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Orthomolecular Neuropsychology

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Short Communication

Neuropsychology has been defined by the American Psychological Association [1] as the branch of science that studies the physiological processes of the nervous system and relates them to behavior and cognition, in terms both of their normal function and of the dysfunctional processes associated with brain damage. This profession has demonstrated its pertinence particularly in research and clinical areas. In clinical neuropsychology the assessment process which relies in psychometrically developed instruments offers invaluable information about the patient's neurocognitive status.

On the other hand, in face of the high incidence and prevalence of neurocognitive illnesses novel treatments have been studied and developed. Nonetheless, the treatment and management of memory loss is highly challenging [2] due to the fact that although approved therapies improve the symptoms, they cannot modify the course of illness nor cure it [3]. While it is evident that the brain is the center of the nervous system that controls processes such as memory, thought, reason, judgment, consciousness and emotion, supporting its health is indispensable to safeguard effective regulation and coordination of body functions [4,5]. This notion leads to a direction of nourishing the body as a mean to promote health which is consistent with an orthomolecular perspective.

In 1968 Nobel Prize winner Dr. Linus Pauling explained Orthomolecular medicine as the restoration and maintenance of health through the administration of adequate amounts of substances that are normally present in the body [6]. This perspective focuses on giving the body the nutrients it needs to metabolize and produce the energy required for proper functionality. Dietary supplements, including vitamins, minerals, essential fatty acids, amino acids, flavonoids, herbs, and accessory food factors, are among the most valuable and safe substances for prevention and treatment of serious chronic and acute diseases associated with mortality, as well as everyday health problems that cause discomfort and disability. It is important to take adequate doses for their full benefits [6].

Developing evidence in nutritional cognitive neuroscience shows that optimal nutrition may help preserve cognitive function, slow the progression of aging and decrease the incidence of debilitating diseases in healthy aging populations [7]. Increased consumption of fruit and vegetables has been shown to be associated with a reduced risk of cognitive impairment and dementia in many epidemiological studies [8]. In addition, due to their anti-oxidative and anti-inflammatory effects, phytochemical like curcumin and nutrients as polyunsaturated fatty acids (PUFAs) have been widely applied to potential therapeutic purposes for many neurodegenerative diseases [9]. Finally, B Complex and Vitamin D have been associated with neurocognitive functioning, mood and inflammation [10,11]. Therefore, nutritional factors should be taken into account in neuropsychological processes, assessments and interventions to identify the nutrients related to proper functioning.

Conclusion

Orthomolecular Neuropsychology can be conceptualized as the comprehensive assessment of neuropsychological status from a sound psychometric, anatomical, physiological and nutritional standpoint. It encompasses an integrative multi-professional treatment to not only include pharmacology to address symptoms, compensatory skills development and different therapies to promote rehabilitation, but also to nourish the body with the necessary nutrients to cope with the nutritional deficiencies

caused by the individual's lifestyle, conditions/diagnoses and polypharmacy (drug-induced nutritional deficiencies).

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