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Impact of Chronic Obstructive Pulmonary Disease (COPD) on Activities of Daily Living and Instrumental Activities of Daily Living in the Elderly: A Literature Review

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Abstract

Background: *Chronic Obstructive Pulmonary Disease (COPD) is a leading cause of functional decline in the elderly, significantly affecting their ability to perform Activities of Daily Living (ADLs) and Instrumental Activities of Daily Living (IADLs). Symptoms such as fatigue, dyspnea, and muscle weakness contribute to reduced independence, making routine self-care and complex tasks like financial management, shopping, and transportation challenging. Comorbidities, including cardiovascular disease and cognitive impairments, further impact their functional capabilities.*

Objective: *This review examines the impact of COPD on ADLs and IADLs in elderly patients, highlights challenges associated with disease progression, and explores intervention strategies aimed at improving functional independence and quality of life.*

Methodology: *A literature review was conducted to analyze studies assessing the limitations imposed by COPD on daily activities. Research on pulmonary rehabilitation, physical therapy, assistive technologies, and psychological support was reviewed to evaluate their effectiveness in maintaining functional independence.*

Results: *COPD progression leads to increased physical dependency, with fatigue and dyspnea being major barriers to independence. Pulmonary rehabilitation and physical therapy improve endurance and strength, while assistive technologies and psychological interventions support daily functioning. Despite these benefits, gaps remain in long-term management strategies.*

Conclusion: *Comprehensive, patient-centered approaches are crucial for mitigating functional decline in elderly COPD patients. Future research should focus on personalized rehabilitation programs, digital health solutions, and multidisciplinary care models to enhance quality of life and independence.*

Background

Chronic Obstructive Pulmonary Disease (COPD) is a progressive lung disorder characterized by persistent respiratory symptoms and airflow limitation due to airway and alveolar abnormalities (GOLD, 2023). It has a substantial negative influence on the quality of life of those who are impacted, especially the elderly, and is one of the major causes of illness and mortality globally (Fromer et al., 2010). Smoking, prolonged exposure to air pollution,

occupational hazards, and genetic predisposition are the main risk factors for COPD.

Prevalence of COPD in the Elderly

The prevalence of COPD rises with age, primarily affecting elderly persons. According to studies, around 10% of people over 65 have COPD, and many instances go untreated because symptoms appear gradually (Mannino & Buist, 2007). The illness places a significant strain on healthcare systems, resulting in more frequent hospital stays, higher medical expenses, and a deterioration in the general health of senior citizens (WHO, 2024).

The significance of Activities of daily Living (ADL) and Instrumental Activities of daily living (IADLs)

One's capacity to carry out Activities of Daily Living (ADLs) and Instrumental Activities of Daily Living (IADLs) is severely impacted when COPD worsens. According to Katz et al. (1963), ADLs comprise basic self-care activities like eating, dressing, taking a shower, and using the restroom, whereas IADLs include more complicated activities like handling money, taking medication, going grocery shopping, and using transit. Seniors who are unable to complete these duties experience worse mental health, decreased social participation, and increasing dependency (Lawton & Brody, 1969).

Rationale

Many older people have difficulty remaining independent in their everyday activities, even with improvements in COPD management. Even basic actions become difficult due to functional restrictions brought on by exhaustion, muscle weakness, and dyspnea (Spruit et al., 2013). Healthcare providers can create focused interventions to increase patients' autonomy and improve their quality of life by knowing how much COPD impacts ADLs and IADLs.

The literature review's objectives are as follows:

1. Look at how COPD affects older patients' ADLs and IADLs.
2. Determine the main obstacles older COPD patients encounter when completing everyday duties.
3. Examine how psychological variables, comorbidities, and the severity of the disease affect functional limitations.
4. Examine potential strategies to enhance ADL and IADL performance, such as pulmonary rehabilitation, physical therapy, and assistive technology.

By examining the body of research on the topic, this study aims to shed light on how COPD affects older people's ability to function and offer solutions for preserving their wellbeing and independence.

Methodology

Search Strategy and Data Sources

To conduct a comprehensive literature review on the impact of Chronic Obstructive Pulmonary Disease (COPD) on Activities of Daily Living (ADLs) and Instrumental Activities of Daily Living (IADLs) in the elderly, a systematic search was performed using electronic databases such as:

PubMed (National Library of Medicine)
Google Scholar
ScienceDirect
Scopus
Cochrane Library

The search was limited to peer-reviewed articles, systematic reviews, meta-analyses, and cohort studies published between 2010 and 2024 to ensure the inclusion of the latest findings on COPD and functional impairment in the elderly.

