Services to Patients with subjective cognitive decline from Physical & Medical Rehabilitation Centers

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Abstract
Given the increasing prevalence of dementia and its impact on the individual, a number of non-pharmacological strategies have now been developed and are widely used to treat dementia. Non-pharmacological interventions are physical, mental and social activities developed with the aim of improving the mental status, functionality and quality of life of patients with dementia.
The main non-pharmacological interventions concern, among others:
• Mental empowerment
• Speech therapy
• Occupational therapy
• Physical exercise
Physical & Medical Rehabilitation Centers are decentralized health services that belong to the local Central Hospitals of the country, with which they are in direct scientific, nursing, educational and operational connection. They aim to provide all the necessary medical and social services to patients who suffer from diseases, among others, of the nervous system in order to strengthen their functional abilities. The services occupy Physiologist, Physiotherapist, Occupational Therapist, Speech Therapist, Psychologist and Social Worker developing a holistic interdisciplinary approach to the management of incoming cases. Accordingly, patients with subjective cognitive decline have the possibility to participate in multi-level non-pharmacological interventions in order to maintain and strengthen their functional skills.

Keywords: Non-pharmacological interventions, Physical & Medical Rehabilitation Centers, health services, subjective cognitive decline

JEL classifications: I31, I38

Introduction

Dementia is one of the main causes of disability and dependency among the elderly worldwide (Ravn, Petersen & Thuesen, 2019) as the affected person shows a progressive cognitive decline, which interferes with the person's independence after being asked to perform the activities of daily living of life. In addition to the cognitive domain, the patient tends to have neuropsychiatric, behavioral, sensorimotor issues as well as speech and language-related issues (Gupta, Prakashn & Sannyasi, 2021).

In addition, in recent years, given the demographic aging, the percentage of people with Mild Cognitive Impairment (MCI) shows an increasing trend (Koloutbanis, Karteroliotis, & Politis, 2019). Thus, there is a great need to find means for the prevention and early treatment of the disease (Mameletzi, 2013). Given the increase in the prevalence of Alzheimer's Disease (AD), the effects it has on the individual, the progress that it has been noted in the understanding of the pathogenesis and pathophysiology of AD (Tsolaki & Vassiliadis, 2002) but also that pharmacotherapy has a limited role (Gupta, Prakashn& Sannyasi, 2021) as so far no effective treatment has been found and the existing treatments are symptomatic (Kemoun et al., 2010, Lange-Asschenfeldt & Kojda, 2008, Petersen et al., 2018, Steinberg et al., 2009, Zhou et al., 2017; Kouloutbanis, Karteroliotis, & Politis, 2019) have a number of non-pharmacological strategies have now been developed as alternative methods for slowing down or improving cognitive functions in combination with pharmaceutical therapy (Teixeira et al., 2013).

Non-pharmacological treatments were created to deal with the changes that occur during the progression of the disease and which concern the psychological, social and biological status of the individual, while their main goal is to maintain and support the well-being of the individual's quality of life but and his family (Tsolaki & Kounti, 2010). They are a promising treatment for memory disorders, safe, non-invasive and without side effects that improve the functioning, independence and quality of life of the elderly (Kolentsi & Kokkios, 2022).

Non-pharmaceuticals can be applied on individuals or group level depending on the stage of the disease. The most common interventions include:

• **Mental empowerment**

Mental empowerment is a type of mental therapy for people with ADHD and dementia (Karpathiou et al., 2011). The intervention concerns memory, speech, attention, judgment through the use of various activities such as memory exercises, information on current affairs, while now with the use of technology mental strengthening programs can be carried out either by using mental exercises in the form of games or even by creating remote mental empowerment groups. It is the intervention with the strongest evidence with a statistically significant reduction in problematic behavior (Forreste et al., 2014; Kolentsi & Kokkios, 2022), with a positive effect on the intellect and the emotional state of the participants (Karpathiou et al., 2011).

• **Speech therapy**

Speech therapy as a non-pharmacological intervention for dementia can maintain and assist in the best possible verbal communication. Speech therapy interventions are adapted to each patient with the direct goal of facilitating daily communication, utilizing communication capabilities and maintaining and, if possible, recovering abilities to understand and express speech (Yang et al., 2013).

• **Occupational therapy**

The occupational therapy intervention aims to restore the functionality of the individual, utilizing programs of activation, self-care and activity in everyday life as well as ergonomic interventions in the patient's physical environment. The occupational therapy approach focuses on four areas, self-care, dealing with motor-sensory problems, dealing with psycho-emotional problems and slowing down memory loss (Harisi, 2011).

