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REHABILITATION NURSING WITH OLDER ADULTS WITH CARDIORESPIRATORY IMPAIRMENT, FAMILY AND COMMUNITY – CASE REPORT

ENFERMAGEM DE REABILITAÇÃO COM A PESSOA IDOSA COM COMPROMISSO CARDIORRESPIRATÓRIO, FAMÍLIA E COMUNIDADE – RELATO DE CASO

ENFERMERÍA DE REHABILITACIÓN CON ANCIANOS CON COMPROMISO CARDIORRESPIRATORIO, FAMILIA Y COMUNIDAD – INFORME DE CASO

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RESUMO

Introdução: O compromisso cardiorrespiratório em pessoas idosas hospitalizadas constitui uma condição clínica complexa, frequentemente associada ao declínio funcional e à diminuição da autonomia. Patologias como a insuficiência cardíaca e a doença pulmonar obstrutiva crónica têm impacto na capacidade para realizar atividades de vida diária. Neste contexto, o Enfermeiro Especialista em Enfermagem de Reabilitação assume uma intervenção fundamental na promoção do autocuidado e na capacitação da pessoa e da família. O objetivo deste relato de caso consistiu em descrever os ganhos em saúde resultantes da intervenção deste profissional a uma pessoa idosa com compromisso cardiorrespiratório durante o internamento.

Metodologia: Estudo descritivo do tipo relato de caso clínico, seguindo as orientações CARE da EQUATOR Network. A intervenção decorreu numa enfermaria de medicina de uma Unidade Local de Saúde da região de Lisboa, durante nove dias de internamento. A evolução clínica e funcional foi avaliada através da Escala de Medida de Independência Funcional, *London Chest Activity of Daily Living Scale*, Escala de *Borg* Modificada, modified Medical Research Council Dyspnea Scale, Índice de Bem-Estar Pessoal e indicadores selecionados da Nursing Outcomes Classification relativos à gestão da energia.

Resultados: Durante o internamento observaram-se melhorias no controlo da dispneia, da tolerância ao esforço, da independência funcional, conhecimento sobre gestão da energia e bem-estar percebido. Na escala de Medida de Independência Funcional verificou-se a alteração de 57 para 103, na Escala de *London Chest Activity of Daily Living* de 72 para 22, o *score* mMRC melhorou de 5 para 4 e no Índice de Bem-Estar Pessoal de 48 para 58.

Discussão: As alterações observadas foram temporalmente concomitantes com um programa estruturado e individualizado de enfermagem de reabilitação, mas não permitem estabelecer causalidade devido ao desenho de relato de caso e à ocorrência simultânea de tratamento médico e cuidados multidisciplinares.

Conclusão: Neste caso, a implementação de um plano de cuidados de enfermagem de reabilitação individualizado foi acompanhada por melhorias no controlo dos sintomas respiratórios, na independência funcional, nos conhecimentos sobre gestão da energia e no bem-estar percebido. Estes resultados sugerem uma potencial contribuição da enfermagem de reabilitação para a recuperação de idosos com compromisso cardiorrespiratório, embora as alterações observadas não possam ser distinguidas da estabilização clínica e do tratamento multidisciplinar que ocorreram em simultâneo.

Descritores: enfermagem em reabilitação; autocuidado; insuficiência cardíaca; doença pulmonar obstrutiva crónica; relatos de casos.

ABSTRACT

Introduction: Cardiorespiratory impairment in hospitalized older adults represents a complex clinical condition frequently associated with functional decline and reduced autonomy. Conditions such as heart failure and chronic obstructive pulmonary disease significantly impact individuals' ability to perform activities of daily living and require multidisciplinary management. The Rehabilitation Nurse Specialist plays a key role in promoting self-care, improving functional capacity, and empowering individuals and families. The objective is to describe the health gains obtained through the intervention of a Rehabilitation Nurse Specialist in the care of an older adult with cardiorespiratory impairment during hospitalization.

Methodology: A descriptive clinical case report study, following the EQUATOR Network's CARE guidelines. The intervention took place in an internal medicine ward at a Local Health Unit in the Lisbon region during a nine-day hospital stay. Clinical and functional progress was assessed using the Functional Independence Measure, the London Chest Activity of Daily Living Scale, the Modified Borg Scale, the Modified Medical Research Council Dyspnea Scale, the Personal Well-Being Index, and selected indicators from the Nursing Outcomes Classification related to energy management.

