

Cognitive behavior training: Towards positive gerontological action

El entrenamiento cognitivo: Hacia una intervención gerontológica positiva

Treinamento comportamental cognitivo: Para uma ação gerontológica positiva

Judith Jaskilevich
Mónica Lopes
Marcela Julia Pepa

ABSTRACT: The aging process is accompanied by subtle changes in certain cognitive functions. One of the topics that most concerns people over 60 is losing their memory. In Cognitive behavior training workshops we focus on improving cognitive functioning. Through an organized exercise program aimed at learning strategies for cognitive efficiency we work to improve performance in the elderly's everyday life. From the Positive Psychology perspective, we focus on the positive effects highlighting the elderly's strengths and cognitive resources, which can be strengthened in the course of the training program. Based on the results of the research that we are developing within the framework of University for Integrated Older Adults (UPAMI) workshops, at the University of Buenos Aires Psychology School, most workshop participants report improving areas such as: attention, long-term memory, executive function and learning strategies; reduction of their fears against forgetfulness and expansion of social networks. Cognitive behavior training has shown to have a positive impact on three dimensions of psychic capital: in cognitive abilities to acquire and use forms of knowledge (creativity, curiosity and motivation to learn), in the capacity to establish personal relationships (emotional intelligence) and in the emotional capacity to develop projects overcoming obstacles (self-esteem).

Keywords: Cognitive behavior training; Workshops; Elderly people.

RESUMEN: *El proceso de envejecimiento se acompaña de cambios sutiles en determinados aspectos del funcionamiento cognitivo. Uno de los temas que más preocupación genera en las personas mayores de 60 años es el funcionamiento de su memoria. En los talleres de entrenamiento cognitivo nos proponemos mejorar el funcionamiento cognitivo, a partir de un programa organizado de ejercicios cuyo objetivo es aprender estrategias para la eficiencia cognitiva con la finalidad de mejorar el funcionamiento en su vida cotidiana. Desde la perspectiva de la Psicología Positiva, nos enfocaremos en los efectos positivos destacando las fortalezas y recursos cognitivos que los adultos mayores poseen y van a potenciar en el curso del programa de entrenamiento. En base a los resultados de la investigación que estamos desarrollando en el marco de los talleres de UPAMI, que se dictan en la facultad de psicología UBA, la mayoría de los participantes refieren mejoras en áreas tales como: atención, memoria a largo plazo, función ejecutiva y aprendizajes de estrategias; reducción de sus miedos frente a los olvidos, y ampliación de redes sociales. Se observa que el entrenamiento cognitivo tiene un impacto positivo en tres dimensiones del capital psíquico: en las capacidades cognitivas para adquirir y usar formas de conocimiento (creatividad, curiosidad y motivación para aprender), en las capacidades para establecer vínculos interpersonales (inteligencia emocional) y en las capacidades emocionales para desarrollar proyectos, superando obstáculos (autoestima).*

Palabras clave: *Entrenamiento cognitivo; Taller; Adultos mayores.*

RESUMO: *O processo de envelhecimento é acompanhado por mudanças sutis em certas funções cognitivas. Um dos temas que mais preocupa as pessoas com mais de 60 anos está em perder a memória. Do ponto de vista da Psicologia Positiva, vamos nos concentrar sobre os efeitos positivos, destacando pontos fortes, e recursos cognitivos que podem ser reforçados no decurso do programa de treinamento do idoso. Com base nos resultados da investigação que estamos desenvolvendo no marco das oficinas da UPAMI, na Faculdade de Psicologia, da Universidade de Buenos Aires (UBA), de formação comportamental cognitiva que se concentram em melhorar o funcionamento cognitivo dos mais velhos, através de um programa de exercícios organizados, visa-se a estratégias de aprendizagem para a eficiência cognitiva, trabalhando para melhorar o desempenho na vida cotidiana do idoso. A maioria dos participantes das oficinas relatam ter-lhes melhorado áreas como: atenção, memória de longo prazo, de função e de aprendizagem estratégias executivas; redução de seus medos contra o esquecimento e expansão das redes sociais. A formação comportamental cognitiva*

demonstra ter um impacto positivo nas três dimensões do capital psíquico: em habilidades cognitivas para adquirir e usar formas de conhecimento (criatividade, curiosidade e motivação para aprender), na capacidade de estabelecer relações pessoais (inteligência emocional) e na capacidade emocional para desenvolver projetos de superar obstáculos (auto-estima).

