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Modern approaches to the special education programs for the prevention of cognitive dysfunction in elderly people in the practice of GPs from the point of view of evidence-based medicine

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1. INTRODUCTION

People worldwide are living longer. Today most people can expect to live into their sixties and beyond. Every country in the world is experiencing growth in both the size and the proportion of older persons in the population. [1]

By 2030, 1 in 6 people worldwide will be 60 years or over. The share of the population aged 60 years and over will increase from 1 billion in 2020 to 1.4 billion. By 2050, the world's population of people aged 60 years and older will double (2.1 billion). The number of persons aged 80 years or older is expected to triple between 2020 and 2050 to reach 426 million. [1]

While this shift in the distribution of a country's population towards older ages – known as population aging – started in high-income countries (for example, in Japan, 30% of the population is already over 60 years old), it is now low- and middle-income countries that are experiencing the greatest change. By 205the 0, two-thirds of the world's population over 60 years will live in low- and aging-income countries. [1]

In Brazil, the population is getting older. Data released on 22/07/2022 at 10:00 am by the Brazilian Institute of Geography and Statistics (IBGE) show that, in 2021, Brazil had more than 10% of its population formed by elderly people aged 65 or over the deity. According to the survey, last year (2021), the Brazilian population was estimated at 212.5 million people. Of these, 21.6 million were aged 65 or over, representing 10.2%. [2]

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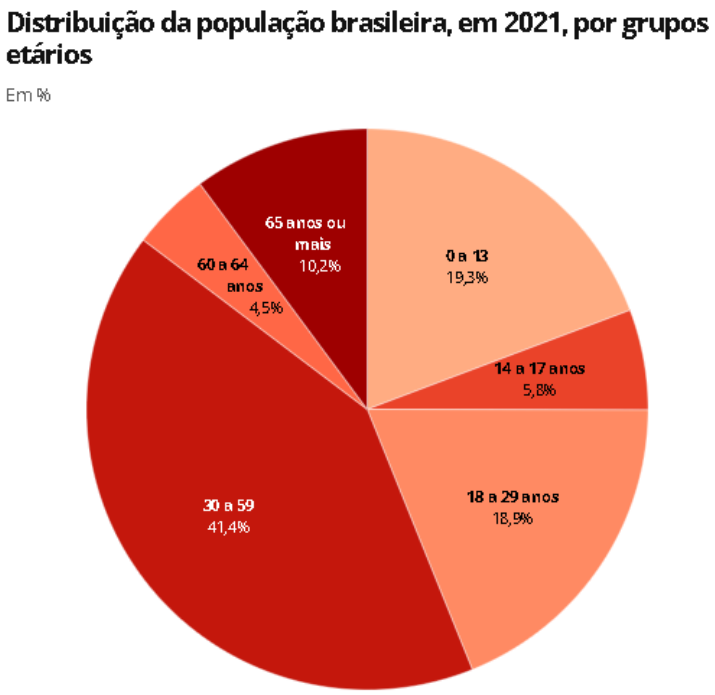
The pie charge represents the Brazilian population distribution during 2021 and their divisions by age groups.

Figure 1 – Brazilian population distribution, during 2021, by age groups. [2]



Source: IBGE

Conclusion: The largest share of the population (88.1 million) was between 30 and 59 years old last year. In turn, adolescents between 14 and 17 years old represented the smallest portion (12.3 million). The contingent of children between 0 and 13 years old (41 million) amounted to about one million more than those in the 18 to 19 age group (40.1 million). [2]

In 2012, the year in which the historical series of the research began, the Brazilian population was estimated at 197.7 million people, of which 15.2 million were 65 years of age or older, representing 7.7% of the total inhabitants. In ten years, while the Brazilian population grew by 7.7%, the number of seniors aged 65 or over increased by almost six times, by 41.6%. [2]

