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# COGNITIVE DECLINE AND FUNCTIONAL PERFORMANCE IN BASIC ACTIVITIES IN ELDERLY INDIVIDUALS RESIDING IN THE COMMUNITY

# DECLÍNIO COGNITIVO E DESEMPENHO FUNCIONAL EM ATIVIDADES BÁSICAS EM PESSOAS IDOSAS RESIDENTES NA COMUNIDADE

# DECLIVE COGNITIVO Y RENDIMIENTO FUNCIONAL EN ACTIVIDADES BÁSICAS EN PERSONAS MAYORES RESIDENTES EN LA COMUNIDAD

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# ABSTRACT

**Introduction:** As cognition declines, the functional capacity of the elderly is affected, compromising their independence and autonomy.

**Objective:** Analyze the association between cognitive status and functional performance in Basic Activities of Daily Living in elderly individuals.

**Method:** It is a cross-sectional study conducted with the elderly population of Santa Cruz, RN, served by Primary Health Care. Data collection took place between July and December 2023. Individuals aged 60 years or older were included in the study. The sample calculation resulted in an estimated sample of 200 individuals. Data collection was carried out using the Elderly Health Booklet, the Mini-Mental State Examination (MMSE), and the Barthel Scale. The data were analyzed using the Statistical Package for the Social Sciences (SPSS), version 23.0, and Pearson's chi-square test was applied to assess associations between cognitive decline and functional performance in Basic Activities of Daily Living.

**Results:** Statistically significant associations were found between age ($p \leq 0.001$), education ($p = 0.003$), and cognitive level. Furthermore, it was observed that elderly individuals with preserved cognition demonstrated greater independence in daily activities, especially in activities such as feeding (n = 176 / 88.0% / p = 0.005) and toileting (n = 174 / 87.0% / p = 0.001).

**Conclusion:** Therefore, a multidimensional approach to assessing elderly individuals is crucial in promoting active and healthy aging.


**Keywords:** Aged; Cognition; Functional Status.


# RESUMO

**Introdução:** À medida que a cognição é prejudicada, a capacidade funcional da pessoa idosa é afetada, comprometendo a sua independência e autonomia.

**Objetivo:** Analisar a associação entre o estado cognitivo e o desempenho funcional em Atividades Básicas de Vida Diária em pessoas idosas.

**Método:** Trata-se de um estudo transversal, realizado com a população idosa do município de Santa Cruz, RN, atendida pela Atenção Primária em Saúde. A coleta dos dados ocorreu entre julho e dezembro de 2023. Foram incluídos no estudo pessoas com idade igual ou superior a 60 anos. O cálculo amostral resultou numa amostra estimada de 200 pessoas. Para a coleta dos dados foi utilizado a Caderneta de Saúde da Pessoa Idosa, o Mini Exame do Estado Mental (MEEM) e a Escala de Barthel. Os dados foram tratados no *software*

estatístico *Statistical Package for the Social Science* (SPSS), versão 23.0 e aplicado o teste qui-quadrado de Pearson, para avaliar as associações entre declínio cognitivo e o desempenho funcional em Atividades Básicas de Vida Diária.

**Resultados:** Foi encontrado, associações estatisticamente significativas entre idade (p ≤ 0,001), escolaridade (p = 0,003) e nível de cognição. Além disso, observou-se que pessoas idosas com cognição preservada demonstraram maior independência em atividades diárias, especialmente em atividades como alimentação (n = 176 / 88,0% / p= 0,005) e uso do vaso sanitário (n = 174 / 87,0%/ p = 0,001).

**Conclusões:** Sendo assim, é crucial a realização de uma abordagem multidimensional na avaliação da pessoa idosa, com o intuito de promover um envelhecimento ativo e saudável.

**Palavras-chave:** Cognição; Estado Funcional; Idoso.

## RESUMEN

**Introducción:** A medida que la cognición se ve afectada, la capacidad funcional de la persona mayor se ve comprometida, afectando su independencia y autonomía.