Results: During hospitalization, improvements were observed in dyspnea control, exercise tolerance, functional independence, knowledge of energy management, and perceived well-being. On the Functional Independence Measure scale, the score changed from 57 to 103; on the London Chest Activity of Daily Living Scale, from 72 to 22; the mMRC score improved from 5 to 4; and on the Personal Well-Being Index, from 48 to 58.

Discussion: The observed changes occurred concurrently with a structured and individualized rehabilitation nursing program; however, they do not allow for the establishment of causality due to the case report design and the simultaneous occurrence of medical treatment and multidisciplinary care.

Conclusion: In this case, implementation of an individualized rehabilitation nursing care plan was accompanied by improvements in respiratory symptom control, functional independence, energy-management knowledge and perceived well-being. These findings suggest a potential contribution of rehabilitation nursing to recovery in older adults with cardiorespiratory impairment, although the observed changes cannot be distinguished from concurrent clinical stabilization and multidisciplinary treatment.

Descriptors: rehabilitation nursing; self-care; heart failure; chronic obstructive pulmonary disease; case reports.

RESUMEN

Introducción: El compromiso cardiorrespiratorio en ancianos hospitalizados constituye una condición clínica compleja, frecuentemente asociada con el deterioro funcional y la disminución de la autonomía. Patologías como la insuficiencia cardíaca y la enfermedad pulmonar obstructiva crónica tienen un impacto significativo en la capacidad para realizar actividades de la vida diaria. En este contexto, el Enfermero Especialista en Enfermería de Rehabilitación desempeña un papel fundamental en la promoción del autocuidado y en el empoderamiento del anciano y de su familia. El objetivo de este reporte de caso fue describir los beneficios en salud derivados de la intervención de este profesional en un anciano con compromiso cardiorrespiratorio durante la hospitalización.

Metodología: Estudio descriptivo tipo informe de caso clínico, siguiendo las directrices CARE de la Red EQUATOR. La intervención se llevó a cabo en una sala de medicina de una Unidad Local de Salud de la región de Lisboa, durante nueve días de hospitalización. La evolución clínica y funcional se evaluó mediante la Escala de Medida de Independencia Funcional, la London Chest Activity of Daily Living Scale, la Escala de Borg modificada, la Escala de disnea del Medical Research Council modificada, el Índice de Bienestar Personal e indicadores seleccionados de la Clasificación de Resultados de Enfermería (Nursing Outcomes Classification) relacionados con la gestión de la energía.

Resultados: Durante la hospitalización se observaron mejoras en el control de la disnea, la tolerancia al esfuerzo, la independencia funcional, los conocimientos sobre la gestión de la energía y el bienestar percibido. En la escala de Medida de Independencia Funcional se observó un cambio de 57 a 103; en la Escala London Chest de Actividad de la Vida Diaria, de 72 a 22; la puntuación mMRC mejoró de 5 a 4; y en el Índice de Bienestar Personal, de 48 a 58.

Discusión: Los cambios observados coincidieron temporalmente con un programa estructurado e individualizado de enfermería de rehabilitación, pero no permiten establecer una relación causal debido al diseño de estudio de caso y a la coexistencia de tratamiento médico y cuidados multidisciplinares.

Conclusión: En este caso, la aplicación de un plan de cuidados de enfermería de rehabilitación individualizado vino acompañada de mejoras en el control de los síntomas respiratorios, la autonomía funcional, los conocimientos sobre la gestión de la energía y el bienestar percibido. Estos resultados sugieren una posible contribución de la enfermería de rehabilitación a la recuperación de las personas mayores con insuficiencia cardiorrespiratoria, aunque los cambios observados no pueden distinguirse de la estabilización clínica y el tratamiento multidisciplinar que se llevaron a cabo simultáneamente.

Descriptores: enfermería de rehabilitación; autocuidado; insuficiencia cardíaca; enfermedad pulmonar obstructiva crónica; informes de casos.