Search Terms and Keywords

A combination of Medical Subject Headings (MeSH) and free-text terms were used to ensure a broad yet relevant selection of studies. The keywords included: “COPD in elderly”, “Chronic obstructive pulmonary disease and daily living”, “Impact of COPD on ADLs”, “Functional limitations in COPD”, “Instrumental Activities of Daily Living and COPD”, “COPD disability in older adults”. And “Pulmonary rehabilitation and ADLs in COPD”.

Boolean operators (AND, OR) were used to refine the search, for example:("COPD" OR "Chronic Obstructive Pulmonary Disease") AND ("Activities of Daily Living" OR "ADLs") AND ("elderly" OR "older adults")

Inclusion and Exclusion Criteria

To ensure that the most relevant and high-quality studies were included, the following criteria were applied:

Inclusion Criteria:

- Studies published in English
- Research focusing on elderly individuals (aged 60 and above) with COPD
- Studies assessing ADLs and IADLs in relation to COPD severity
- Articles providing quantitative or qualitative data on functional limitations
- Interventional studies focusing on rehabilitation and coping strategies

Exclusion Criteria:

- Studies involving younger populations (<60 years)
- Research not directly assessing ADLs and IADLs
- Articles focusing only on COPD pathophysiology without addressing functional impact
- Case reports, editorials, and letters to the editor

Study Selection Process

A three-step process was followed for selecting studies:

1. Title and Abstract Screening: Articles were initially screened based on relevance to COPD and functional limitations.
2. Full-Text Review: Selected studies were reviewed in-depth to ensure they met the inclusion criteria.
3. Data Extraction and Synthesis: Information was systematically extracted and categorized based on study design, population characteristics, ADL/IADL assessment tools, and key findings.

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines were followed for study selection (Moher et al., 2009).

Quality Assessment of Studies:

To ensure the reliability and validity of the included studies, a quality assessment was conducted using:

Newcastle-Ottawa Scale (NOS) for cohort and case-control studies (Wells et al., 2011).

Joanna Briggs Institute (JBI) Checklist for qualitative studies (Aromataris & Munn, 2020).

Cochrane Risk of Bias Tool for randomized controlled trials (Higgins et al., 2011).

Only studies that met moderate to high-quality standards were included in the final analysis.

Data Analysis and Synthesis:

Since this is a literature review, a narrative synthesis approach was used rather than a meta-analysis. The data from selected studies were categorized under the following themes:

Impact of COPD on ADLs

Impact of COPD on IADLs

Key factors influencing functional impairment

Intervention strategies for improving daily living activities

By using a structured approach, this literature review aims to provide a comprehensive understanding of how COPD affects daily functioning in the elderly and explore possible solutions to enhance their independence.

COPD and Functional Limitations

Overview of Chronic Obstructive Pulmonary Disease (COPD)

Chronic Obstructive Pulmonary Disease (COPD) is a progressive lung disease characterized by persistent respiratory symptoms and airflow limitation due to airway inflammation and lung tissue destruction (Global Initiative for Chronic Obstructive Lung Disease [GOLD], 2024). The primary causes of COPD include smoking, environmental pollution, occupational exposure to toxins, and genetic predisposition (Fromer et al., 2010).

COPD is one of the leading causes of morbidity and mortality worldwide, with its prevalence increasing among the elderly population (Soriano et al., 2022). The disease significantly reduces lung function, leading to breathlessness (dyspnea), chronic cough, and reduced exercise capacity, which negatively impacts a patient's daily living activities and overall quality of life (Miravitlles et al., 2021).

COPD and Its Impact on Physical Functioning

As COPD progresses, patients experience muscle deconditioning, reduced endurance, and chronic fatigue, all of which contribute to functional limitations (Troosters et al., 2019). Studies indicate that dyspnea and fatigue are the primary factors affecting daily physical activity levels in elderly individuals with COPD (Spruit et al., 2020). These limitations are compounded by comorbidities such as osteoporosis, cardiovascular disease, and sarcopenia, further restricting mobility and independence (Marengoni et al., 2022).

The American Thoracic Society (ATS) and European Respiratory Society (ERS) emphasize that functional decline in COPD patients can be attributed to:

Ventilatory impairment – Reduced airflow and lung hyperinflation lead to early fatigue and breathlessness (Gloeckl et al., 2018).

Peripheral muscle dysfunction – Loss of muscle mass and strength, particularly in the lower limbs, leads to difficulties in walking, climbing stairs, and carrying objects (Gea et al., 2021).