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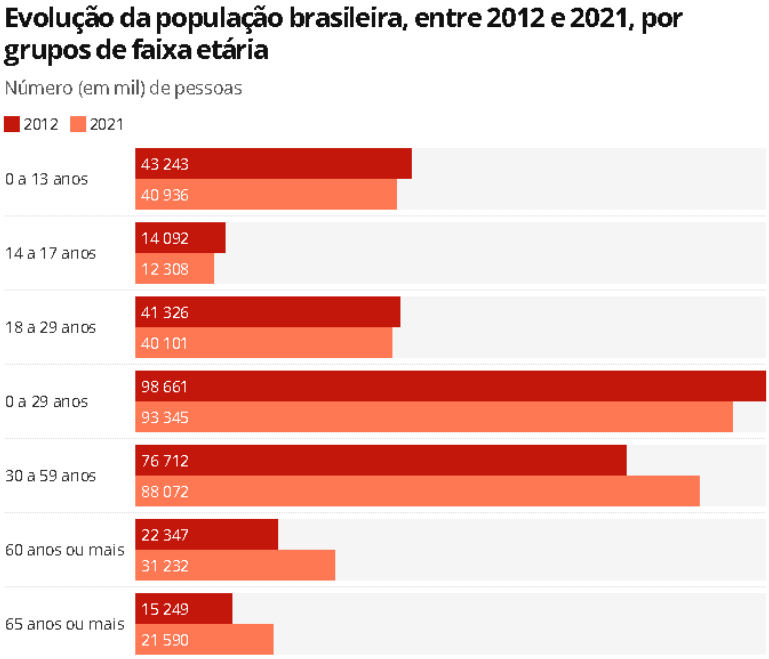
The bar charge represents the evolution of the Brazilian population between 2012 and 2021 and by age group.

Figure 2 – The evolution of Brazilian population distribution between 2012 and 2021 and by age groups. [2]



Source: IBGE

Conclusion: The IBGE highlighted that people aged 30 or over now represent 56.1% of the total population in 2021. This percentage was 50.1% in 2012. In the same period, the share of people aged 60 or over jumped from 11 .3% to 14.7% of the population - an increase of nearly 40%. On the other hand, the group of people under 30 years of age dropped 5.4% in the same period. The greatest reduction was observed in adolescents aged 14 to 17, which shrank by 12.7% in the decade. [2]

Every person – in every country in the world – should have the opportunity to live a long and healthy life. Yet, the environments in which we live can favor health or be harmful to it. Environments are highly influential on our behavior, our exposure to

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health risks (for example, air pollution or violence), our access to services (for example, health and social care), and the opportunities that aging brings. [6]

The number and proportion of people aged 60 years and older in the population are increasing. In 2019, the number of people aged 60 years and older was 1 billion. This number will increase to 1.4 billion by 2030 and 2.1 billion by 2050. This increase is occurring at an unprecedented pace and will accelerate in the coming decades, particularly in developing countries. [6]

This historically significant change in the global population requires adaptations to how societies are structured across all sectors. For example, health and social care, transportation, housing, and urban planning. Working to make the world more age-friendly is an essential and urgent part of our changing demographics. [6]

At the biological level, aging results from the impact of the accumulation of a wide variety of molecular and cellular damage over time. This leads to a gradual decrease in physical and mental capacity, a growing risk of disease, and ultimately death. [1]

Common conditions in older age include hearing loss, cataracts, refractive errors, back and neck pain and osteoarthritis, chronic obstructive pulmonary disease, diabetes, depression, and dementia. As people age, they are more likely to experience several conditions simultaneously. [1]

1.1. Description of cognitive dysfunction in the elderly people

Cognitive dysfunction in the elderly refers to the concern of or difficulty with a person's thinking, memory, concentration, and other brain functions beyond what is typically expected due to aging. [3] Cognitive dysfunction can come on suddenly or gradually, temporary or more permanent. [4]

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There are several causes that lead to the development of the decline in cognitive dysfunction of the elderly, which includes side effects of medication, metabolic and/or endocrine derangements, delirium due to illness, depression, dementia, post-stroke complications, and Alzheimer's disease, and so on. Various causes like medication side effects and depression can be improved with the help of reviewing the medications used and other interventions. Meanwhile, other causes like Alzheimer's may not be completely reversed. [5] However, there are several special education programs that are used all over the world to help prevent the development of symptoms and diseases.

In this research, I will highlight these special education programs which positively impact the prevention of cognitive dysfunction in elderly patients.