INTRODUCTION

Maintaining health and well-being is essential for preserving autonomy throughout the life course. In aging societies, where the burden of chronic disease continues to increase, healthcare systems must adopt integrated approaches that promote functional recovery and empower individuals, families, and communities. In Portugal, chronic diseases represent a major challenge for the healthcare system and require coordinated care strategies aimed at maintaining autonomy and improving quality of life.[1]

Cardiorespiratory impairment is frequently observed among older adults and may lead to significant reductions in functional capacity and independence. This condition can affect multiple dimensions of health, including physical, psychological, emotional, and social well-being. Within this context, the Rehabilitation Nurse Specialist (RNS) plays a fundamental role in the development of individualized care plans aimed at improving functional capacity and supporting the transition process during hospitalization.[2,3,4]

Heart failure (HF) is characterized by a complex set of clinical symptoms including dyspnea, fatigue, and peripheral edema. Clinical signs such as elevated jugular venous pressure, pulmonary crackles, and the presence of a third heart sound may also be observed. HF is associated with high rates of hospitalization and represents a significant cause of morbidity and mortality among older adults. [5,6]

Non-pharmacological interventions such as cardiac rehabilitation have demonstrated significant benefits in improving exercise tolerance and functional capacity in individuals with HF. In the past, individuals hospitalized with heart failure were frequently confined to bed rest. However, advances in rehabilitation science have demonstrated that structured rehabilitation programs contribute to improved clinical outcomes and better quality of life.[4,6]

Chronic obstructive pulmonary disease (COPD) is another major cause of cardiorespiratory impairment in older adults. COPD is defined as a heterogeneous lung condition characterized by persistent respiratory symptoms, including dyspnea, cough, and sputum production. These symptoms are often associated with inflammatory processes resulting from interactions between genetic and environmental factors.[7,8]

Individuals with COPD frequently experience exercise intolerance, reduced physical activity, and social isolation, which may significantly affect their quality of life. Respiratory rehabilitation has therefore become an essential component of care,

contributing to improved exercise tolerance and reduced limitations in activities of daily living.[3,7,8]

In hospitalized older adults with cardiorespiratory impairment, the implementation of individualized rehabilitation programs is essential. These programs should include comprehensive clinical assessment, targeted therapeutic interventions, and education strategies that promote self-care and symptom management.[4]

The literature highlights the importance of person-centered care plans integrating cardiac and respiratory rehabilitation strategies. Farghaly et al. emphasize that care plans should address both dyspnea and fatigue while ensuring safety and adherence to international guidelines.[5] Communication between healthcare professionals, patients, and families is also fundamental to ensure effective care and promote empowerment in self-management of chronic conditions.[9]

Mobility-promoting interventions during hospitalization have been associated with improved functional outcomes and fewer complications.[10] Patient-reported satisfaction has been identified as an important indicator of healthcare quality.[11] Nevertheless, detailed clinical case reports describing how rehabilitation nursing assessment, intervention, and outcomes are linked during hospitalization remain limited.

Therefore, the aim of this clinical case report was to describe the health gains obtained through the intervention of a RNS in the care of an older adult with cardiorespiratory impairment during hospitalization.

CASE PRESENTATION

Patient information and clinical history

An 88-year-old woman, retired from her occupation as a fashion designer, was admitted to the emergency department because of dyspnea and fatigue of three days' duration, accompanied by dizziness and asthenia. She denied cough, fever, sputum production, gastrointestinal symptoms, and urinary complaints. After initial assessment in the emergency department, she was transferred to the medical ward on the following day. Chest radiography showed a bilateral reticular pattern and slight blunting of the right costophrenic angle, without visible consolidation. Electrocardiography showed a paced rhythm at 60 beats/min, without signs of acute ischemia.

Her medical history included heart failure with preserved ejection fraction, permanent atrial fibrillation/bradycardia–tachycardia syndrome with pacemaker implantation, chronic obstructive pulmonary disease, long-term oxygen therapy, hypertension, dyslipidemia, nodular goiter, and chronic venous disease. She lived alone and identified her niece and two neighbours as her main sources of support. Her expressed goal was to return home and regain the ability to walk, with or without a walking aid.

Clinical findings and initial rehabilitation assessment

At the initial rehabilitation assessment, the patient required oxygen therapy at 2 L/min and presented severe activity-related dyspnea (mMRC score 5). Modified Borg dyspnea was 4 during positioning/mobilization and 2 during the initial respiratory exercises. Functional assessment showed a FIM score of 57 and an LCADL score of 72. The Personal Well-Being Index, assessed on day 3, was 48. These findings supported prioritization of compromised ventilation and dyspnea, activity intolerance and functional dependence, and self-management of activity and energy conservation.