**Objetivo:** Analizar la asociación entre el estado cognitivo y el desempeño funcional en Actividades Básicas de la Vida Diaria en personas mayores.

**Métodos:** Se trata de un estudio transversal realizado con la población mayor del municipio de Santa Cruz, RN, atendida por la Atención Primaria en Salud. La recolección de datos tuvo lugar entre julio y diciembre de 2023. Se incluyeron en el estudio personas de 60 años o más. El cálculo muestral resultó en una muestra estimada de 200 personas. Para la recolección de datos se utilizaron la Caderneta de Salud del Anciano, el Mini Examen del Estado Mental (MEEM) y la Escala de Barthel. Los datos fueron tratados en el *software* estadístico *Statistical Package for the Social Science* (SPSS), versión 23.0 y se aplicó la prueba de chi-cuadrado de Pearson para evaluar las asociaciones entre el declive cognitivo y el desempeño funcional en Actividades Básicas de la Vida Diaria.

**Resultados:** Se encontraron asociaciones estadísticamente significativas entre la edad (p ≤ 0,001), la educación (p = 0,003) y el nivel de cognición. Además, se observó que las personas mayores con cognición preservada demostraron una mayor independencia en las actividades diarias, especialmente en actividades como la alimentación (n = 176 /88,0% / p = 0,005) y el uso del inodoro (n = 174 / 87,0% / p = 0,001).

**Conclusión:** Por lo tanto, es crucial realizar un enfoque multidimensional en la evaluación de la persona mayor, con el fin de promover un envejecimiento activo y saludable.

**Descriptores:** Anciano; Cognición; Estado Funcional.

# INTRODUCTION

Population aging refers to the increasing proportion and numerical growth of individuals aged 60 years or older, coupled with a decline in the population of younger individuals aged 15 years or less[1]. In Brazil, this process has been occurring significantly, driven by advances in healthcare and improved socioeconomic conditions, mirroring a global trend. While in France, the proportion of older adults doubled from 10% to 20% over 140 years, this demographic shift is expected to occur in Brazil within just 25 years. By 2060, more than a quarter of the Brazilian population will be aged 60 years or older[2].

The aging process is accompanied by a rise in non-communicable chronic diseases (NCDs) among older adults, including cardiovascular and respiratory diseases, diabetes mellitus, cancer, and chronic degenerative conditions such as Alzheimer's disease[3]. Older adults with NCDs often exhibit a high prevalence of cognitive decline[4-5]. Biological changes associated with aging, such as chronic inflammation, vascular dysfunction, and oxidative stress, play a significant role in the development of these diseases[6-7].

Cognitive decline refers to the progressive loss of cognitive abilities with advancing age, impairing central nervous system functionality. This decline hinders the processing of vestibular, visual, and proprioceptive signals, which are essential for maintaining balance and functional capacity[8].

As cognitive functions deteriorate, older adults' functional capacity is adversely affected, leading to a loss of autonomy and independence. The ability to perform tasks without external assistance, as well as the interplay between physical and mental health, is critical to ensuring independence in Basic Activities of Daily Living (BADL), such as dressing, shopping, or housekeeping[9]. Loss of autonomy increases reliance on caregivers, raises the risk of falls and injuries, and diminishes overall quality of life[10].

Given these considerations, this study aims to analyze the association between cognitive status and functional performance in BADL among older adults.

# MATERIALS AND METHODS

This cross-sectional, quantitative study included older adults residing in the community and receiving care from Primary Health Care (PHC) services in Santa Cruz, Rio Grande do Norte, Brazil. Data collection was conducted between July and December 2023 by a trained, multidisciplinary team.

