"COGNITIVE FUNCTIONS IN DOWN SYNDROME"

"Comparative Study Between Children with and without Early intervention Programs"

THESIS

Submitted in partial fulfillment of the requirements of the M.Sc. Degree in Pediatrics, Faculty of Medicine, Ain-Shams University.

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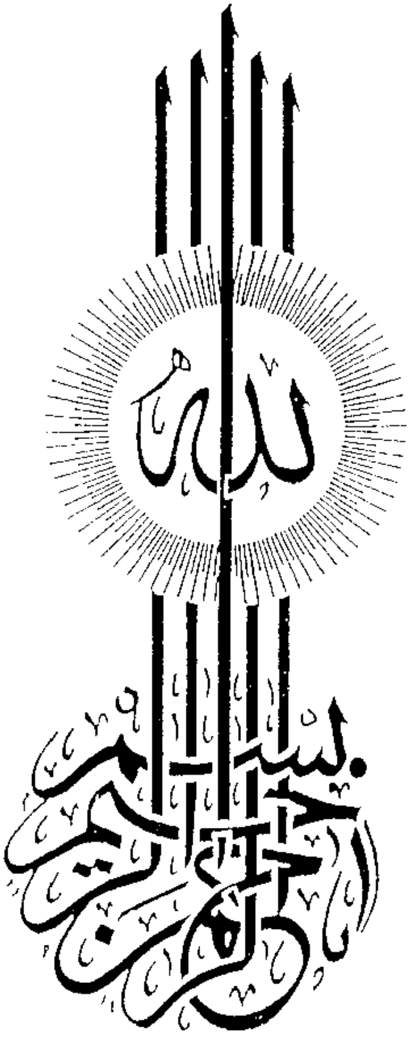
بسم الله الرحمن الرحيم

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اقرأ باسم ربك الذى خلق ، خلق الإنسان من
علق ، اقرأ وربك الأكرم ، الذى علم بالقلم ،
علم الإنسان ما لم يعلم .

صدق الله العظيم

سورة العلق : من ١ – ٥

DEDICATION

To my ***PARENTS***, who raised me and to whom I am greatly indebted for their help and support throughout my life.

To my Husband ***KHALED***, who gave me a great sense of help and assistance throughout the course of this work.

To my Lovely Daughter ***YOMNA***, the best flower in my life and to my expected child.

To my ***SISTER AND MY BROTHERS***, for their unfailing support and help.

LIST OF TABLES

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[redacted]

LIST OF ABBREVIATIONS

Ach	Acetyl Choline.
AD	Alzheimer's Disease.
CA	Chronological Age.
CI	Crowding Index.
DS	Down Syndrome.
EEG	Electroencephalogram.
EIP	Early Intervention Program.
I.Q.	Intelligence Quotient.
M.A.	Mental Age.
M.R.	Mental Retardation.
MSAFP	Maternal Serum Alphafetoprotein.
q	Long Arm.
SOD	Superoxide Dismutase Enzyme.
T	Translocation.

INTRODUCTION

Cognition is all the mental activity entailed in transforming physical stimuli to a representation of reality that will guide behaviour. Cognition is the ability to learn, to perceive and process environmental information. It includes the intellectual ability, scholastic performance, and attainments, and other more specific cognitive functions as memory and visuoperceptual functions ***(Nasr, 1993)***.

The concept of cognition was handled by different authors, one of the earliest of all was Jean Piaget, who viewed cognition as a dynamic interaction between the internal organization of the organism and the environment which aims at adaptation of its action towards the objects in the environment ***(Crittenden, 1995)***.

Cognitive structures are hypothetical depictions of knowledge and thinking, which are described in terms of abstract models of mind. The exact forms of those descriptions can vary and include the logico-algebraic system of Jean Piaget (1970 a), the flow diagrams and production system proposed by information processing psychologists and the semantic networks, schemas, scripts and frames of others ***(Klahr, 1989)***.

Cognitive functions are found to be lagging behind in children with Down syndrome (D.S.), e.g., many children with Down syndrome display asynchrony in development with the acquisition of language proceeding at slower pace than the acquisition of other cognitive skills. Recent research suggests that, the expressive language delays may be associated with an earlier disturbance in the development of non-verbal requesting skills ***(Mundy et al., 1988)***.

Unrealistic parental expectations often result from lack of understanding about how a child's logic differs from that of an adult. Behavioral problems and mental delay of children with D.S. can be improved by helping parents to see an episode of problem behaviour from the child's perspective, also the mental ability of children can be improved by early intervention programs ***(Graziano, 1992)***.

AIM OF THE WORK