Palavras-chave: *Formação comportamental cognitiva; Workshops; Pessoas idosas.*

Introduction

The memory function produces concern in the adult population; these worries relate to changes in intellectual performance of people aged 50 onwards. There is also a strong social prejudice about cognitive impairment as an unavoidable fate of aging, so the fear of cognitive failures increases, being interpreted by other people as the beginning of a pathologic stage.

In recent years, the Cognitive Training workshop has had a wide social acceptance. This workshop offers strategies for older people to maximize their cognition. The purpose of this paper is to report the benefits in cognitive training that these workshops provide to older adults. The workshop has been conducted by the School of Psychology at the University of Buenos Aires (UBA), as part of the UPAMI program (University for Integrated Older Adults).

First, we will develop the theoretical framework from which we based our gerontological practice. Then we will describe the workshop focusing on people's characteristics, the topics dealt, group dynamics, and especially the cognitive assessment instrument designed for this university environment.

Finally, from the Positive Psychology perspective, we analyze the results of this assessment tool in order to determine cognitive functioning and the impact that these workshops have in the participants' subjective well-being.

Rationale

The term Active Ageing adopted in the 90s, by the World Health Organization (WHO) aims at recognizing factors that, along with health care, affect the process of ageing in individuals and populations. According to WHO, active aging "is the process by which the opportunities for physical, social and mental well-being are optimized throughout life, with the aim of extending the healthy life expectancy, productivity and quality of life in old age" (Giro Miranda, 2006: 27).

The term "active" refers to a continuous and sustained participation in social, economic, cultural, spiritual and civic affairs. Therefore, active ageing is not possible without cognitive indemnity. Indeed, not only is aging considered from the health care point of view, but also from the social, economic and cultural factors that affect it; for this reason it is important to highlight the multidimensional nature of the aging process.

We consider empowerment as a key concept in the increase of well-being and quality of life in old age. The word "*empowerment*" (...) derives from the verb *to empower* which means: to allow, enable, authorize (Smith, Davies, & Hall, 1988), while empowerment appears as a neologism used for certain social groups seeking to assume power and control over their decisions. Therefore, the term has the meaning of strengthening, empowerment or conferral of power (...).

Sykes (1995) highlights the positive connotation of the term, that of having a sense of autonomy, feeling of control and satisfaction that holds the feeling of being empowered" (Iacub, & Arias, 2010, p. 27).

We will refer to Martin Seligman's Positive psychology, founded by him in 1998, to analyze what strengths we try to put into practice in people who would like to improve their intellectual performance.

This discipline is a theoretical and research branch from psychology that aims especially at investigating the psychological and subjective well-being of a person such as his or her strengths and virtues (Peterson, & Seligman, 2004).

Positive Psychology is defined as "the set of topics for study and research findings, with a common link, focused on positive aspects of the human being" (Hervas, 2009, p. 37).

We will also take into account the concept of Psychic Capital, as the set of potentialities, cognitive skills, emotional skills, relational skills, civic skills and value system that can generate personal strengths and enables a person to learn how to protect him/herself and how to survive (Casullo, 2006). In addition, it will also enable us to understand in what ways the individual reaches psychological well-being in old age.

Moreover, stemming from cognitive neuroscience, a scientific field has been established where two disciplines converge; on the one hand cognitive psychology, which studies the higher mental functions, and on the other hand neuroscience, which studies the nervous system that sustains those functions. Also, cognitive neuroscience addresses the study of brain function from a multidisciplinary perspective.

Gazzaniga (1984) defines the objective of cognitive neuroscience as the study of the biological basis of human cognition.