The study included individuals aged 60 years or older who were registered as users of PHC units. Older adults who were clinically unable to participate, as assessed by the researchers or PHC professionals, were excluded. The sample was determined probabilistically, using a formula for finite populations of older adults attending PHC. The calculation was based on a 95% confidence level (Z = 1.96), a margin of error of 5% (e = 0.05), and an expected proportion of 50% (P = 0.5), resulting in an estimated sample size of 200 older adults.

For the collection of sociodemographic and health data, the instrument used was the Older Adults' Health Booklet (CSPI), 2017 edition, developed by Brazil's Ministry of Health[11]. Variables analyzed included: Gender (male; female), Age group (60-79 years; ≥ 80 years), Race/Color (white; non-white), Literacy (literate; illiterate).

Cognitive status was evaluated using the Mini-Mental State Examination (MMSE), validated for Brazil[12]. This instrument assesses cognitive functions through seven categories: Temporal orientation, Spatial orientation, Word registration, Attention and calculation, Recall (memory retrieval), Language, Visual constructive ability. Scores range from 0 (minimum) to 30 (maximum). Cognitive decline was classified as follows: General population: ≤ 23 points = cognitive decline; ≥ 24 points = preserved cognition. Low literacy: ≤ 17 points = cognitive decline; ≥ 17 points = preserved cognition.

Functional performance was assessed using the Barthel Index, which measures independence in performing BADL, including: Feeding, bathing, dressing, personal hygiene, bowel and bladder control, toilet use, chair-bed transfers, ambulation, and stair climbing. The scale, validated for Brazil, ranges from 0 to 100 points. Functional dependence was classified as a score ≤ 65 points[13].

Data were organized using Excel® and analyzed with the Statistical Package for the Social Sciences (SPSS), version 23.0. Frequencies (absolute and relative) were presented for categorical variables. Pearson's Chi-Square Test was applied to evaluate associations between cognitive decline and functional performance in BADL. The level of significance was set at 5% ($p < 0.05$), and confidence intervals were established at 95%.

Participants who agreed to take part in the study were fully informed of its objectives and invited to sign the Informed Consent Form (ICF). This study was approved by the Research Ethics Committee of Onofre Lopes University Hospital, Federal University of Rio Grande do Norte (approval no. 4267762; CAAE: 36278120.0.1001.5292).

# RESULTS

This study analyzed a sample of 200 older adults residing in Santa Cruz, Rio Grande do Norte. Most participants were female (68.0%), aged 60-79 years (71.5%), non-white (61.0%), and had some level of literacy (75.0%), as presented in Table 1↗.

Regarding cognitive status, the variable gender showed no significant difference between men and women concerning preserved or impaired cognition (p = 0.436). However, a higher proportion of women (61.0%) had preserved cognition compared to men (27.5%).

A significant correlation was found between age groups and cognitive status. Participants aged 60-79 years had a higher proportion of preserved cognition (67.5%) compared to those aged 80 years or older (21.0%). This finding suggests a cognitive decline associated with the aging process, as observed in the studied sample.

For the variable race/color, no significant association was identified between white and non-white individuals and cognitive status (p = 0.989). However, a slightly higher proportion of preserved cognition was observed among non-white participants (54.0%).

Education level was a significant sociodemographic factor associated with cognitive status (p = 0.003). Literate individuals demonstrated a significantly higher proportion of preserved cognition (69.5%) compared to illiterate participants (19.0%). These results reveal that education played an essential role in cognitive preservation within this sample.

The functional performance of older adults in Basic Activities of Daily Living (BADL) demonstrated a statistically significant association between cognitive decline and functional independence, as shown in Table 2↗. Among the studied sample, functional independence in BADL was more prevalent in older adults with preserved cognition compared to those with cognitive decline.

For activities such as feeding (88.0%; p = 0.005) and toilet use (87.0%; p = 0.001), high proportions of functional independence were observed among individuals with preserved cognition. Furthermore, activities including bathing, dressing, personal hygiene, bowel movements, bed-to-chair transfers, ambulation, and stair climbing also showed statistically significant associations between preserved cognition and functional independence, reinforcing the critical role cognition plays in maintaining autonomy and functional capacity in older adults.