METHODOLOGY

A descriptive clinical case report (CCR) was developed in accordance with the CARE reporting guidelines. The case occurred in a medical ward of a Local Health Unit in the Lisbon region during a nine-day hospitalization.

The rehabilitation nursing assessment identified three priority clinical domains: compromised ventilation and dyspnea, activity intolerance and functional dependence, and self-management of activity and energy conservation. The rehabilitation nursing care plan was structured using the Portuguese Order of Nurses ontology and the competencies of the Rehabilitation Nurse Specialist[12].

Clinical and functional evolution was assessed using the Modified Borg Scale, the modified Medical Research Council Dyspnea Scale (mMRC), the London Chest Activity of Daily Living Scale (LCADL), the Functional Independence Measure (FIM), and the Personal Well-Being Index. Knowledge related to energy-management strategies was additionally assessed using selected Nursing Outcomes Classification (NOC) energy-management knowledge indicators. [6,13,14,15,16,17]

The exercise intervention was structured according to FITT-VP principles—frequency, intensity, time, type, volume, and progression—and individualized according to the patient's clinical condition, symptoms, and tolerance.[3,6,18]

Safety monitoring included pulmonary auscultation, heart rate monitoring, peripheral oxygen saturation assessment and perceived exertion. Exercise intensity was individualized and monitored using heart rate and the Modified Borg Scale. Heart rate was monitored to avoid increases greater than approximately 20-30 beats/min above baseline or values exceeding 120 beats/min, in accordance with recommended guidelines.[6,18] Gait training was performed on a regular, flat surface over distances of 25–50 meters, with a daily progressive increase of 10–15 minutes, targeting a final distance of 150–200 meters.[6,18]

The selected instruments assessed complementary outcome domains: dyspnea and perceived exertion (mMRC and Modified Borg Scale), dyspnea-related limitations in activities of daily living (LCADL), functional independence (FIM), perceived well-being (Personal Well-Being Index), and knowledge related to energy management (selected NOC indicators). [6,13,14,15,16,17]

The rehabilitation nursing care plan presented in Tables 1–4 was developed from the assessed data and linked the priority clinical domains to the interventions and documented outcomes. Table 5 presents serial Borg and heart-rate measurements during self-care activities, and Table 6 summarizes the main outcome measures.

Table 1 - RNS intervention with the person with impaired ventilation

Diagnosis: Compromised ventilation		
Objective	**Interventions**	**Evaluation and documented outcome**
Optimize ventilation and reduce dyspnea while maintaining respiratory safety	• Positioning to optimize ventilation; • Oxygen therapy according to prescription; • Control and dissociation of respiratory phases; • Pursed-lip expiration; • Posterior diaphragmatic reeducation; • Bilateral lower-costal reeducation; • Progressive mobilization	• SpO2 and oxygen flow; • Modified Borg Scale; • mMRC **Outcomes:** • Oxygen Flow: 2L/min (days 2-3), 1L/min (day 4) and 0.5 L/min from day 5 onward, with SpO_2 maintained at approximately 95–96%. • Borg dyspnea during positioning/mobilization decreased from 4 to 1; during respiratory exercises, from 2 to 0. • mMRC improved from 5 to 4.

Table 2 - RNS intervention with the person with dyspnea

Diagnosis: Potential to improve dyspnea control and performance of breathing exercises		
Objective	**Interventions**	**Evaluation and documented outcome**
Promote dyspnea self-management and the ability to perform the taught breathing exercises.	• Assess dyspnea; • Instruct and train breathing exercises at rest and during activity; • Analyze the relationship between breathing control and dyspnea; • Reinforce performance and adherence; • Integrate breathing control into activities of daily living.	• Modified Borg Scale - dyspnea assessment • LCADL • mMRC • Personal Well-being Index **Outcomes:** • Respiratory exercise volume progressed from 10 to 20 cycles according to tolerance. • Borg dyspnea associated with respiratory exercises decreased from 2 to 0; • mMRC improved from 5 to 4.