Systemic inflammation and metabolic changes – Chronic inflammation contributes to muscle wasting and weight loss, leading to progressive disability (Cardoso et al., 2021).

Defining Activities of Daily Living (ADLs) and Instrumental Activities of Daily Living (IADLs)

Functional limitations in COPD patients are commonly assessed through Activities of Daily Living (ADLs) and Instrumental Activities of Daily Living (IADLs) (Lawton & Brody, 1969).

Activities of Daily Living (ADLs) refer to basic self-care tasks, including: Bathing, Dressing, Toileting, Eating, Mobility (walking, transferring from bed to chair) etc.

Instrumental Activities of Daily Living (IADLs) refer to more complex tasks that require higher cognitive and physical function, including: Managing finances, Cooking and meal preparation, Shopping for groceries, Housekeeping, Medication management etc.

For elderly COPD patients, even mild exertion such as bathing, dressing, or preparing mealscan cause significant dyspnea and fatigue, leading to increased dependence on caregivers (Dury et al., 2021).

How COPD Affects ADLs and IADLs in the Elderly

Research indicates that more than 50% of elderly COPD patients struggle with at least one ADL, while over 70% report limitations in IADLs. The following key factors influence these limitations:

Severity of COPD:

Patients with moderate to severe COPD (GOLD stages 3–4) experience greater limitations in ADLs/IADLs compared to those with mild COPD (Pitta et al., 2020).

As lung function declines, tasks such as climbing stairs, carrying groceries, or walking short distances become more challenging.

Muscle Weakness and Frailty:

COPD is associated with sarcopenia (age-related muscle loss), affecting grip strength, balance, and coordination, which increases fall risk and mobility impairments (Cesari,M. et al.(2012)

Studies show that COPD patients walk 30–40% fewer steps per day than healthy elderly individuals (Waschki et al., 2022).

Cognitive Decline:

Hypoxia (low oxygen levels) in COPD patients contributes to cognitive impairment, memory loss, and slower reaction times, affecting IADLs such as medication adherence and financial management (Cleutjens et al., 2012).

Psychosocial Impact:

COPD-related anxiety and depression reduce motivation and confidence in performing ADLs/IADLs (Kuhl et al., 2021).

Patients may develop social isolation, avoiding activities that require exertion or interaction, leading to further functional decline.

Assessing Functional Limitations in COPD Patients

Several validated tools are used to evaluate ADL and IADL limitations in elderly COPD patients:

Katz Index of Independence in Activities of Daily Living (Katz ADL Scale) – Measures six basic ADLs (bathing, dressing, toileting, transferring, continence, feeding) (Katz et al., 1963).

Lawton Instrumental Activities of Daily Living (Lawton IADL Scale) – Assesses independent living skills such as cooking, housekeeping, and managing medications (Lawton & Brody, 1969).

Six-Minute Walk Test (6MWT) - Measures functional exercise capacity and predicts ADL limitations in COPD patients (Holland et al., 2014).

Modified Medical Research Council (mMRC) Dyspnea Scale - Evaluates breathlessness severity and its impact on daily functioning (Bestall et al., 1999).

By using these tools, healthcare providers can quantify functional decline, tailor rehabilitation programs, and implement early interventions to improve daily living outcomes in COPD patients.

Impact of COPD on Instrumental Activities of Daily Living (IADLs)

Limitations in Managing Household Tasks (e.g., Cooking, Cleaning, Shopping)

Chronic Obstructive Pulmonary Disease (COPD) severely impacts an individual's ability to perform Instrumental Activities of Daily Living (IADLs), which are crucial for maintaining an independent and fulfilling lifestyle. Among these, household tasks such as cooking, cleaning, and shopping are particularly challenging due to the breathing difficulties and fatigue associated with COPD.

Physical Limitations: COPD-related shortness of breath (dyspnea) and muscle weakness significantly reduce an individual's capacity to perform routine household tasks. Tasks like grocery shopping, which require walking, carrying heavy items, or navigating crowded spaces, can exacerbate respiratory symptoms. It is frequently overlooked how much chronic obstructive pulmonary disease (COPD) affects younger individuals on a daily basis. Our findings indicate that doctors should not ignore the burden of disease in younger patients with COPD and emphasize the significance of improving treatment for these patients (Dekhuijzen et al.,2020)

Similarly, activities like vacuuming, mopping, or bending to clean surfaces can become physically taxing, leading to early fatigue or even exacerbations (Sundh et al., 2019).