In contrast, urination did not present a statistically significant difference (p = 0.620). This suggests that, in this specific sample, cognitive status did not significantly influence functional performance in urination. This result may point to other underlying conditions, such as pre-existing genitourinary disorders, as potential contributors.

# DISCUSSION

This study sought to analyze the association between cognitive decline and functional performance in Basic Activities of Daily Living (BADL) in an older population, while also considering the influence of sociodemographic variables on cognition. The findings revealed a direct relationship between advancing age, education level, and cognitive status. Previous studies suggest that the interaction between age and literacy level contributes significantly to older adults' cognitive performance[14]. A higher level of education among older adults may mitigate potential cognitive losses, underscoring its role as a critical multidimensional variable in evaluations of cognitive decline[15].

The results showed a significant association between cognitive status and functional performance in BADL. Aging is often accompanied by cognitive decline, which affects functional independence[16]. Previous studies reveal that older adults with cognitive decline tend to show greater dependence on basic daily activities[17]. This reinforces the idea that preserving cognitive function is critical to maintaining functionality[18].

In this sample, older adults with preserved cognition demonstrated greater independence in a range of activities. Independence refers to the ability to perform tasks without third-party assistance[19], including feeding, bathing, dressing, personal hygiene, bowel movements, toilet use, bed-to-chair transfers, ambulation, and stair climbing. Among the factors directly influencing older adults' quality of life, functional independence and cognitive level stand out as essential elements that need to be in harmony with both psychological and biological aging processes[20].

An experimental study conducted by the Federal University of Campina Grande assessed the correlation between "functional independence and cognitive level", finding that higher functional independence was associated with better cognitive performance[18]. These findings align with the present study. The researchers also noted that limitations in performing daily activities can lead older adults to lose autonomy and become dependent. Furthermore, increased numbers of older adults requiring long-term care may result in higher healthcare costs[19,21].

One notable finding in this study was the lack of significant differences in urination between groups with low and preserved cognition. This suggests that factors beyond cognition, such as pre-existing genitourinary conditions, may play a role in functional performance in this activity. Studies conducted in Northern China and Malaysia highlight that functional decline is commonly associated with urinary incontinence among older adults[22-23].

The relationship between cognitive decline and functional performance underscores the importance of adopting multidimensional and individualized approaches in evaluating older adults. Considering these aspects holistically ensures the identification of specific needs and promotes healthy aging while preserving autonomy. A recent integrative review emphasizes the importance of using tools that facilitate comprehensive, interdisciplinary planning for elderly care. It highlights the need for a holistic evaluation that incorporates various scales addressing physical and cognitive aspects[24].

# CONCLUSION

Aging proved to be a determining factor for cognitive status in older adults, as evidenced by the significant association with advancing age. Furthermore, literacy positively influenced cognitive performance in this study's participants. The findings also highlight a strong association between cognitive status and functional capacity in daily activities, with participants exhibiting preserved cognition showing predominant independence in BADL.

A multidimensional evaluation of older adults ensures the identification of specific needs and facilitates individualized interventions that promote active and healthy aging.

# REFERENCES


1. Ismail Z, Ahmad WIW, Hamjah SH, Astina IK. The Impact of Population Ageing: A Review. [Internet] Iran J Public Health. 2021 Dec [accessed 2024 April 21];50(12):2451-2460. Available from: https://doi.org/10.18502/ijph.v50i12.7927

2. Mrejen M, Nunes L, Giacomin K. Envelhecimento populacional e saúde dos idosos: O Brasil está preparado?.[Internet] Estudo Institucional n.º 10. São Paulo: Instituto de Estudos para Políticas de Saúde. 2023 [accessed 2024 April 21]. Available from: https://ieps.caleidosdev.com.br/wp-content/uploads/2023/01/Estudo_Institucional_IEPS_10. pdf

