

## The Dusks in the Dawn of Neuropsychology in India

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### EDITORIAL

Neuropsychology is a specialized sub-branch of clinical psychology that is aimed at localizing lesions in the brain and also screen those with neuro-cognitive disorders. While the field is quite developed in the West, in India, the field is beginning to emerge. There are several challenges like shortage of manpower, lack of adequate training facilities and normative data. The field has the proven potential to aid the screening and diagnosis of several mental and neurological disorders and hence deserves better attention.

Neuro-cognitive psychology is growing branch of an already mature field of General Psychology, called as *Cognitive Psychology*. The main design and the structure of this field aims to understand the role/s of brain, its anatomy and its functioning responsible for various psychological, physiological and cognitive processes in humans<sup>1</sup>. Neuro-cognitive psychology particularly focuses on uncovering the neural mechanisms underlying cognitive processes, and their clinical applications<sup>2</sup>. It is based on the principle that our behavior is generated by a series of stimuli and responses to these by thought processes.

The historical roots of this budding field had immersed itself in this world in second half of 19<sup>th</sup> century. In 1860s Paul Broca described a patient with aphasia, a language disorder and found that the left frontal lobe was damaged in the case and soon after he examined more patients with aphasia and found that only left lobe damaged in all the cases. It was concluded that the left frontal lobe was responsible for producing speech, today known as Broca's area. Therefore the basic foundations of the field were set in pertaining to solve language issues<sup>3</sup>.

Cognitive psychology studies a number of mental processes which most importantly include memory, perceptions, thinking and learning. They basically are more research oriented and generally do not focus on diagnosis and treatment. Today neuroimaging techniques like fMRI are available to everyone working in the field of cognitive neurosciences.

### Indian Situation

There are few institutions providing courses for higher education in neuro-psychology in India. Centre of Behavioural and cognitive sciences, University of Allahabad offers Msc cognitive science. All India institute of mental health and sciences New Delhi offers orientation training in neuro psychological evaluation while center for neuroscience, Indian Institute of Science, Bangluru has cognitive neurosciences research academic and research facilities. Fellowships in neurological rehabilitation (FNR), which has neuropsychology as a component is being offered by private universities in National Capital Region, and Bangluru Karnatka.

Neuropsychology aims to give answers to various psychological disorders whose origin and malfunctioning lies right in the parts of brain or the neurological systems of the body. Many if not the most of the psychiatric disorders are associated with atleast some degree of cognitive involvement/impairment. Head injury, attention deficit hyperkinetic disorders, personality disorders, obsessive compulsive disorder, schizophrenia, bipolar disorder are common psychiatric disorders whose basic occurrence is rooted in malfunctioning of some or the other part of the brain giving a psycho-physiological approach to the same which neuropsychology tries to answer comprehensively<sup>4</sup>.

While many countries like Germany, France, Australia, Ireland, Canada, UK, Russia, Netherlands are offering Msc/PhD degrees in neuropsychology; the field is in its infancy in India. Though, the field started about half a century ago in India, but still the development of indigenous tools to study India's population neuropsychology parameters is slow<sup>5</sup>. Growth in neuro-psychology in India is necessary to aid proper diagnosis and treatment of those with head injuries, neuro-degenerative diseases like dementia etc.

Many countries/populations have their own neuropsychological parameters databases and India is yet to have the same. There is no book of neuropsychology in India to help the students learn the subject. Large scale studies of all age groups with neuropsychological parameters in Indian context are therefore needed. Since there's only one nodal training center in India, this adds on to the existing problem of training.

There are currently, about 850 training clinical psychologists<sup>7</sup> in India while India needs >3200, making the deficit as more than 2/3. The availability of trained neuropsychologists is even more strained. Neuropsychology being a very new field in the arena of psychology demands research. Budding psychologist should understand the fact that good qualitative/quantities research in this field would be needed to ensure the greater external validity of this important field. Localization and screening for neurocognitive disorders, their diagnosis and rehabilitation can be aided cost effectively using neuropsychological tools once they become developed. For a resource crunch country like India with a large population base, it can be useful<sup>6</sup>.

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