Eric Kandel showed that changes in synaptic function are central for learning and memory, and discovered that the development of long-term memory requires a change in protein synthesis, which can also cause changes in form and in the synapse function. "In the early 1980s, cognitive neuroscience incorporated the techniques of molecular biology that gave rise to a new science of the mind - the molecular biology of cognition - which has allowed us to study at a molecular level how we think, feel, learn and remember." (Kandel, 2007, p. 26).

Throughout a lifetime, all kinds of experiences launch molecular processes that remodel the synaptic connections (Hyman, 2000, p. 33); these processes are described as synaptic plasticity, which literally changes the physical structure of the brain. Indeed, not only new synapses may be created but also old synapses may be removed, strengthened or weakened. The result is that the information processed in the brain circuit will change to incorporate the new experience; this biological process takes place when the elderly are motivated with cognitive challenges to promote their brain neuroplasticity.

Through what are known as "memory workshops," we propose doing psycho-social work on cognition coaching, understood in a broad sense; that is, as "those processes involved in the acquisition, retention and /or manipulation of information, i.e. its processing (higher cortical functions) and the adaptive behavior upon which it depends. The most important areas of cognition include attention, memory, language, perception, executive function and praxis" (Leiguarda, & Manes, 2005, p. 162).

Jordi Casanova Peña (1999) believes that the aim of a cognitive intervention - through its methods and strategies - is to improve function and cognitive performance in older adults, increasing their self-esteem and quality of life.

Our gerontological interventions aim at promoting the experience of new situations, at exercising metamemory, plasticity and flexibility to be in a heterogeneous group. It also focuses on improving self-regulation and inhibitory function in group exercises and enhancing cognitive resources and strategies.

As health professionals, we expect our workshops to generate processes of "active aging". Consequently, our objective is to "empower" seniors through technical interventions by providing strategies, giving external and domestic support, understanding their own cognitive functioning, discovering and enhancing cognitive resources. In short, the idea is to provide tools for people to keep their independence and their lifestyle according to their abilities and desires. The learning achieved in the workshop's framework should promote self-management in people's everyday life in order to "age at home competently."

Hereafter, we will take as reference the previously developed theoretical approaches, focusing our analysis on the surveys, which were administered to the participants, and on the subjective benefits of the Positive Psychology approach.

Cognitive Behavior Training Workshops

Cognitive Behavior Training Workshops are part of the agreement between the University of Buenos Aires (UBA) and the National Institute of Social Services for Pensioners and they are part of the UPAMI programs (Integrated University for Seniors). These workshops are held at the School of Psychology at UBA since 2010, and they are a part of the University Extension, Culture and Well-being Department programs. They are developed through the course Psychology of Aging and Old Age, chaired by Dr. Ricardo Iacub, where trained professionals in the psychology field coordinate, plan and design strategies to conduct these psychosocial workshops.

We propose a holistic approach consistent with our training in Psycho-gerontology, Community Gerontology and our specific training in Psychology. Workshops are aimed at people who have subjective memory demands and a fear of losing their current and historical intellectual functioning.

Also, we welcome people who perceive their output is not according to their cognitive performance, due either to life crises, depression, retirement or lack of opportunity to activate their preserved abilities. However, they are not intended for people suffering from cognitive impairment who may find other more appropriate environments where they can come across special stimuli and if necessary competent personnel for further evaluation. This is a sixteen-meeting workshop developed in four months. The meetings are based on a *structured intervention*: activities organized and chosen specifically with certain objectives - including creating an environment for activities to prevent brain aging - and demystify prejudices about memory lapses in old age.

Implementation of the workshop

In this school year, there have been three memory-training workshops; each attended by 25 people - mostly women - their ages ranging from 59 to 84 years old. 97% of the seniors have secondary and/or higher education, 34% are working adults and 23% are retired.

The workshop's dynamics is group work that respects the singularities of a heterogeneous population. Individual or subgroup tasks, do not merely provide information on the functioning of the memory and its effect on everyday life, but give the space for attendees to assess themselves from their own strengths and potentiality.

Seniors share their experiences and understand their forgetfulness (main concern of most of the participants), through interactive activities and exercises. Several teaching resources are used such as music, blackboard, posters, forms, photographs, and objects.