3. Camarano AA, Welle A, Romero DE, Silveira FG, Félix J, Giacomin KC. et al. Doenças Crônicas e Longevidade: Desafios para o Futuro. Fiocruz; Edições Livres. Rio de Janeiro. 2023 [accessed 2024 April 22]. Available from: https://portolivre.fiocruz.br/doencas-cronicas-e-longevidade-desafios-para-o-futuro

4. Verma M, Grover S, Singh T, Dahiya N, Nehra R. Screening for cognitive impairment among the elderly attending the noncommunicable diseases clinics in a rural area of Punjab, North India. Asian J Psychiatr. 2020 [accessed 2024 April 22];50: 102001. Available from: https://doi.org/10.1016/j.ajp.2020.102001. Epub 2020 Mar 19. PMID: 32248085.

5. Hassen CB, Fayosse A, Landré B, Raggi M, Bloomberg M, Sabia S. et al. Association between age at onset of multimorbidity and incidence of dementia: 30 year follow-up in Whitehall II prospective cohort study. BMJ 2022 [accessed 2024 April 22]; 376:e068005. Available from: https://doi.org/10.1136/bmj-2021-068005

6. Steven S, Frenis K, Oelze M, Kalinovic S, Kuntic M, Bayo Jimenez MT, Vujacic-Mirski K, Helmstädter J, Kröller-Schön S, Münzel T, Daiber A. Vascular Inflammation and Oxidative Stress: Major Triggers for Cardiovascular Disease. Oxid Med Cell Longev. 2019 Jun 23 [accessed 2024 April 22];2019: 7092151. Available from: https://doi.org/10.1155/2019/7092151

7. Pacinella G, Ciaccio AM, Tuttolomondo A. Endothelial Dysfunction and Chronic Inflammation: The Cornerstones of Vascular Alterations in Age-Related Diseases. International Journal of Sciences. Int. J. Mol. Sci. 2022 [accessed 2024 April 22]; 23(24): 15722. Available from: https://doi.org/10.3390/ijms232415722

8. Soares NC, Delinocente MLB, Dati LMM. Fisiologia do envelhecimento: da plasticidade às consequências cognitivas. Revista neurociências. 2021 [accessed 2024 April 22];29:1-28. Available from: https://periodicos.unifesp.br/index.php/neurociencias/article/view/12447/8646

9. Almeida TBC, Oliveira AVR, Silva TBV, Moraes SAS. Rastreio cognitivo e funcional de idosos institucionalizados com histórico de quedas. Revista Centro de Pesquisas Avançadas em Qualidade de Vida p. 11-13. 2020 [accessed 2024 April 22]. Available from: http://dx.doi.org/10.36692/v12n3-22

10. Santos SC, Bueno CFO, Wosh JA, Bonini JS. Funcionalidade nas atividades instrumentais de vida diária em idosos com doença de Alzheimer. Revista Desafios. V.08. 2021 [accessed 2024 April 22]. Available from: http://dx.doi.org/10.20873/uftv8-9074

11. Brasil. Caderneta de Saúde da Pessoa Idosa 4.ª ed. Ministério da Saúde; 2017.

12. Bertolucci PHF, Brucki SMD, Campacci SR, Juliano Y. O Mini-Exame do Estado Mental em uma população geral: impacto da escolaridade. Arquivos de Neuro-Psiquiatria, 1994 [accessed 2024 April 22];52(1):01-07. Available from: https://doi.org/10.1590/S0004-282X1994000100001

13. Minosso JSM, Amendola F, Alvarenga MRM, Oliveira MAC. Validação, no Brasil, do Índice de Barthel em idosos atendidos em ambulatórios. Acta Paulista de Enfermagem. 2010 [accessed 2024 April 22];23(2):218-223. Available from: https://doi.org/10.1590/S0103-21002010000200011