1.2. Prevalence of cognitive dysfunction in Brazil

The term mild cognitive impairment (MCI) describes a clinical entity in which there is a decline in one or more cognitive functions, leading to a relative loss of ability to perform complex activities (e.g., professional activities); individuals with MCI do not meet diagnostic criteria for dementia. MCI may be secondary to diverse etiologies, including poorly controlled systemic diseases, polypharmacy, depression, etc.; however, in many cases, it corresponds to an incipient stage of dementia, such as Alzheimer's disease or vascular dementia. Individuals with MCI may improve, stabilize, or progress to a fully developed dementia, according to the underlying cause. [7]

The diagnosis of MCI is based on clinical criteria, and complimentary tests aim to disclose treatable diseases and to identify individuals with an increased risk of conversion to dementia. Treatment is targeted to the underlying condition whenever identifiable. Cognitive rehabilitation may prove useful in the management of specific deficits, such as attention and memory. [7]

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The general Prevalence of MCI in the elderly population is estimated at around 15 to 20% [8], although an extensive variation in these rates is admitted due to different methodological research strategies, different cognitive assessment instruments, the age of the population studied, and variability of operational diagnostic criteria. Considering the agglutination of the different subtypes of MCI, studies have also indicated a highly variable annual incidence of this condition, with rates from 51 to 77 per 1,000 elderly people [9]. In a comprehensive study, the overall Prevalence of MCI was around 16%, with the Prevalence of amnestic MCI being 11.1% and non-amnestic MCI 4.9% [10]

For amnestic MCI, the annual incidence rates range from 10 to 40 per 1,000 elderlies, while rates for non-amnestic subtypes range from 28 to 36 per 1,000 elderlies. MCI incidence risks include low levels of formal education and cerebrovascular disease, in addition to advanced age [9].

Investigations on the Prevalence and incidence of MCI in Brazil are still quite limited. A clinical study developed in our midst pointed out that one-third of the elderly who attended a memory clinic at a university center met the clinical criteria for MCI, with 60% having MCI in multiple domains, 30% having amnestic MCI, and 10 % non-amnestic CCL was configured [11]. A study carried out in southern Brazil showed an annual incidence of MCI of 13 individuals per 1000 elderly [12].

1.3. Purpose and objectives of the research

Purpose: To estimate the effectiveness of special education programs for the prevention of cognitive dysfunction in elderly patients, to determine and show the best program in GP according to evidence-based clinical trials and specific guidelines from different countries.

Objectives: For critical analysis and to search and collect information using the most recent technologies, databases, systemic reviews, meta-analysis, and research

journals to determine the best methods in GP for cognitive dysfunction of the elderly according to evidence-based medicine.

1.4. Objects of study

Different and modern technologies are used to educate patients and prevent cognitive dysfunction in elderly people in the practice of GPs from the point of view of evidence-based medicine.

1.5. Materials and methods used in the research

Material: Published information about completed clinical trials, medical journals, medical literature, systemic reviews, special programs, and guidelines that were used in the prevention of cognitive dysfunction in elderly patients.

Research methods: Critical, statistical, and comparative analysis.

1.6. Practical significance of the research

Special education programs are an important method of preventing elderly patients from developing the main symptoms of cognitive dysfunction, and it can improve the quality of life of our patients while informing them about the drug toxicity when combining multiple drugs because some elderly patients go to a different doctor and combine the recommendations from them without knowing the side effects of multiple drugs treatment or they keep the medicaments that some doctors recommended a long time ago, including the importance of the memory program and the stimulation therapy program. Since the special education program for the elderly is not a full-time program, the patient's family is also involved in providing support and improving the quality of the patient's life and the family involved.

A longer life brings opportunities not only for older people and their families but also for societies as a whole. Additional years provide the chance to pursue new

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activities such as further education, a new career, or a long-neglected passion. Older people also contribute in many ways to their families and communities. Yet the extent of these opportunities and contributions depends heavily on one factor: health. [1] Therefore, this research will conclude the effectiveness of such special programs to be used in a clinical setting in the practice of GPs from the point of view of evidence-based medicine.

2. MAIN PRINCIPLES AND GENERAL REQUIREMENTS OF ORGANIZATION OF SPECIAL EDUCATION PROGRAMS FOR THE PREVENTION OF COGNITIVE DYSFUNCTION IN ELDERLY PEOPLE

Although some of the variations in older people's health are genetic, most are due to people's physical and social environments – including their homes, neighborhoods, and communities, as well as their characteristics – such as their sex, ethnicity, or socioeconomic status. The environments that people live in as children – or even as developing fetuses – combined with their personal characteristics have long-term effects on how they age. [1]

Physical and social environments can affect health directly or through barriers or incentives that affect opportunities, decisions, and health behavior. Maintaining healthy behaviors throughout life, particularly eating a balanced diet, engaging in regular physical activity, and refraining from tobacco use, all contribute to reducing the risk of non-communicable diseases, improving physical and mental capacity, and delaying care dependency. [1]

Supportive physical and social environments also enable people to do what is important to them, despite losses in capacity. The availability of safe and accessible public buildings, transport, and easy walking places are supportive environments. In developing a public-health response to aging, it is important not just to consider