Table 3 - RNS intervention with the person with activity intolerance

Diagnosis: Potential to improve knowledge of exercise regime self-management and Potential to improve awareness of the relationship between physical exercise and activity tolerance		
Objective	**Interventions**	**Evaluation and documented outcome**
Increase functional independence and knowledge of safe activity and energy-management strategies, while supporting continuity of care	• Progressive training in activities of daily living, transfers, stand and gait; • Education on physical activity, exercise safety, activity-rest balance, energy conservation techniques and use of assistive devices; • Provision of educational material; • Referral for continuity of care.	• FIM • LCADL • NOC **Outcomes:** • FIM: 57□103. • LCADL: 72□26□22. • Selected NOC energy-management knowledge indicators: most increased from 1 (no knowledge) on day 3 to 3 (moderate knowledge) on day 9; knowledge of effective breathing exercises and correct use of assistive devices increased from 2 to 3.

Table 4 - RNS intervention with the person with cardiorespiratory compromise

Intervention days	2nd	3rd	4th	5th	6th	8th	9th
Warm-up	Breathing exercises/Respiratory retraining						
Functional/ Aerobic training	ADL bed	ADL armchair	ADL + steps	ADL + walking	ADL + walking	ADL + walking	ADL + walking
Recovery/ Relaxation	Rest and relaxation position: coachman position which allows the curvature of the diaphragm to be aligned and optimizes the breathing pattern; exhalation with semi-closed lips, relaxation of the shoulder girdle, neck and upper limbs.						
Frequency	Daily intervention during hospitalization, according to clinical stability and tolerance.						
Intensity	Low-intensity activity individualized according to symptoms and clinical tolerance. Intensity was monitored using heart rate and the Modified Borg Scale; heart rate was monitored to avoid an increase >20–30 beats/min above baseline or values >120 beats/min. No predefined numerical Borg target was documented.						
Time	Activity periods of approximately 3 to 5 minutes, with 1-2 minute recovery periods when required.						
Type of exercise Volume and Progression	Respiratory retraining included control and dissociation of respiratory phases, pursed-lip expiration, posterior diaphragmatic re-education, and bilateral lower-costal re-education. Respiratory exercise volume progressed from 10 to 20 cycles. Functional training progressed from ADLs in bed and armchair to standing, steps, and level-ground walking with a walking frame, reaching 100 m with three pauses by day 9.						

Devices / monitoring	Walking with a walker/walking frame; pulse oximeter and cardiac tracing preferably, nasal cannula (nasal prongs) and portable oxygen source.
Outcome measures	Modified Borg Scale - assessment of dyspnea and subjective perception of exertion; FIM; LCADL, Personal Well-Being Index and selected NOC energy-management knowledge indicators.
Strategies	Energy management techniques, Integrative therapies: music therapy and humor therapy; Positive reinforcement in communication, praise, being present, compassion, training with the patient/family.

Table 5 - Assessment of Heart Rate and Modified Borg Scale – assessment of subjective perception of exertion before and after RNS intervention in self-care

Intervention days	2nd		3rd		4th		5th		6th		8th		9th	
Eating	5	6	4	5	2	3	2	3	2	2	2	2	1	2
Taking Care of Personal Hygiene	5	6	4	5	2	3	2	3	2	3	2	3	1	2
Standing up	-	-	4	5	2	3	2	3	2	3	2	3	1	2
Sitting	-	-	4	5	2	3	2	3	2	3	2	3	1	2
Mobility/ Transferring	-	-	4	5	2	3	2	3	2	3	2	3	1	2
Dressing/ Undressing	-	-	4	5	2	3	2	3	2	3	2	3	1	2
Walking with a device (Walking frame)	-		4	5	2	3	2	3	2	3	2	3	1	3
Distances and pauses	-		+/- 2 steps (1 pause)		+/- 5 steps (1 pause)		25 meters (1 pause)		50 meters (2 pauses		60 meters (3 pauses)		100 meters (3 pauses)	
Heart Rate (beats per minute)	-		63	71	61	76	60	85	61	89	62	85	65	89

Note: Except for distance/pauses, values are presented as pre-activity / post-activity measurements for each intervention day.

RESULTS

During the nine-day hospitalization, improvements were observed in respiratory symptom control, functional independence, energy-management knowledge, and perceived well-being while the individualized rehabilitation nursing care plan was being implemented.