• **Physical exercise - physiotherapy - gymnastics**

Regarding physiotherapy in particular, a number of studies converge on the view that exercise is a promising non-pharmacological intervention in the management of the decline of mental functions and dementia in general (Koloutbanis, Karteroliotis, & Politis, 2019). Motor impairments, deviations in gait and balance are phenomena frequently seen in people with dementia and are associated with an increased risk of falls (Allali & Verghese, 2017; Gupta, Prakashn & Sannyasi, 2021). Systematic exercise seems to be an important non-pharmacological means (Graessel et al., 2011; Mameletzi, 2013). Regular physical exercise beyond the obvious, i.e. improving physical health and maintaining physical condition, also contributes to dealing with problems caused by mobility and balance, promotes endurance and relief from physical ailments (Saddicha & Padney, 2008), reduces the risk of wandering and aggressive behavior (Kolentsi & Kokkios, 2022), while additionally it can reduce the risk of depression and improve cognitive status (Koloutbanis, Karteroliotis, & Politis, 2019). In addition, systematic exercise, regardless of the amount and intensity, can prevent or limit the risk of NA. (Scarmea et al., 2009; Mameletzi, 2013) and additionally, as physical exercise has an effect on reducing anxiety, it leads to an improvement in attention and memory and the pathophysiological factors of NA. (Nation et al., 2011, Mameletzi, 2013).

• **Psychological support**

There is evidence that structured psychological interventions combined with regular care for people with ED or AD can reduce behavioral problems, depression and anxiety symptoms. In addition, such interventions, as they can be individualized, multi-component, improve the psychological well-being of patients in their daily activities and quality of life without side effects (Gupta, Prakashn & Sannyasi, 2021).

In our country, such interventions are carried out in Day Centers, KIFI, KAPI while they can also be developed in Physical and Medical Rehabilitation services. Many European countries now have national dementia action plans that include rehabilitation (Georges, 2012; Ravn, Petersen & Thuesen, 2019) and rehabilitation appears as a strong WHO recommendation in the recent global public health action plan for dementia.(WHO, 2017; Ravn, Petersen & Thuesen, 2019).

Physical and Medical Rehabilitation aims to promote physical and cognitive functioning, activities, participation and modification of individual and environmental conditions while at the same time being responsible for the prevention, diagnosis, treatment and management of the rehabilitation of people of all ages with pathological conditions that cause disability or morbidity (Tsouknaki et al., 2020; WHO, 2011). The field of rehabilitation refers to 4 main types:

a) preventive rehabilitation: it starts before or after the diagnosis of the person's possible disease with the aim of mitigating the functional morbidity caused by it.

b) restorative rehabilitation: aims to restore the person's previous functional state.

c) supportive rehabilitation: aims to maximize the person's functionality when the consequences of the disease have increased or are not reversible. End

d) the palliative rehabilitation: which attempts to relieve the symptoms and prevent the complications of the disease which has already manifested itself (Stathi, 2019).

Rehabilitation is a process during which all means of professional, educational, medical or other forms of intervention are utilized with the involvement of public and private resources with the aim of regaining the independence of people who have lost it due to some illness, retardation, or injury. The purpose of rehabilitation is to anticipate or reduce the potential causes that deprive individuals of capacity (Stathi, 2019).

In particular, with regard to the care of people with deficits in memory and other cognitive functions, rehabilitation provides a fundamental concept around which support for these people can be organized. In fact, the contribution of rehabilitation to dementia care is increasingly recognized both in practice and in a guiding theoretical framework (Ravn, Petersen & Thuesen, 2019).

Recovery and Rehabilitation services improve the person's quality of life, increase independence and self-confidence, participation in the community, help the person's integration or reintegration into the labor market, reduce the demand on health services and help the person and their family adapt of the new reality

In addition, early rehabilitation is particularly important, as it prevents or even reduces the loss of functionality. According to the WHO, rehabilitation services should be one of the key measures in global action plans to tackle dementia. Rehabilitation services are widely recognized as a practical framework for maximizing independence and community involvement in dementia care. Rehabilitation services are widely recognized as a practical framework for maximizing independence and community involvement in dementia care (Ravn, Petersen & Thuese, 2019). The rehabilitation program is tailored to achieve the desired goals, as each person has different experiences, preferences, motivations, strengths and requirements based on the disease (Forbes, 2021). It involves a multidisciplinary approach since it requires the participation of several health professionals. Usually, such groups are headed by physiatrists while the groups are made up of physiotherapists, occupational therapists, speech therapists, psychologists, social workers and psychologists.

Recovery and Rehabilitation services generally include:

1) Physiotherapy which refers to kinesiotherapy, muscle strengthening and gait training.