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individual and environmental approaches that ease the losses associated with older age but also those that may reinforce recovery, adaptation, and psychosocial growth. [1]

Older people are often assumed to be frail or dependent and a burden to society. Public health professionals, and society as a whole, need to address these and other ageist attitudes, which can lead to discrimination, affect the way policies are developed, and the opportunities older people have to experience healthy aging. [1]

Globalization, technological developments (e.g., in transport and communication), urbanization, migration, and changing gender norms are influencing the lives of older people in direct and indirect ways. A public health response must take stock of these current and projected trends and frame policies accordingly. [1]

The problem of preventing factors associated with the risks of cognitive decline and active longevity in the elderly and senile age is becoming increasingly relevant. According to the United Nations, in 2019, approximately 10% of the world's population was over 65; by 2050, this figure will be 20%. [13]

The problem of preventing factors associated with the risks of cognitive decline and hindering active longevity in old age is becoming increasingly important. According to the United Nations, in 2019, about 10% of the total population in the world was over the age of 65, and by 2050 this figure will already be 20%. Mild cognitive decline syndrome is considered a transitional state between normal physiological aging and dementia. The two modern approaches to the prevention of cognitive impairment during aging are presented. Methods for preventing cognitive impairments are proposed to be considered according to the level of organization of mental activity, to which they mainly appeal: based on the semantic level (training) and the level of personal meanings (stimulation programs). The experience of preventing cognitive decline in the elderly within the framework of the program of psychosocial therapy and neurocognitive rehabilitation at the "Memory Clinic"

(Russia) and the "Cognitive Stimulation Therapy" (CST) program (Great Britain) is described. [13]

3. MAIN TECHNOLOGIES OF SPECIAL EDUCATION PROGRAMS FOR ELDERLY PEOPLE WITH COGNITIVE DYSFUNCTION

Considering the syndrome of mild cognitive decline as a transition state between normal physiological aging and dementia. Two modern approaches to the prevention of cognitive impairment in aging are presented. Methods of prevention of cognitive disorders are proposed to be considered following the level of organization of mental activity, to which they mainly appeal: based on the semantic level (training) and the level of personal meanings (stimulation programs). Describing the experience of preventing cognitive decline in the elderly in the framework of the psychosocial rehabilitation program. [13]

The program "Cognitive Stimulation Therapy" (Great Britain) was developed in the "Memory Clinic" (Russia) and the program "Cognitive Stimulation Therapy" Great Britain). [13]

Both are non-drug forms of prevention of cognitive deficits with proven effectiveness. Their use is supervised by the health authorities of the countries where they were developed. "Cognitive stimulating therapy" is included in the National Institute of Health and Quality of Care (NICE) guidelines for people with mild to moderate dementia in the UK [17].

It has been adapted and used in more than 30 countries worldwide. The neurological rehabilitation program "Memory Clinic," developed in Russia, is implemented within the framework of a state task and is supervised by the Moscow City Health Department. In addition to Moscow, the program is being implemented in the Nizhny Novgorod, Samara, Vologda regions, and Khabarovsk Krai [18].

3.1. "MEMORY CLINIC" PROGRAM

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The principles of neurological rehabilitation at the A. R. Luria school have been developed since the Great Patriotic War. During the Great Patriotic War, A. R. Luria and other Russian psychologists worked in the rear neurosurgical hospital in the village of St. Petersburg. Kisegach with patients who have war-related brain injuries and disorders of the VPF. These theoretical principles and practical methods have shown their effectiveness in neuropsychological rehabilitation and restoration of mental functions when working with patients with organic brain lesions.

These principles are also successfully applied in working with late-aged patients with different types of cognitive decline. Let's list these principles:

a-) Primary psychological diagnosis: before starting cognitive training, it is necessary to conduct a comprehensive neuropsychological examination with a syndrome analysis of changes (disorders) in the patient's mental activity;

b-) Reliance on preserved mental functions (preserved forms of verbal and non-verbal activity of the patient): in patients with mild cognitive decline, many components of mental activity (gnosis, kinesthetic praxis, speech components, writing, reading, elementary counting, etc.) remain intact.;

c-) Focus on subject-based activities: cognitive training sessions should include the patient's activities, both verbal and nonverbal;

d-) Taking into account the patient's personality: cognitive training should be conducted taking into account the life experience (anamnesis) and activities of a particular patient, the characteristics of his personality, values, and motivation;

e-) Control: ensuring the timely correction of errors made; monitoring can be independent or external (by a specialist).;

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f-) Reliance on different levels of organization of mental functions: cognitive training should include tasks for enhanced, automated, and arbitrary levels of implementation of various VPFS;

g-) The didactic principle "from simple to complex" should be taken into account and applied to every elderly person;

h-) Complex (systemic) cognitive training: cognitive training should be aimed at all structural components of mental activity;

i-) Regularity of cognitive training: to achieve a significant and lasting effect, it is advisable to conduct classes daily or three to two times a week.