RESPIRATORY MANAGEMENT

During hospitalization, improvement in respiratory symptom control was observed alongside progressive reduction in oxygen requirements. Oxygen therapy was maintained at 2 L/min on days 2 and 3, reduced to 1 L/min on day 4, and subsequently maintained at 0.5 L/min from day 5 onward, while peripheral oxygen saturation remained approximately 95-96%.

Perceived dyspnea also decreased during the intervention period. The mMRC dyspnea score improved from 5 at the initial assessment to 4 at the final assessment. During positioning and progressive mobilization, Modified Borg dyspnea scores decreased from 4 during the initial phase to 1 by the end of hospitalization. During abdominal-diaphragmatic breathing and thoracic re-expansion exercises, dyspnea ratings decreased from 2 during the initial sessions to 0 in subsequent sessions.

Respiratory retraining comprised control and dissociation of respiratory phases, pursed-lip expiration, posterior diaphragmatic re-education and bilateral lower-costal re-education. Exercise volume progressed from 10 to 20 respiratory cycles according to clinical tolerance.

FUNCTIONAL CAPACITY

Interventions targeting activity intolerance included training in activities of daily living, transfers, standing, gait and education on energy conservation techniques. These interventions aimed to increase functional independence while preventing fatigue and symptom exacerbation. Walking progressed from a few steps with pauses to 100 m with a walking frame and three pauses by day 9.

The FIM score increased from 57 at admission to 103 at discharge, indicating a transition from severe dependence to mild dependence in activities of daily living.

Similarly, the LCADL score decreased from 72 at the initial assessment to 26 on day 4 and to 22 on day 9, indicating progressively less dyspnea-related limitation during activities of daily living.

Serial Modified Borg assessments showed lower perceived exertion across several self-care activities over the hospitalization period, while heart-rate responses remained within the safety parameters used to guide progression (Table 5).

SUBJECTIVE WELL-BEING

Educational interventions and continuous support during hospitalization aimed to improve the patient's understanding of her health condition and promote self-management of symptoms.

The Personal Well-Being Index increased from 48 on day 3 to 58 on day 9, indicating improved satisfaction with health status and greater perceived security regarding the future.

NOC INDICATORS

At baseline, on the third day of hospitalization, the Nursing Outcomes Classification (NOC) indicators related to knowledge of energy-management techniques showed scores corresponding to no knowledge (1) or limited knowledge (2). At the final assessment, on the last day of hospitalization, all indicators had improved to moderate knowledge (3). The assessed NOC indicators included knowledge of recommended physical activity, activity restrictions, appropriate activities, factors that increase energy expenditure, factors that reduce energy expenditure, energy limitations, methods for identifying important activities, strategies for modifying the environment, strategies for balancing activity and rest, strategies for stress management, energy-management techniques, methods for monitoring heart rate, effective breathing exercises, appropriate body posture, work-simplification techniques, correct use of assistive devices, and community resources to support energy management.

Table 6 - Results obtained on the scales: FIM, LCADL, Personal Well-being Index, mMRC, NOC

Results obtained in the scales: FIM, LCADL and Personal Well-being Index							
Intervention days / **Scales evaluated:**	**2nd**	**3rd**	**4th**	**5th**	**6th**	**8th**	**9th**
FIM (no limitations in ADL: maximum score:126)	57						103
LCADL (no limitations in ADL: maximum score:0)	72		26				22
Personal Well-being Index (maximum satisfaction rating: maximum score: 80)		48					58
mMRC (dyspnea score)	5						4
Selected NOC energy-management knowledge indicators		Most: 1; Breathing exercises/ assitive device: 2					3

DISCUSSION

This case report describes clinically improvements in respiratory symptom control, functional independence, energy-management knowledge, and perceived well-being during a nine-day hospitalization in which an individualized rehabilitation nursing programme was implemented. The temporal relationship between the intervention and the observed changes supports a possible contribution of rehabilitation nursing care; however, the case-report design does not permit causal attribution.