The responsibilities of physical therapists are:

• Application of special kinesiotherapy techniques to improve muscle strength, endurance and coordination of movements

• Application of appropriate physical means to relieve pain, increase range of motion and prepare the patient for physical therapy

• Application to neurological diseases of the CNS. and P.N.S. of newer neurodevelopmental neuromuscular retraining techniques

• Retraining walking on smooth and uneven ground

• Application of techniques using special machines of modern technology to perform newer therapeutic techniques

In particular, interventions can be carried out for non-HGD or AD people through physiotherapy:

• for movement and walking (use of aids, gait training, foot positions)

• for transfers (moving from sitting to standing or vice versa)

• mobility in bed (rolling, position for comfort, moving from supine to sitting) and

• specific interventions for pain control or energy conservation techniques and therapeutic exercise (Stathi, 2019).

2) Occupational therapy

Occupational therapists contribute to the prevention, improvement or even recovery of those served through responsibilities concerning:

• Improving the functionality of the upper limbs
• The improvement of cognitive and perceptual skills
• Self-Service
• The manufacture of splints and aids
• The ergonomic arrangement of spaces
• Counseling and training of escorts
• Training in the use of appropriate assistive technology equipment for environmental control and alternative communication
• Evaluation of professional skills
• Reintegration into the community
• The improvement of coordination of mobility and sensibility

3) Speech therapy

The responsibilities of speech therapists are:

• Intervention with acts of treatment, rehabilitation, counseling and inclusion in social and working life
• The assessment and learning of all kinds of communication, including association, memory, attention and "expressive" speech and language
• Swallowing assessment and training
• The retraining of mental functions

4) Psychological support

The responsibilities of the psychologist are:

• The provision of psychological (psychodiagnostic and psychotherapeutic) services to the patients of all departments of the Center
• Psychological support to the patient and his family either individually or in groups
• The execution of psychological tests

In Greece, rehabilitation services are provided by:

• The Physical and Medical Rehabilitation Centers of the General Hospitals

The Physical and Medical Rehabilitation Centers were created from the renaming of the Centers for Education of Social Support and Training of Persons with Disabilities and are now in direct scientific, nursing, educational and functional connection with the hospital to which they belong organically and administratively.

The purpose of the Physical and Medical Rehabilitation Centers is to provide health and nursing services to inpatients and outpatients who suffer from diseases of the muscular, nervous, circulatory, intestinal and respiratory systems, as well as to people of all ages who have motor or mental problems.

The services provided include:

• early diagnosis
• psychological, social and counseling support
• information for Persons with Disabilities and their families
• pre-professional and professional training of Persons with Disabilities
• functional recovery
• supporting individuals in order to achieve their inclusion in the social fabric
• cooperation with social care services at local level to coordinate their action.

Specifically, the Centers are responsible for: a) The provision of rehabilitation services with the application of the most modern benefits in terms of quality of care, diagnostic and therapeutic techniques, new technologies, research and training in the field of Physical and Medical Rehabilitation. b) The hospitalization of patients with organic and functional deficits after a congenital or acquired disease or injury of the nervous, musculoskeletal, cardiorespiratory, genitourinary system (the possibility of hospitalization does not exist in all KEFIAP structures) or multisystem damage and the application of diagnostic and therapeutic techniques from the early and subacute phase

until recovery and social reintegration. c) The provision of the necessary medical and social services to the sick citizen who needs rehabilitation in order to direct his recovery process, to strengthen his functional abilities, to replace his lost functions and with the help of the appropriate supporting technology, to promote the functional his autonomy. Through these services, the centers assist in the family and professional reintegration of the disabled citizen by intervening appropriately in shaping the conditions of his environment. d) The promotion of actions for the training of medical and other personnel, actions for the development of research, as well as innovative pioneering applications. e) The provision of services to People with Disabilities, with mental retardation, autism, sensory or multiple disabilities through programs that include psychological, social and counseling support, early diagnosis, information for people with disabilities and their families, pre-professional and professional training, functional rehabilitation, support for their integration into the social fabric, cooperation with social care services at the local level to coordinate their action (Government Gazette A', 228, 2011).

• The Social Welfare Centers (SWCs)

The KKPs, one in each administrative region, were established by law 4109/2013 and are under the supervision of the Ministry of Labour, Social Security and Social Solidarity (now the Ministry of Labor and Social Affairs), based in the respective headquarters of each region. The existing Social Care Units were included as decentralized services (branches) which included the Chronic Illness Clinics, which henceforth operate as "Chronic Illness Branches" and "Disabled Branches" as well as the Rehabilitation and Rehabilitation Centers for Persons with Disabilities, the Centers of Child Protection and the Rehabilitation and Rehabilitation Centers for Children with Disabilities. The Departments for Chronic Illnesses and Disabled Persons mainly operate for the purpose of closed care for adults of both sexes, suffering from chronic diseases, mobility problems, mental retardation and people over 65 years of age, unable to care for themselves. Beneficiaries can come from all departments of the country, but priority is given to people coming from the Prefecture to which the respective service belongs. Services provided are the psychosocial support of the beneficiaries and their families, nursing care and treatment, support and preparation in social reintegration and rehabilitation programs, physical, social and professional rehabilitation of the disabled, occupational therapy, speech therapy, physical therapy and social and recreational programs.