In 2016, the first specialized medical rehabilitation department in Russia, the Memory Clinic, was established in Moscow. This is an outpatient daycare center for the elderly with mild cognitive decline. The goal of the Memory Clinic is to preserve cognitive health, prevent dementia in later life, and improve the quality of life of older people and their families. When developing the neurological rehabilitation program in the "Memory Clinic," psychological principles developed at the school of A. R. Luria were used. The duration of the program is 6 weeks; classes are held 5 times a week in group form (7-9 people per group). The proposed tasks make a meaningful appeal to the semantic level of mental activity organization, suggesting finding the right answer and relying on the motives of achievement and competition. The comprehensive neurological rehabilitation program includes cognitive stimulation of voluntary attention, Opto-spatial activity, praxis, impressive and expressive speech, thinking, memorizing new stimuli in different modalities, the memory of the past, and executive functions. Medical psychologists conduct cognitive training program.

A dynamic neuropsychological study showed the effectiveness of the neurocognitive rehabilitation program for elderly people with mild cognitive decline conducted in the "Memory Clinic" during the COVID-19 pandemic.

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The neurological rehabilitation program in the context of the COVID-19 pandemic (2019-2021) had a special feature - a change in the standard mode of attending classes. Group participants attended face-to-face training sessions once a week. At the same time, the principle of complex stimulation of various parameters of the cognitive sphere of the program participants was preserved. After each lesson, the participant received a methodological guide for the self-continuation of cognitive training. During face-to-face classes, independent work results were checked and discussed, and then a program of cognitive stimulation of various parameters of mental activity was conducted.

Cognitive assessment was carried out using the "Mini-mental State Examination" (MMSE) and "Montreal Assessment Scale" methods. The Montreal Cognitive Assessment (MoCA).

The following figure represents one example of the Montreal Cognitive Assessment (MoCA) test given to patients to check their cognitive skills.

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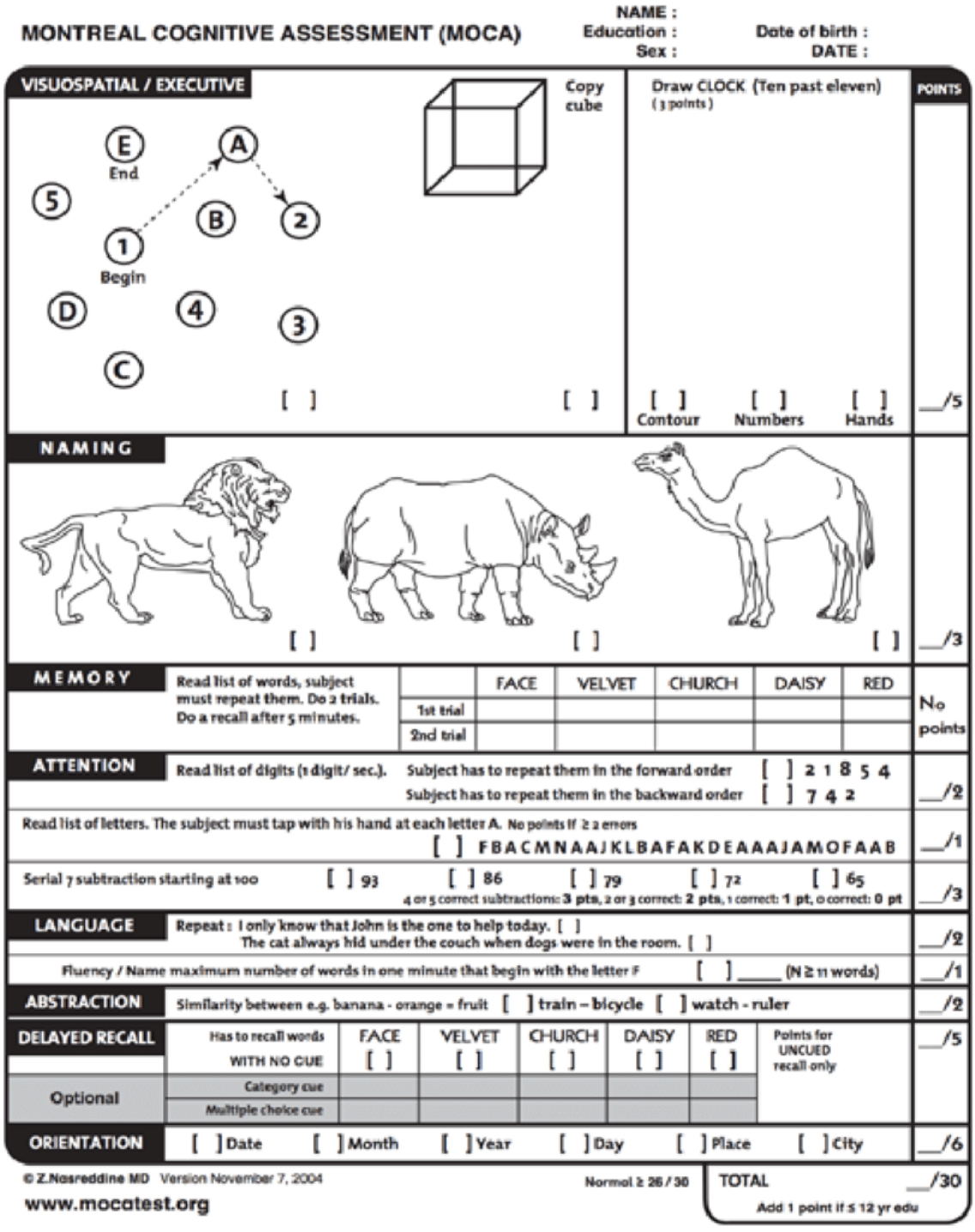
Figure 3 – Montreal Cognitive Assessment (MoCA) example of the test. [-]