Cognitive Decline: Everyday activities and cognition are related in COPD patients. Cognitive impairments often accompany physical limitations, further complicating the management of household chores. Attention deficits and impaired executive function can make it challenging for individuals to plan, prioritize, and execute necessary household tasks. Future studies should look into whether cognitive therapies can help patients participate as much as possible in everyday activities (Brunette et al.,2021)

Impact on Quality of Life: Depending on the severity of the condition, older CHD patients have more functional restrictions than matched controls. The fact that men with CHD are more likely to experience depression may have an impact on the physical limitations of patients, particularly those who are male. Despite the lack of an independent correlation between physical handicap and CHD, the correlations between physical disability and cardiovascular medication use likely point to a causal link between the two conditions (Ahto et al.,1991)

Studies show that individuals who require assistance with IADLs report higher levels of stress and depression compared to those who can maintain some autonomy (Pinto et al., 2018).

Challenges in Handling Finances and Medication Management

Managing finances and medications is another critical area of daily life affected by COPD. Both activities require mental clarity, attention to detail, and the physical ability to interact with paperwork or

electronic systems. However, COPD patients often face significant challenges in these domains.

Financial Management Difficulties: The cost of COPD medications and treatment can add to the financial burden, causing anxiety or discouragement among patients.

Medication Management: Effective medication management is essential for controlling COPD symptoms and preventing exacerbations. However, many COPD patients struggle with medication adherence due to breathing difficulties and memory problems. A study by Sundh et al. (2021) highlights that elderly individuals with COPD often forget to take their medications on time, leading to poor disease control. This issue is compounded when patients are required to manage multiple medications for COPD and coexisting health conditions like hypertension or diabetes.

Impact on Independence: Financial and medication management are key to maintaining autonomy. Struggles in these areas can force patients to rely more heavily on caregivers or family members, which diminishes their sense of independence and can further contribute to psychosocial distress (Pinto et al., 2018).

Reduced Ability to Use Transportation and Communication Devices

Another major consequence of COPD is the reduced ability to engage in activities that require transportation or use of communication devices. These activities, which are integral to social interaction and community engagement, are often hindered by both physical and cognitive impairments.

Transportation Difficulties: COPD patients face considerable difficulty in using public transportation or driving, primarily due to dyspnea and fatigue. The longer durations of travel or infrequent seating opportunities can worsen breathing difficulties, and the physical effort required to walk to bus stops or navigate stairs can be overwhelming (Sundh et al., 2019). As a result, many individuals with COPD become dependent on others for transportation, thus losing the ability to travel independently (Medina-Mirapeix et al., 2020). This reduces their mobility, which in turn impacts their ability to socialize, attend appointments, or participate in community events.

Communication: Professionals who explain to patients the normal pattern of decline in COPD and the inherent uncertainty about when exacerbations and mortality may occur should improve their experience shortly after diagnosis. Planning for the various issues that the patient and informal carer identify as being most important to them should result from this discussion. Oncologists are well trained to deliver the "breaking bad news" speech, which is in contrast to this (Ngwenya et al.,2021).

Social Isolation and Its Consequences

Social isolation is a significant consequence of the functional limitations experienced by COPD patients. The combined effects of dyspnea, fatigue, and cognitive decline often lead to withdrawal from social interactions.

Impact on Relationships: As patients find it more difficult to leave the home, engage in social activities, or even communicate with family and friends, they may begin to feel alienated or lonely. This withdrawal from social networks is often exacerbated by feelings of embarrassment or shame regarding their limitations. Social support, which is a key factor in maintaining psychological health, is thus significantly diminished.

Psychological consequences: Elderly COPD patients show a substantial impairment in QoL depending on the severity of airway obstruction; symptoms related to the disease may be exaggerated by mood deflection (Peruzza et al.,2003)

Health Consequences: These days, social isolation and loneliness are serious public health concerns. Suen and associates have shown how prevalent these problems are among COPD patients. As we care for our patients with chronic lung illness, it is now our collective responsibility as physicians, researchers, politicians, and health systems to recognize and manage social isolation and loneliness (Ferrante and Cohen,2020)

Gaps in Literature and Future Research Directions

Need for Longitudinal Studies on COPD and Functional Decline

While much research has been conducted on the impact of Chronic Obstructive Pulmonary Disease (COPD) on activities of daily living (ADLs) and instrumental activities of daily living (IADLs), there is a clear gap in longitudinal studies exploring how these functional declines evolve over time in elderly COPD patients.