Discussion

Physical Medicine and Rehabilitation can prevent:

- secondary health problems
- social isolation
- the burnout of caregivers from the burden of care and the breakdown of the family
- the unnecessary admissions of patients to institutions and nursing homes
- emergency readmissions to the hospital
- the inappropriate and untimely prescription of medicines, aids, disability equipment, etc.

Rehabilitation can make the lives of people with permanent or temporary disabilities and their families easier, but more importantly, its absence can have significant consequences for individuals, such as reduced independent functioning, immobility (which includes muscle weakness, muscle atrophy, pressure ulcers), swallowing and feeding

problems, bladder and bowel problems, communication problems and overall reduction in quality of life.
There are several data that demonstrate that the course of dementia seems to be better when, with non-pharmacological interventions, patients with dementia are socially active, maintain satisfactory levels of physical activity and engage in spiritual exercises (Kolentsi & Kokkios, 2022).
Therefore, we should not only focus on extending life years but also on developing a system that will support the aging population and its demands (Stathi, 2019).

Bibliographic References

Dimitrakopoulos, S., The FIAP Specialty, Available from: http://www.iatriki-apokatastasi.gr/index.php?/arthra/fysikh-iatrikh-, Accessed: 3-1-2023
Karpathiou, N., Efthymiou, A., ...Sakka, P. (2011), Mental Exercise, A Guide for Health Professionals, University Studio Press
Kolentsi F. & Kokkios, T. (2022), Non-pharmacological interventions in dementia, To Vima tou Asclepiou, 21:2, 184-195
Kouloutbanis, K., Karteroliotis, K. & Politis, A. (2019), The effect of physical activity on dementia, Psychiatry, 30:2, 142-155
Mameletzi, D. (2013), The role of exercise in the onset and treatment of Alzheimer's disease, Archives of Hellenic Medicine, 30:5, 546-554
Stathis, K. (2019), When there is a decline in mental functions, is there a place for medical rehabilitation?, Conference: Decline in Mental Functions & Aging: Myth & Reality, Department of Rehabilitation of Patients with Neurological Diseases and Geriatric Rehabilitation of the Hellenic Society of Physical Medicine & Rehabilitation in collaboration with the Hellenic Psychiatric Association, Athens
Tsolaki, M., Vassiliadis, G. (2002), Non-pharmacological interventions in caregivers and patients with dementia, Brain,39:157-173
Tsolaki, M. & Kounti, F. (2010), Applied Topics in Pathological Aging, Hellenic Society of Alzheimer's Disease & Related Disorders, Thessaloniki
Tsouknaki, E., Raptis, A. & Platis, X. (2020), Operational proposal for the creation of a recovery-rehabilitation structure, The Rehabilitation Center in the prefecture of Rethymno, Archives of Hellenic Medicine, 37:2, 257-266
Official Gazette 228, Issue A', 2-11-2011, Reorganization of Social Solidarity Agencies, Rehabilitation Centers, Restructuring of E.S.Y. and other provisions.
Harisi, P.I. (2011), Occupational therapy intervention in the area of self-care in patients with Alzheimer's disease, Occupational Therapy, 44, 125-132
P, D., Forbes, SC, Blake, CM, Thiessen, EJ, Forbes S., (2015), Exercise programs for people with dementia (Review), Cochrane Database of Systematic Reviews, 4
Gupta, A., Prakash, N.B. & Sannyasi, G., (2021), Rehabilitation in Dementia, Indian Journal of Psychological Medicine, 43:55, 375 – 475
Ravn MB, Petersen KS & Thuesen J. (2019), Rehabilitation for people living with dementia: A scoping review of processes and outcomes. Journal of Aging Research, 2: 1–8
Saddichha, S. & Pandey, V. (2008), Alzheimer's and non-Alzheimer's dementia: a critical review of pharmacological and nonpharmacological strategies, American Journal of Alzheimer's Disease and other Dementias, 23:2, 150-161
Teixeira, J., Freitas, S., Alecrim, P., …. Mano, T. (2013), Cognitive Stimulation, Maintenance and Rehabilitation, Procedia Technology, 9:10, 1335-1343
Yang, Z., Zhang, C. & Jung Lin, C. (2013), A Longitudinal Analysis of the Lifetime Cost of Dementia, Health Serv Res, 47:4, 1660-167