A survey of a cohort of elderly people before and after the neurocognitive rehabilitation program showed significant improvement by general information to the

point of both of the methods. The results of the neuropsychological assessment of VPF before and after the neurocognitive rehabilitation program using the "Express Method for Assessing Cognitive Functions" showed a significant improvement in the following parameters: the kinetic organization of praxis (dynamic praxis), the volume of stored visual stimuli, and voluntary regulation of cognitive processes, including verbal thinking.

At the same time, a significant improvement in the cognitive sphere was also found in the overall score of the method. An important result of neurocognitive rehabilitation was a significant improvement in such regulatory parameters of mental activity as neurological dynamics (reducing exhaustion and increasing productivity) and voluntary regulation of activity (improving speech regulation and increasing control throughout activity). Most of the patients highly appreciated the cognitive rehabilitation program, and many of them expressed their desire to continue working in the "Memory Clinic.

3.2. "COGNITIVE STIMULATION THERAPY" PROGRAM

The most popular and widely used version of cognitive stimulation for dementia is the Cognitive Stimulation Therapy (CST) program. This group intervention aims to stimulate and implement cognitive skills in a social environment. The CST, developed under the supervision of Professor E. Spector at University College London, is part of the recommendations of the National Institute of Health and Quality of Care (NICE). In the UK, it is intended for people with mild to moderate dementia. The approach has been adapted and used in 30 countries worldwide. In Russia, the program underwent cultural adaptation in 2020-2021.

The CST program has the greatest impact on such aspects as memory, attention, speech, verbal self-expression, general awareness, self-esteem, and communication

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skills. The program is based on encouraging new ideas and opinions of participants, group discussions, using techniques of comparing the past and present for orientation, training your motor skills with movements and games, support training with multi-sensory stimuli, on flexibility and adaptation of the program material to the capabilities of each of the participants.

A systematic review of psychosocial approaches to treating dementia published as part of the World Alzheimer's Report indicates that cognitive stimulation has the most compelling evidence for cognitive improvements in dementia. Cognitive stimulation in dementia is defined as involving individuals (usually in a group) in a series of activities and discussions to improve overall cognitive and social functioning.

The CT approach focuses on the individual and considers the individual preferences and needs of the therapy participants. CST has been shown to have a positive effect on the parameters of behavioral and psychological symptoms in dementia and improve the quality of life of those who are already undergoing drug therapy for dementia. The CT approach is shown to be cost-effective. Data on the positive effect of CST on neuropsychiatric symptoms and loneliness experience have been obtained, although the program's influence on depressive symptoms is ambiguous; the absence of any effect on anxiety indicators has also been found.