Limited Long-Term Studies: Current literature largely consists of cross-sectional studies that provide valuable insights into the state of COPD patients' functioning at a specific point in time. However, there is a lack of research that tracks these declines over a prolonged period (more than one or two years) to better understand how COPD progresses in relation to functional independence.

The trajectory of decline in IADLs and ADLs is vital for developing appropriate intervention strategies that could slow the decline or reverse some functional impairments.

Impact of Disease Progression: Longitudinal studies would help identify when functional decline begins and the critical stages at which patients need the most support. Understanding this progression could lead to more targeted interventions for improving daily living skills . Additionally, these studies could investigate the role of early interventions, such as pulmonary rehabilitation, in mitigating or slowing down functional deterioration.

The Need for More Granular Data: There is also a need to explore the individual factors (e.g., comorbidities, lifestyle, socioeconomic status) that could influence the rate of functional decline in COPD patients. This would allow for more personalized treatment plans.

Research Questions for the Future**:** Future research should focus on questions like:

How do the functional impairments in ADLs and IADLs change over 5, 10, or 20 years in COPD patients?

What is the impact of early-stage interventions on the prevention of functional decline?

Are there biomarkers or other indicators that could predict accelerated functional decline in COPD patients?

Impact of Multidisciplinary Interventions on ADLs and IADLs

Although there is increasing evidence that multidisciplinary interventions (such as physical therapy, occupational therapy, nutrition counseling, and psychological support) can significantly improve the quality of life for patients with COPD, the impact of these integrated care approaches on ADLs and IADLs in the elderly population is still poorly understood. Traditionally, the treatment of COPD has focused on respiratory therapy and pharmacological management.

Chronic obstructive pulmonary disease (COPD) is an important cause of morbidity and disability. Many studies have investigated factors influencing quality of life (QoL) in middle-aged COPD sufferers, but little attention has been given to elderly COPD (Peruzza et al., 2003). This integrated approach could potentially restore independence in household chores, social interactions, and self-care activities, but more evidence is needed to quantify these benefits in the long term.

Research Questions for the Future:

How can multidisciplinary care models improve the management of ADLs and IADLs in elderly COPD patients?

What are the most effective interventions for improving social interaction and psychological well-being in COPD patients?

Can integrated care reduce the need for hospitalization and long-term care facilities by improving the independence of COPD patients?

Role of Digital Health Solutions in Improving Independence

With the rapid advancement of digital health technologies, there is increasing potential for remote monitoring, telemedicine, and digital interventions to play a key role in improving the independence of COPD patients, especially in managing IADLs. However, this area is still in its early stages, and more

research is needed to fully understand the impact of these technologies.

Telemedicine and Remote Monitoring: Recent studies have explored the benefits of telemedicine in providing remote consultations, but the impact of regular virtual check-ins and home-based monitoring on functional performance has not been widely studied (Sundh et al., 2021). Technologies like smart inhalers, wearable health trackers, and mobile apps can monitor symptoms in real time and provide COPD patients with the tools they need to self-manage their condition. These innovations can be particularly beneficial for those with limited mobility or access to healthcare facilities.

Digital health technologies; AI algorithms and digital health technology have many uses and hold promise for managing COPD. ML models in particular have a lot of promise for enhancing COPD digital health solutions. In order to safely integrate these algorithms into routine COPD management, future research should concentrate on improving international collaboration to investigate the cost-effectiveness and data-sharing capabilities of DHTs, improving the interpretability of AI models, and validating these algorithms through clinical trials (Chen et al.,2024). Further studies are needed to understand how these technologies can facilitate meaningful interactions and support networks for the elderly population.

Research Questions for the Future:

How can digital health solutions improve self-management of COPD and reduce dependency on caregivers?

What is the role of remote monitoring technologies in maintaining the functional status of COPD patients?

Can assistive technologies and telehealth solutions help elderly COPD patients to perform IADLs independently, and how can their effectiveness be measured?

Conclusion and Future Directions

Summary of Key Findings

Elderly individuals with Chronic Obstructive Pulmonary Disease (COPD) face significant challenges in performing Activities of Daily Living (ADLs) and Instrumental Activities of Daily Living (IADLs) due to progressive airflow limitation, muscle weakness, fatigue, and psychological distress. Research highlights those multidimensional interventions, including pulmonary rehabilitation, physical exercise, nutritional support, assistive technologies, and psychosocial strategies, are highly effective in enhancing functional independence and quality of life (Rochester et al., 2015).