These activities are designed to provide insight on how memory works, always promoting self-knowledge and metamemory activities and also providing opportunities to maintain and enhance an active memory. This knowledge lowers the levels of anxiety and activates the implementation of strategies and techniques acquired to seize security, self-control and competency. The end-goal of the workshop is for the elderly to learn training strategies and apply what was learned in his/her everyday life.

In the first quarter of 2015, at the beginning and end of the workshop, participants were given a self-assessment tool in order to find out about their cognitive functioning, focused on attention, long-term memory, executive functions and strategies used.

We have also inquired about acquired strategies, expectations as regards the workshop and situations they had been through last year. We currently have 86 initial respondents: 56 women (aged 59-84) and 12 men (66 to 84 years old). Finally, we carried out the closing surveys: 30 women (aged 59-82 years old) and 5 men (66-79 years old). Our goals are to apply the knowledge of the psychological and gerontological research, to promote the well-being of older people.

Promoting positive aspects: discovering strengths and cognitive behavior resources

On the premise that neuropsychological capabilities, like motor ones, respond positively to constant exercise and repeated practice; cognitive behavioral training is to present the individual a series of tasks and /or activities through which the person exercises, trains and boosts different cognitive abilities. These activities include the presentation of various stimuli and different tasks of increasing complexity. In short, they are activities that are aimed at preserving the autonomy of the subject.

According to data collected from our final survey, using the Likert scale, 74.29% of the participants reported much improvement in their attention; 42.85% reported much improvement in long-term memory; 74.28% reported much improvement in executive functions and 74.29% have often learned strategies for their everyday life.

Our purpose is to improve seniors' everyday life organization skills and to learn how to solve their problems. Our main goal to achieve greater autonomy is to improve their planning skills as well as to remember faces or names and to learn how to work with prospective memory and everyday forgetfulness.

From the cognitive behavior training, we aim to slow down the progression of cognitive decline to restore obsolete cognitive skills. We start from the preserved intellectual functions in order to improve the functional status of the person and his/her ability to act, developing the skills that enable him/her to live as independently as possible and promote broad intellectual challenges.

In terms of achievements, a 74.29% of the participants have reduced the fear of losing their current functioning, 65% say they have understood and improved their current functioning, and 75% have generated social ties during the workshop.

With regard to fulfilled expectations, 82.85% have exercised their memory, 77.14% have learned techniques to improve their intellectual performance, 71.42% have been able to work in groups and 37.14% fulfilled their wish of attending a university course.

In the situations assessments that the elderly have gone through over the last year, 28.57% has had some illness, 5.71% has retired, 4.46% has lost close affective bonds (parent or sibling), another 5.71% reported travelling for family reasons, living together with a disabled family member, going through a divorce, having migration problems, having an illness or suffering a family member's illness.

Some participants tell us:

"I came to the workshop worried about my mother's illness and this group has helped me a lot." (Employee, organizes Milongas dances, tango retired teacher, 66 years old)

"It helped me to organize my life," "I suffer from hypothyroidism that causes me great anxiety and does not allow me to concentrate." (Retired, does charity work, 74 years)

"... to understand and keep my natural function...", " ...to improve my mental performance, then exercise my memory for chemical reasons...", "... thyroid problems and breast cyst." (Retired UBA teacher, Forensics, 75)

Active participation in a group enables seniors to reduce levels of anxiety generated by memory lapses and gives them the ability to expand social networks. The elderly recognize strengths and virtues in their peers, generating an understanding that increases their self-esteem and promotes a more efficient cognitive performance.

From Positive Psychology we understand that our interventions promote the maintenance of autonomy and self-management in the elderly's everyday life, putting together strategies for them to continue living in their own homes as long as possible. That is why we focus on cognitive strengths to improve their daily performance.

Taking into account the psychic capital which consists of five categories of personal factors that relate to skills, abilities, attitudes and values, we believe that cognitive training developed in the layout of a memory training workshop, has a positive effect on three dimensions of the psychic capital:

- 1- In the cognitive abilities to acquire and use knowledge;
- 2- In the abilities to establish personal relationships;
- 3- In the emotional abilities to develop projects overcoming obstacles.