The CST guidelines for dementia management are based on understanding the importance of a personal approach to patients in dementia therapy. They are as follows:

a-) Targeted psychological intervention aimed at overcoming the challenges of everyday life;

b-) Hands-on training that includes using all five senses to stimulate cognitive processes;

c-) Taking into account the emotional sphere of people with dementia during CT, as well as prioritizing improving their cognitive skills;

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d-) Using a mediated rather than direct "learning" format: the most effective way is to summarize important information about yourself and your

inner world;

e-) Mutual cognition (including cognitive and emotional states), in which people with dementia and their caregivers learn more about each other's abilities and vulnerabilities.

These principles are put into practice by: focusing on the continuity and consistency of class topics; calculating the optimal amount of effort spent on completing tasks; using discussion; encouraging new ideas and opinions; appealing to the past and comparing it with the present; using tasks to express opinions rather than verify facts; and exercising support learning through multisensory cues and whiteboards; speech stimulation; a personal approach to each participant (see the personality and its uniqueness, not dementia or related disorders); consideration of the capabilities of all participants (it is unacceptable to allow a person to feel weak or demonstrate their difficulties to a group); support for planning and systematization of acquired skills, etc. social tasks in general; participation, involvement and inclusion of each of the participants (the group belongs to its participants, not the leaders); choosing activities depending on the interest of participants; ensuring a friendly and pleasant atmosphere of classes; organizing conditions for the formation and strengthening of friendly relations.

The program of KST group classes consists of 14 sessions, which are held twice a week. Each lesson lasts 45 minutes. The duration of the program is 7 weeks. A detailed "Making a Difference" guide has been developed for leading groups. The topics of classes and incentive material of the program are based on the realities of everyday life. All classes have a single structure, and each meeting begins with a warm-up — an exercise aimed at ensuring continuity and continuity of what is happening in

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the classroom. Thematic blocks of classes (for example, childhood or food) are focused on updating experience and comparing it with the present. A set of tasks for each class allows the moderator to adapt their level of complexity to the group's cognitive abilities, interests, and gender composition.

Regarding content, tasks do not assume the correct answer but are offered as topics for discussion. Leading groups are not recommended to rely on older participants' motives of achievement and competition. The meeting always ends with summarizing the results and planning for the next lesson.

In addition to the main CST program, a 24-session weekly Long-Term Maintenance CST (MCST) program has also been developed, which provides improved quality of life and reinforces long-term cognitive effects for people undergoing drug therapy for dementia. Despite the availability of the program in the UK and worldwide, many patients with dementia cannot participate in it if they do not meet the criteria for inclusion in group therapy. V. Orgeta and colleagues identified several conditions where an alternative to group CT in the form of individual intervention is needed. First, working in groups may not be available for people with reduced mobility or sensory impairments. Second, some people may not like the group work format. Third, people may not have the opportunity to attend classes regularly, for example, due to a remote place of residence or poor health. This led to the development of an individual cognitive stimulation therapy (iCST) program designed for family use.

In a systematic review, L. Gibbor and co-authors analyzed the results of qualitative studies of various CST formats (including MCST and iCST) from the point of view of leading groups, participants, and their relatives. The key issue of the systematic review was the determination of the following:

a-) acceptability and feasibility; CST,

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b-) Its key characteristics;

c-) It effects. It is shown that if program participants need caregivers and escorts, then the use of iCST and appropriate training of accompanying persons stimulate active participation and involvement of participants in the program.

The limitation of using iCST in comparison with KST or MCST is the resource intensity of the individual format — high time spent on conducting, and the need to prepare for classes. Other limitations of iCST are emotional involvement and lack of professional communication among caregivers and caregivers. When applying KST and MCST, there is an increase in mood after classes, a sense of security, and mutual support in the classroom among the group members. At the same time, iCST provides opportunities for independent work at home and helps to improve mutual understanding between the helping person and the ward.

4. CRITERIA OF EFFECTIVENESS OF SPECIAL EDUCATION PROGRAMS FOR THE PREVENTION OF COGNITIVE DYSFUNCTION IN ELDERLY PEOPLE FROM THE POINT OF VIEW OF EVIDENCE-BASED MEDICINE

An integrated (multi-domain) approach to the prevention of cognitive impairments associated with late-life diseases is considered the most promising [14], where the mandatory component (domain) is cognitive stimulation. Also, proven independent effectiveness of cognitive stimulation programs and cognitive training at the secondary and tertiary prevention stages of cognitive disorders, reducing the quality of life and social activity in the elderly [15; 16].

