkers associated with cardiovascular health and obesity with short-term lifestyle changes in overweight women: the role of exercise and diet. Medicina. [Internet]. 2024 [cited 2024 Aug 8];60(12). Available from: https://doi.org/10.3390/medicina60122019

4. Pinheiro MB, Oliveira J, Bauman A, Fairhall N, Kwok W, Sherrington C. Evidence on physical activity and osteoporosis prevention for people aged 65+ years: a systematic review to inform the WHO guidelines on physical activity and sedentary behaviour. Int J Behav Nutr Phys Act [Internet]. 2020 [cited 2024 Nov 26];17(1):150. Available from: https://doi.org/10.1186/s12966-020-01040-4

5. Tamminen AE, Honkanen R, Koivumaa-Honkanen H, Sirola J, Sund R, Kröger H, et al. Exercise reduces the risk of falls in women with polypharmacy: secondary analysis of a randomized controlled trial. Sci Rep [Internet]. 2025 [cited 2024 Feb 19];15:6009. Available from: https://doi.org/10.1038/s41598-025-88205-y

6. Guirguis-Blake JM, Michael YL, Perdue LA, Coppola EL, Beil TL. Interventions to Prevent Falls in Older Adults: Updated Evidence Report and Systematic Review for the US Preventive Services Task Force. JAMA [Internet]. 2018 [cited 2026 Jan 13];319(16):1705-16. Available from: https://doi.org/10.1001/jama.2017.21962

7. Kohl HW, Craig CL, Lambert EV, Inoue S, Alkandari JR, Leetongin G, et al. The pandemic of physical inactivity: global action for public health. Lancet [Internet]. 2012 [cited 2025 Jul 21];380(9838):294-305. Available from: https://doi.org/10.1016/S0140-6736(12)60898-8

8. Ashe MC, Miller WC, Eng JJ, Noreau L, Physical A. Older adults, chronic disease and leisure-time physical activity. Gerontology [Internet]. 2009 [cited 2024 Jun 10];55(1):64-72. Available from: https://doi.org/10.1159/000141518

9. Thorp AA, Owen N, Neuhaus M, Dunstan DW. Sedentary behaviors and subsequent health outcomes in adults a systematic review of longitudinal studies, 1996-2011. Am J Prev Med [Internet]. 2011 [cited 2024 Jun 20];41(2):207-15. Available from: https://doi.org/10.1016/j.amepre.2011.05.004

10. Nielsen L, Reiss D. Motivation and aging: toward the next generation of behavioral interventions: Expert Meeting. Washington, DC; the National Academies [Internet]. 2012 Jun 18-19 [cited 2025 Jun 28]. 6 p. Available from: https://www.nia.nih.gov/sites/default/files/d7/background.pdf

11. Bock BC, Linke SE, Napolitano MA, Clark MM, Gaskins RB, Marcus BH. Exercise initiation, adoption, and maintenance in adults: theoretical models and empirical support. American Psychological Association, 3rd ed [Internet]. 2014 [cited 2024 Nov 7]:165-89. Available from: https://doi.org/10.1037/14251-008

12. Binder AJ, Parish-Plass N, Kirby M, Winkle M, Plesa Skwerer DP, Ackerman L, et al. Recommendations for uniform terminology in animal-assisted services (AAS). Hum anim interact [Internet]. 2024 [cited 2025 Feb 12];12(1):1-10. Available from: https://doi.org/10.1079/hai.2024.0003

13. Chang SJ, Lee J, An H, Hong WH, Lee JY. Animal-assisted therapy as an intervention for older adults: a systematic review and meta-analysis to guide evidence-based practice. Worldviews Evid Based Nurs [Internet]. 2021 [cited 2025 Feb 12];18(1):60-7. Available from: https://doi.org/10.1111/wvn.12484

14. Grubbs B, Artese A, Schmitt K, Cormier E, Panton L. A pilot study to assess the feasibility of group exercise and animal-assisted therapy in older adults. J Aging Phys Act [Internet]. 2016 [cited 2024 Dec 2];24(2):322-31. Available from: https://doi.org/10.1123/japa.2015-0107

15. Denzer-Weiler C, Hreha K. The use of animal-assisted therapy in combination with physical therapy in an inpatient rehabilitation facility: A case report. Complement Ther Clin Pract [Internet]. 2018 [cited 2025 Jan 24];32:139-44. Available from: https://doi.org/10.1016/j.ctcp.2018.06.007

16. Bertolucci PHF, Brucki SMD, Campacci SR, Juliano Y. O Mini-Exame do Estado Mental em uma população geral: impacto da escolaridade. Arq Neuro-Psiquiatria. [Internet]. 1994 [cited 2025 Apr 23];52(1):1-7. Available from: https://doi.org/10.1590/S0004-282X1994000100001

17. Franchignoni F, Horak F, Godi M, Nardone A, Giordano A. Using psychometric techniques to improve the Balance Evaluation Systems Test: the mini-BESTest. J Rehabil Med [Internet]. 2010 [cited 2025 Jun 23];42(4):323-31. Available from: https://doi.org/10.2340/16501977-0537

18. King L, Horak F. On the mini-BESTest: scoring and the reporting of total scores. Phys Ther [Internet]. 2013 [cited 2025 Apr 23];93(4):571-5. Available from: https://doi.org/10.2522/ptj.2013.93.4.571