Respiratory outcomes improved over the hospitalization period. Oxygen requirements decreased from 2 L/min on days 2–3 to 0.5 L/min from day 5 onward while SpO_2 remained approximately 95–96%. In parallel, mMRC improved from grade 5 to 4, Borg dyspnea during positioning/mobilization decreased from 4 to 1, and Borg dyspnea during respiratory exercises decreased from 2 to 0. These changes occurred while the patient underwent respiratory retraining that included control and dissociation of respiratory phases, pursed-lip expiration, posterior diaphragmatic re-education, and bilateral lower-costal re-education, with progression from 10 to 20 respiratory cycles. Respiratory rehabilitation programmes have been associated with reduced dyspnea and improved exercise tolerance in people with COPD.[7,8]

Functional improvement was reflected in an increase in FIM from 57 to 103 and a decrease in LCADL from 72 to 22. These changes occurred alongside progressive training in activities of daily living, transfers, standing, and gait, with walking progressing to 100 m using a walking frame. This pattern is consistent with evidence supporting progressive rehabilitation and mobility interventions in hospitalized patients and with cardiac rehabilitation approaches associated with improved functional capacity in people with HF.[4,5,6,10] The education and self-management component was also linked to documented outcomes. Most selected NOC knowledge indicators related to energy management increased from no knowledge to moderate knowledge, while knowledge of effective breathing exercises and correct use of assistive devices increased from limited to moderate knowledge. These findings support the value of explicitly linking educational nursing interventions to measurable knowledge outcomes rather than inferring self-efficacy or adherence in the absence of a specific validated measure.

Perceived well-being increased from 48 to 58 on the Personal Well-Being Index, with improvements in satisfaction with life, health, and security regarding the future. This patient-reported outcome complements the functional measures and is consistent with the relevance of including patient-perceived outcomes when evaluating the quality and person-centredness of care.[11,16]

Several limitations must be considered. First, this report describes a single clinical case and therefore does not support generalization or causal inference. Second, the nine-day hospitalization limited the duration of the rehabilitation programme and precluded assessment of longer-term outcomes. Third, the observed improvements occurred concurrently with medical treatment and multidisciplinary care; clinical stabilization resulting from treatment of the acute cardiorespiratory condition may therefore have contributed substantially to the changes observed, and the independent effect of rehabilitation nursing cannot be determined. Finally, no post-discharge follow-up was available to establish whether the functional, symptom-management, and knowledge gains were maintained.

Further studies with larger samples, comparative designs, and longer follow-up are needed to clarify the specific contribution of rehabilitation nursing interventions and the sustainability of outcomes in older adults with cardiorespiratory impairment.

CONCLUSION

In this clinical case, improvements in respiratory symptom control, functional independence, knowledge related to energy management and perceived well-being were observed during hospitalization while an individualized rehabilitation nursing care plan was implemented. The patient showed reduced perceived dyspnea, lower oxygen requirements, greater functional independence and lower dyspnea-related limitation during activities of daily living, together with improved knowledge of energy-management strategies. These findings suggest a potential contribution of structured rehabilitation nursing care to the recovery process of an older adult with cardiorespiratory impairment. However, because medical treatment, multidisciplinary care and clinical stabilization occurred concurrently, the observed improvements cannot be attributed exclusively to the rehabilitation nursing intervention. Further studies with stronger designs and longer follow-up are required to examine the specific contribution and sustainability of these outcomes.

DECLARAÇÃO DO CONSELHO DE REVISÃO INSTITUCIONAL

O estudo foi conduzido de acordo com a Declaração de Helsínquia e aprovado pelo Conselho de Ética em Investigação da Escola Superior de Saúde Atlântica n.º PCE21_2024 ESSATLA 2024 (aprovado em 08.11.2024) para estudos envolvendo humanos.

O estudo teve aprovação para a utilização do Índice de Bem-Estar Pessoal por parte do autor.

Este estudo garante o pedido de consentimento à pessoa visada, com autorização da mesma.

INSTITUTIONAL REVIEW BOARD STATEMENT

The study was conducted in accordance with the Declaration of Helsinki and approved by the Institutional Review Board (or Ethics Committee) of Escola Superior de Saúde Atlântica n. PCE21_2024 ESSATLA 2024 (approved on 08.11.2024) for studies involving humans.

The study had approval for the use of the Personal Well-Being Index by the author.

This study guarantees the request for consent from the person concerned, with their authorization.

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To all Nurses Specializing in Rehabilitation Nursing.

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