Psychological approaches to the prevention of cognitive decline (cognitive training, cognitive stimulation) have some advantages over pharmacological treatment: they do not have negative side effects; moreover, they offer participants options for informal or even recreational activities, and they allow single people to create and

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maintain social contacts. It is shown that the experience of cognitive and social It reduces the risk of cognitive decline and the development of dementia during most of life [19; 20]. Secondly, high cognitive activity has a positive effect on neuroplasticity [21], thereby expanding the compensatory capabilities of the brain concerning pathological changes associated with aging [22; 23; 24]. There is a positive effect of cognitive interventions on the state of memory [25], attention, and psychomotor learning [26], as well as on the overall level of cognitive activity in elderly people with mild cognitive decline [27].

Cognitive training assumes a critical attitude of an elderly person to a decrease in the parameters of his cognitive activity and a formed motivation to overcome this deficit, as well as a relative safety of thinking and voluntary regulation of cognitive processes. Cognitive training can be implemented both at the level of individual techniques and methods and in the form of ready-made complex programs.

Cognitive training is usually aimed at strengthening the parameters of individual mental functions or skills. In training programs, there are models of specific (aimed at a separate function) and multicomponent training. Training sessions can be conducted individually or in groups. Standard sets of tasks with an increasing degree of difficulty are usually used. One of these training options is Cognitive Remediation Therapy (CRT) — a repeated performance of a series of standard tasks to train specific cognitive functions [28; 29].

The results of CRT use indicate a moderate improvement in such cognitive indicators as episodic, semantic, and working memory, speech, attention, information processing speed, and visual and spatial abilities. There is also a decrease in anxiety and depression and an increase in daily activity and quality of life [30]. In general, training models of multicomponent training demonstrate the greatest severity and stability of the positive effect compared to single-component training models [31].

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5. CONCLUSION

The article presents clinical and psychological approaches to preventing cognitive decline in late ontogenesis compared to individual techniques and methods. Methods for preventing neurocognitive deficits that appeal to the semantic and semantic levels of organization of mental activity should be combined in one program. Still, they may not have the same specific weight in them. In the case of aging variants, when a decrease in the parameters of attention and amnestic activity comes to the fore, but the criticality to the emerging deficit and the motive to overcome it remains preserved, programs of purposeful programmed training in new memory strategies through intra-intersystem rearrangements of mental functions show high efficiency.

For individuals with reduced parameters of voluntary regulation of cognitive activity and behavior, preference should be given to programs that mainly rely on stimulating methods that contribute to the spontaneous actualization of the compensatory potential of the cognitive sphere.

On the one hand, the program for preventing violations of mental and intellectual activity should be guided by strict principles of organizing classes, which allows for maintaining the effectiveness of the effects and ensures the repeatability of the result.

On the other hand, it should be possible to vary the level of complexity of the material and the parameters of its attractiveness, taking into account the severity of cognitive deficits and the scope of interests of participants in a particular group.

Compliance with the preventive program with such conditions allows for achieving a high therapeutic result and wide distribution, which is successfully confirmed by the experience of using the "Memory Clinic" program in Moscow and the "Cognitive Stimulating Therapy" program in 30 countries around the world.

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In 2021-2022, based on the MSPPU, a translation into Russian and cultural adaptation of the manual for specialists leading group classes "Making a Difference" were carried out [6]. The perspective of the study is to test the program "Cognitive stimulating therapy" in Russia under various conditions and its effectiveness in terms of changes in cognitive indicators and quality of life in people of late age. The testing results will allow us to complete a pilot study of the possibility of using CT in Russia and offer a cognitive training program for wide use in working with cognitive decline in late ontogenesis.

Limitations of the current theoretical study are related to the article presenting only two variants of cognitive intervention and do not consider other approaches to preventing cognitive decline in later life.

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Appendix 1

Abbreviations and acronyms

GP - General Practice

IBGE - Instituto Brasileiro de Geografia e Estatística (Brazilian Institute of Geography and Statistics)

WHO - World Health Organization

MCI - Mild Cognitive Impairment

NIA - National Institute on Aging

CST - Cognitive Stimulation Therapy

NICE - National Institute of Health and Quality of Care

MMSE - Mini-mental State Examination

MoCA - Montreal Cognitive Assessment

iCST - individual Cognitive Stimulation Therapy

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