19. Miyamoto ST, Lombardi Junior I, Berg KO, Ramos LR, Natour J. Brazilian version of the Berg balance scale. Braz J Med Biol Res [Internet]. 2004 [cited 2024 Sep 13];37(9):1411-21. Available from: https://doi.org/10.1590/s0100-879x2004000900017

20. Ciconelli RM, Ferraz MB, Santos W, Meinão I, Quaresma MR. Tradução para a língua portuguesa e validação do questionário genérico de avaliação de qualidade de vida SF-36 (Brasil SF-36). Rev Bras Reumatol [Internet]. 1999 [cited 2024 Sep 13];39(3):143-50. Available from: https://www.scienceopen.com/document?vid=cbabb20e-5a4a-42ba-b75c-47877b39baea

21. Fleck MPA, Louzada S, Xavier M, Chachamovich E, Vieira G, Santos L, et al. Aplicação da versão em português do instrumento abreviado de avaliação da qualidade de vida "WHOQOL-bref". Rev. Saúde Pública [Internet]. 2000 [cited 2025 Apr 23];34(2):178-83. Available from: https://doi.org/10.1590/s0034-89102000000200012

22. Fleck MP, Chachamovich E, Trentini C. Development and validation of the Portuguese version of the WHOQOL-OLD module. Rev Saude Publica [Internet]. 2006 [cited 2024 Oct 3];40(5):785-91. Available from: https://doi.org/10.1590/s0034-89102006000600007

23. Ambrosi C, Zaiontz C, Peragine G, Sarchi S, Bona F. Randomized controlled study on the effectiveness of animal-assisted therapy on depression, anxiety, and illness perception in institutionalized elderly. Psychogeriatrics [Internet]. 2019 [cited 2024 Dec 10];19(1):55-64. Available from: https://doi.org/10.1111/psyg.12367

24. Yakimicki ML, Edwards NE, Richards E, Beck AM. Animal-Assisted Intervention and Dementia: A Systematic Review. Am J Alzheimer's Dis Other Demen [Internet]. 2018 [cited 2024 Sep 8];28(1):10-29. Available from: https://doi.org/10.1177/1054773818756987

25. Mittly V, Fay V, Dankovics N, Pal V, Purebl G. The role of dog therapy in clinical recovery and improving quality of life: a randomized, controlled trial. BMC Complement Med Ther [Internet]. 2024 [cited 2025 Jun 12];24:229. Available from: https://doi.org/10.1186/s12906-024-04538-7

26. Bezerra LMR, dos Santos CM, Venancio WF, da Ponte CHF, Cardoso ABVB, Passos ITP, et al. Abordagens multidisciplinares no tratamento da dor crônica em idosos: uma revisão bibliográfica. Revista Científica Multidisciplinar [Internet]. 2024 [cited 2024 Jun 28]; 5(3):e535022. Available from: https://doi.org/10.47820/recima21.v5i3.5022

27. Lorenzo-Garcia P, Cavero-Redondo I, de Arenas-Arroyo SN, Guzman-Pavon MJ, Priego-Jimenez S, Alvarez-Bueno C. Effects of physical exercise interventions on balance, postural stability and general mobility in Parkinson's disease: a network meta-analysis. J Rehabil Med [Internet]. 2024 [cited 2025 Feb 1];56:jrm10329. Available from: https://doi.org/10.2340/jrm.v56.10329

28. Olsen C, Pedersen I, Bergland A, Enders-Slegers MJ, Ihlebaek C. Effect of animal-assisted activity on balance and quality of life in home-dwelling persons with dementia. Geriatr Nurs [Internet]. 2016 [cited 2024 Jul 10];37(4):284-91. Available from: https://doi.org/10.1016/j.gerinurse.2016.04.002

29. de Souza AQ, Pegorari MS, Nascimento JS, de Oliveira PB, Tavares DM dos S. Incidence and predictive factors of falls in community-dwelling elderly: a longitudinal study. Cien Saude Colet

[Internet]. 2019 [cited 2024 Sep 24];24(9):3507-16. Available from: https://doi.org/10.1590/1413-81232018249.30512017

30. Abreu DROM, Novaes ES, de Oliveira RR, Mathias TAF, Marcon SS. Fall-related admission and mortality in older adults in Brazil: trend analysis. Cien Saude Colet [Internet]. 2018 [cited 2024 Jul 30];23(4):1131-41. Available from: https://doi.org/10.1590/1413-81232018234.09962016

Received: 17/08/2025
Approved: 05/12/2025
Associate editor: Dra. Susanne Elero Betiolli

Corresponding author:
Ariana Oliveira Santos
Fundação José Silveira
Largo do Campo Santo, s/n - Federação, Salvador - BA, 40210-320
E-mail: harianafisio@gmail.com

Role of Authors:
Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work - **Santos AO, de Oliveira LMM, Gutiérrez MBA, Borges TR, Aderne JNN, de Mattos LS, Martins Netto E.** Drafting the work or revising it critically for important intellectual content - **Santos AO, de Oliveira LMM, Gutiérrez MBA, Borges TR, Aderne JNN, de Mattos LS, Martins Netto E.** Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved - **Santos AO, de Oliveira LMM, Gutiérrez MBA, Borges TR, Aderne JNN, de Mattos LS, Martins Netto E.** All authors approved the final version of the text.

Conflicts of interest:
The authors have no conflicts of interest to declare.

Data availability:
The authors declare that all data are fully available within the article.

ISSN 2176-9133