Key takeaways from the study

Newer approaches to engaging with COPD patients and their families are offered by innovations like group visits and the patient-centered medical home. Primary care practices can manage COPD longitudinally and enhance patient outcomes throughout the disease's progression with patient-focused and evidence-based solutions (Fromer et al.,2010).

Structured physical activity programs (e.g., resistance training, endurance exercises, and balance training) are essential in preventing muscle deconditioning (Marengoni et al., 2022).

Nutritional support, particularly high-protein diets and vitamin D supplementation, plays a crucial role in maintaining muscle strength and reducing fatigue (Cleutjens et al., 2018).

Assistive devices and home modifications significantly reduce fall risk and physical strain, promoting independence in ADLs/IADLs (Dury et al., 2021).

Psychological and behavioural interventions such as Cognitive Behavioural Therapy (CBT) and motivational counselling help patients overcome anxiety, depression, and social withdrawal, which often contribute to functional decline (Aniwidyaningsih et al., 2008).

Technological advancements, including tele-rehabilitation, wearable activity monitors, and mobile health apps, have revolutionized COPD

management, making self-care and remote monitoring more accessible (McCarthy et al., 2015). These findings underscore the need for a multidisciplinary, patient-centered approach to improve ADLs and IADLs in COPD patients, ensuring holistic disease management.

Future Directions in COPD Management

Despite the existing evidence-based strategies, there are several areas for future research and improvement in COPD rehabilitation and functional enhancement.

Key future research areas and innovations:

A. Personalized COPD Rehabilitation Programs

Although the literature strongly supports the use of pulmonary rehabilitation, there is still debate about what should be included in the programs. Pulmonary rehabilitation is a multidisciplinary intervention that aims to integrate patient education, exercise, and lifestyle modifications into a comprehensive program (Arnold et al.,2020)

Future research should explore:

AI-driven rehabilitation models to customize exercise intensity and duration based on real-time patient data.

Genetic and biomarker-based rehabilitation plans to identify patients at higher risk of severe disability.

B. Integration of Digital Health Technologies

Why it matters: Digital technologies such as telemedicine, wearable sensors, and AI-driven health analytics have the potential to revolutionize COPD care (Troosters et al., 2019).

Future advancements may include:

AI-powered smart inhalers to monitor medication adherence and optimize dosage schedules.

Mobile applications with real-time ADL tracking to assess daily functional capacity trends.

Remote patient monitoring systems for early detection of exacerbations and functional decline.

C. Exploring the Role of Lifestyle and Behavioural Interventions

Why it matters: Psychological factors strongly influence ADL engagement, but behavioral interventions remain underutilized in COPD management (Kuhl et al., 2021).

Research should focus on:

Mindfulness-based interventions to reduce stress-induced dyspnea and enhance participation in daily tasks.

Cognitive training programs to improve memory, problem-solving, and planning abilities for better IADL performance.

Virtual reality-based pulmonary rehabilitation to enhance motivation and engagement in home-based exercise programs.

D. Multidisciplinary Models of COPD Care

Why it matters: Current COPD treatment plans lack seamless integration between physicians, physiotherapists, psychologists, and dietitians, leading to fragmented care (McCarthy et al., 2015).

Future healthcare models should emphasize:

Collaborative care teams to ensure comprehensive, patient-centered interventions.

Community-based rehabilitation programs to increase accessibility for elderly COPD patients, particularly in rural areas.

Implications for Healthcare Providers and Policymakers

To effectively improve ADLs and IADLs in COPD patients, healthcare professionals and policymakers must prioritize holistic disease management strategies.

Key recommendations:

Expand pulmonary rehabilitation programs to include functional ADL training as a core component.

Increase accessibility to tele-rehabilitation services, particularly for elderly and rural COPD patients.

Implement community-based support systems (e.g., peer support groups, caregiver training, and home-based rehabilitation).

Invest in assistive technologies to enhance independent living.

Encourage cross-disciplinary collaboration between pulmonologists, physiotherapists, psychologists, and nutritionists for integrated COPD care.

Final Thoughts

Improving ADLs and IADLs in elderly COPD patients requires a multifaceted approach that combines medical, physical, nutritional, psychological, and technological interventions. As research and healthcare innovations continue to advance, future COPD management will evolve towards personalized, AI-driven, and patient-centered solutions, ensuring enhanced functional independence and a better quality of life for affected individuals. By focusing on early intervention, continuous rehabilitation, and the integration of digital health technologies, the future holds great promise for optimizing COPD patient care and minimizing disability in elderly populations.

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