14. Silva JG, Caldeira CG, Cruz GECP, Carvalho LED. Envelhecimento ativo, qualidade de vida e cognição de idosos: um estudo transversal em uma cidade de Minas Gerais . Revista Eletrônica Acervo Saúde. Available from: https://doi.org/10.25248/reas.e1796.2020

15. Júnior RBS. Perfil cognitivo, capacidade funcional e tempo de reação simples em idosos: Um estudo comparativo e correlacional. Universidade Federal do Norte do Tocantins. Tocantinópolis, 2023 [accessed 2024 April 23]. Available from: https://repositorio.uft.edu.br/bitstream/11612/5663/1/1-TCC%202_Raimundo%20Ju%cc%8 1nior_Corrigido.pdf

16. Silva HS, Chariglione IPFS, Oliveira MLC, Gomes LO, Alves VP. Perfil cognitivo e associações entre idosos longevos em contexto ambulatorial no Distrito Federal. Rev. Eletr. Enferm. [Internet]. 2020 [accessed 2024 April 23]. Available from: https://doi.org/10.5216/ree.v22.61878

17. Soares MFN, Maia LC, Costa SM, Caldeira AP. Dependência funcional em idosos assistidos por equipes da Estratégia Saúde da Família. Rev. Bras. Geriatr. Gerontol. 2019;22(5):e190147. [Internet]. 2020 [accessed 2024 April 23]. Available from: http://dx.doi.org/10.1590/1981-22562019022.190147

18. Manso MEG, Osti AV, Borrozzino NF, Maresti LTP. Avaliação Multidimensional do Idoso: resultados em um grupo de indivíduos vinculados a uma operadora de planos de saúde. Revista Kairós-Gerontologia, 21(1):191-211. ISSNe2176-901X. São Paulo, Brasil, 2018 [accessed 2024 April 23]. Available from: http://dx.doi.org/10.23925/2176-901X.2018v21i1p191-211

19. Santos JR, Costa FB, Santos JL, Oliveira AN, Júnior CMAL, Neto AOS et al. Avaliação da independência funcional e percepção da qualidade de vida de idosas praticantes de atividades físicas: um estudo piloto. Motricidade. 2020 [accessed 2024 April 23];16:64-71. Available from: http://dx.doi.org/10.6063/motricidade.222880

20. Nascimento PFD, Souza IGD, Lopes MF, Marques NM, Lameira AP. Percepção do familiar cuidador sobre a independência funcional, o nível cognitivo e o estado emocional do idoso. Estud. interdiscipl. envelhec., Porto Alegre, v. 25, n. 1, p. 107-120, 2020 [accessed 2024 April 23]. Available from: https://pesquisa.bvsalud.org/portal/resource/pt/biblio-1415718

21. Luo Y, Zou P, Wang K, Li X, Wang J. Prevalence and Risk Factors of Urinary Incontinence Among Elderly Adults in Rural China: A Cross-Sectional Survey. J Wound Ostomy Continence Nurs. 2022 [accessed 2024 April 23]. Available from: https://doi.org/10.1097/won.0000000000000829

22. Murukesu RR, Singh DKA, Shahar S. Urinary incontinence among urban and rural community dwelling older women: prevalence, risk factors and quality of life. BMC Public Health. 2019 [accessed 2024 April 23]. Available from: https://doi.org/10.1186/s12889-019-6870-6

23. Siqueira DS, Da Silva EF, Folador CE. Importância da qualidade de vida na saúde do idoso. Revista Multidisciplinar em Saúde. 2023 [accessed 2024 April 23]. Available from: https://doi.org/10.51161/integrar/rems/3646