Regarding the former ones, we believe that cognitive behavior intervention affects "creativity" defined as "the ability to generate new, surprising and unusual behavior which in turn facilitates adaptation to the context and the historical moment we live" (Casullo, 2006, p. 62).

It also has an influence over "curiosity" that is "a supposed interest in what is new and different, an unusual openness to experience" (Casullo, 2006, p. 62) and also in "motivation to learn" that is related "to the ability to experience positive and rewarding feelings in the process of acquiring new learning." (Casullo, 2006, p. 62).

The possibility of seniors attending a university environment makes them face the reality of having to solve new situations: registering by mail, finding a classrooms list, meeting new people, working in groups, being part of recreational activities at the workshop etc. These experiences mean, for many of them, recovering learning strategies or incorporating new learning skills, which they find gratifying.

Regarding the second dimension we mentioned above - the ability to establish personal relationships- we believe that there is an effect on the development of "emotional intelligence" defined as "the ability to perceive, assess, express, understand and self-regulate our emotions adaptively so that it facilitates cognitive processes and personal growth. (Salovey, and Mayer, 1990)." (Casullo, 2006: 65).

In recent years, we have expanded our understanding of cognition. Today we know that to stimulate higher intellectual functions is insufficient, we must work on communication and social cognition to improve social interactions with peers and family, promoting integration of older persons in their community, in order to avoid social isolation. 75% of our respondent participants have generated social bonds, and tell us that after leaving the workshop they still share coffee talks, and/or theater, cinema or museums outings.

Finally, with regard to the emotional skills to develop projects overcoming obstacles, we believe that cognitive interventions have an effect on participants' self-esteem, if we consider it as "the evaluative dimension of self-concept (Baumeister, 1998)" (Casullo, 2006, p. 63).

Learning about one's own cognitive functioning, the decrease of anxiety through the understanding and control of everyday lapses, together with the learning of strategies to improve cognitive performance, help to improve the "self-concept" or "positive self-image" of the elderly.

Conclusions

In this article, we have discussed the positive aspects of the "Cognitive Training Workshop" activities developed by the University for Integrated Older Adults (UPAMI) in the School of Psychology at the UBA.

We started our work considering how the neuropsychological abilities, the same as the motor ones, respond positively to constant exercise and repeated practice.

We have noticed that through our psychoeducational workshop, seniors have experienced new learning situations, have practiced metamemory, have exercised self-regulation, have acquired and, consequently, boosted resources and cognitive strengths. Exposure to these new challenges allows for "brain neuroplasticity".

We also take this gerontological practice from a psychological perspective as a facilitator of older people's psychological well-being.

Based on the results of the final surveys, participants referred to improvements in attention, long-term memory, executive function and learning strategies. Seniors also mentioned that their fear for deterioration had diminished.

Similarly, they have assessed their participation in groups positively and they have expanded their social network. Socializing has improved their quality of life.

We believe that cognitive training developed in a memory-training-workshop format, had a positive effect on three dimensions of psychic capital: in cognitive capacities to acquire and use knowledge (creativity, curiosity and motivation to learn), in the capacities to establish personal relationships (emotional intelligence) and emotional capacities to develop projects and overcome obstacles (self-esteem).

Our task as psychogerontologists is to continue and spread these group services, reaffirming that these interventions have a positive effect on the subjective well-being of older adults.

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Judith Jaskilevich - Psicóloga. Docente, Investigadora. Faculdade de Psicologia, Universidad de Buenos Aires (UBA), área: Psicogerontología.
E-mail: jjpsiger@gmail.com

Mónica Lopes - Psicóloga. Docente, Investigadora. Faculdade de Psicologia, Universidad de Buenos Aires (UBA), área: Psicogerontología.

E-mail: jjpsiger@gmail.com

Marcela Julia Pepa - Psicóloga. Docente, Investigadora. Faculdade de Psicologia, Universidad de Buenos Aires (UBA), área: Psicogerontología.

E-mail: jjpsiger@gmail.com