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Authors' contributions/Contributos dos autores
AO: Conceptualization, writing – original draft, writing – revision and editing.
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MF: Conceptualization, writing – proofreading and editing, visualization.
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BD: Methodology, supervision, validation.
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Table 1 – Sociodemographic characteristics of older adults receiving primary health care, according to cognitive status. Santa Cruz, 2024.[↖]

| Sociodemographic variables | | Impaired cognition | Preserved cognition | Total | p-value |
|---|---|---|---|---|---|
| | | n (%) | n (%) | n (%) | |
| Gender | Female | 14 (7.0) | 122 (61.0) | 136 (68.0) | 0.436 |
| | Male | 9 (4.5) | 55 (27.5) | 64 (32.0) | |
| Age Group | 60-79 years | 8 (4.0) | 135 (67.5) | 143 (71.5) | <0.001 |
| | ≥ 80 years | 15 (7.5) | 42 (21.0) | 57 (28.5) | |
| Race/Color | White | 9 (4.5) | 69 (34.5) | 78 (39.0) | 0.989 |
| | Non-white | 14 (7.0) | 108 (54.0) | 122 (61.0) | |
| Education | Literate | 11 (5.5) | 139 (69.5) | 150 (75.0) | 0.003 |
| | Illiterate | 12 (6.0) | 38 (19.0) | 50 (25.0) | |

*Pearson's Chi-Square Test.

Table 2 – Functional performance in basic activities of daily living (BADL) of older adults residing in the community, according to cognitive status. Santa Cruz, 2024.

| Functional performance in the BADLs | | Impaired cognition | Preserved cognition | Total | p-value* |
|---|---|---|---|---|---|
| | | n (%) | n (%) | n (%) | |
| Feeding | Dependent | 3 (1.5) | 1 (0.5) | 4 (2.0) | 0.005** |
| | Independent | 20 (10.0) | 176 (88.0) | 196 (98.0) | |
| Bathing | Dependent | 5 (2.5) | 4 (2.0) | 9 (4.5) | 0.001** |
| | Independent | 18 (9.0) | 173 (86.5) | 191 (95.5) | |
| Dressing | Dependent | 6 (3.0) | 7 (3.5) | 13 (6.5) | <0.001 |
| | Independent | 17 (8.5) | 170 (85.0) | 187 (93.5) | |
| Personal Hygiene | Dependent | 7 (3.5) | 1 (0.5) | 8 (4.0) | <0.001** |
| | Independent | 16 (8.0) | 176 (88.0) | 192 (96.0) | |
| Bowel Movements | Dependent | 4 (2.0) | 5 (2.5) | 9 (4.5) | 0.012** |
| | Independent | 19 (9.5) | 172 (86.0) | 191 (95.5) | |
| Urination | Dependent | 5 (2.5) | 31 (15.5) | 36 (18.0) | 0.620 |
| | Independent | 18 (9.0) | 146 (73.0) | 164 (82.0) | |
| Toilet Use | Dependent | 5 (2.5) | 3 (1.5) | 8 (4.0) | <0.001** |
| | Independent | 18 (9.0) | 174 (87.0) | 192 (96.0) | |
| Bed-to-Chair Transfers | Dependent | 6 (3.0) | 12 (6.0) | 18 (9.0) | 0.002 |
| | Independent | 17 (8.5) | 165 (82.5) | 182 (91.0) | |
| Ambulation | Dependent | 7 (3.5) | 7 (3.5) | 14 (7.0) | <0.001 |
| | Independent | 16 (8.0) | 170 (85.0) | 186 (93.0) | |
| Stair Climbing | Dependent | 14 (7.0) | 38 (19.0) | 52 (26.0) | <0.001 |
| | Independent | 9 (4.5) | 139 (69.5) | 148 (74.0) | |
| Total | Dependent | 17 (8.5) | 66 (33.0) | 83 (41.5) | 0.001 |
| | Independent | 6 (3.0) | 111 (55.5) | 117 (58.5) | |

*Pearson's Chi-Square Test.
**Fisher's Exact Test.