Clinical Characteristics and Cognitive Functions of Late Life Psychosis in a Sample of Egyptian Geriatric Population

A Thesis Submitted for the Partial Fulfillment of MD Degree in Geriatric Medicine

Presented By
Dr. Mahmoud Mohamed Fathy Tamara

Supervised By

Prof. Mohamed Hassan EL Banouby

Professor of Neurology and Geriatric Medicine Faculty of Medicine Ain Shams University

Prof. Afaf Hamed Khalil

Professor of Psychiatry
Faculty of Medicine Ain Shams University

Dr. Hisham Adel Sadek

Assistant Professor of Psychiatry Faculty of Medicine Ain Shams University

Ain Shams University Faculty of Medicine 2009

الخصائص السريرية والوظائف المعرفية لمرضى ذهان الشيخوخة في عينة من المسنين المصريين

رسالة مقدمة توطئة للحصول على الدكتوراه في طب المسنين

دكتور / محمود محمد فتحى طماره

تحت إشراف

الأستاذ الدكتور / محمد حسن البانوبي أستاذ الأمراض العصبية وأمرض المسنين كلية الطب – جامعة عين شمس

الأستاذة الدكتور / عفاف حامد خليل أستاذ الطب النفسى كلية الطب – جامعة عين شمس

الدكتور / هشام عادل صادق أستاذ مساعد الطب النفسى كلية الطب – جامعة عين شمس

> كلية الطب جامعة عين شمس 2009

ACKNOWLEDGEMENT

I am deeply grateful for the support and constructive guidance of many people, whose valuable assistance made this study possible.

First and foremost, I would like to express my thanks and deepest appreciation to **Professor**. **Mohamed El Banouby**, Professor of Neurology and Geriatric Medicine Faculty of Medicine, Ain Shams University, for his tremendous help and keen support. Without his help this work would never been completed. I am deeply indebted to him for his scrutiny, his valuable comments and suggestion and his deep interest in the subject. He is always been a real father figure.

I am eternally grateful to **Professor**. **Afaf Hamed Khalil**, Professor and Head of Institute Psychiatry for encouraging me to develop this subject, and for all the inspiring guidance, valuable supervision and help she has given me since I started this research.

I wish to express my greatest gratitude and ultimate thank to **Dr. Hisham Sadek** Assistant Professor of Psychiatry, Ain Sham University, who has patiently gone through a series of revisions, aiming for the highest degree of lucidity. I am really indebted to **Dr. Mohamed EL Okl** Lecturer in Geriatric Medicine, Faculty of Medicine, Ain Shams University, for his support, enthusiasm, valuable suggestions, meticulous revision and creative ideas.

I sincerely appreciate all the encouragement and support given by Dr. Hanan Hussien, Dr. Ahmed EL Shafei and Dr. Abeer Mahmoud Assistant Professors of Psychiatry, Ain Sham University. They generously provided me with continuous assistance and advice. I am really obliged to them because they have willingly dispersed much of their valuable time trying to clarify the gloomy aspects facing the work.

I am deeply indebted to **Dr. Amed EL Missiry** Lecturer in Psychiatry, Ain Shams University for his valuable guidance and support through my period of study. He has provided me with plenty of references which were very useful to me.

I wish to express gratitude to my outstanding, **Professors** and Colleagues who have provided me with care and support.

I would also like to express my sincere appreciation to **Dr. Olfat Kahla** for her marked and undeniable efforts in the psychometric assessment of my patients.

No words ever spoken can express my gratefulness and sincere appreciation to **Dr. Mohamed Hassan**, the Managing

Director of (Top Information Technology Solution TITS). He had generously offered great help and support in the statistical part of this work.

Acknowledgement is also made for all the **Staff at**Computer Department in Institute of Psychiatry Ain Sham

University, namely Mr. Amr Hassanen and Mr. Tamer

Mohamed who spare much of their time in the processing of this thesis.

I would like also thank all the patients and their families who were willingly participate in this work.

Finally, I'm grateful to the continuous support of my parents, brothers and sister.

Table of Contents

	Page	
Introduction		
Aim of the Work		
Review of the literature		
Normal Aging	10	
 Mental Disorders in Late Life 	30	
 Late Onset Psychotic Disorders 	41	
Late Onset Schizophrenia	71	
 Treatment of Late Onset Psychosis 	91	
Subjects and Methods		
Results		
Discussion		
Conclusion		
Recommendation		
Summary		
References		
Arabic Summary		

List of Abbreviations

ADL : Alzheimer's disease
ADL : Activities of daily living

CAMCOG : Cambridge cognitive examination scale

CAMDEX : Cambridge Mental disorders of the elderly examination

CBF : Cerebral blood flow
CSF : Cerebrospinal fluid
CT : Computed tomography

FMRI : Functional magnetic resonance imaging

GHQ : General Health Questionnaire

IADL : Instrumental assessment of daily living

LBD : Lewy body disease

MRI : Magnetic resonance imaging

NMDA : N-methyl-D-aspartate

PANSS : Positive and Negative Syndrome Scale

PET : Positron emission tomography
PTBI : Post traumatic brain injury
PTSD : Posttraumatic stress disorder

SPECT : Single photon emission computed tomography

VaD : Vascular dementia
VBR : Ventricle-to-brain ratio

VLOSLP : Very late-onset schizophrenia-like psychosis

WAIS : Wechsler adult Intelligence scale

LIST OF TABLES

			Page
Table (A1)	:	The aged population in Egypt	6
Table (A2)	:	Aging effects on cognitive performance	14
Table (A3)	:	Clinical presentations of memory loss in old age	15
Table (A4)	:	Cognition in normal aging	16
Table (A5)	:	Primary aging: changes in anatomy and function of major organ systems	26
Table (A6)	:	Mental disorders among older adults in USA	31
Table (A7)	:	Show the prevalence of psychotic disorder in aged population	42
Table (A8)	:	Psychotic disorders in the elderly	44
Table (A9)	:	Differentiating chronic schizophrenia from Alzheimer's disease with psychotic symptoms	47
Table (A10)	:	Medical and surgical causes of psychotic symptoms in the elderly	60
Table (A11)	:	Medication- and substance -induced psychotic symptoms in the elderly	63
Table (A12)	:	Clinical tips in differential diagnosis of psychosis in the elderly	66
Table (A13)	:	Atypical antipsychotic side effects and dosage ranges in elderly patients	97
Table (A14)	:	Antipsychotic drugs, dose equivalences, and side-effect profiles	97
Table (A15)	:	Obstacles to clinician-patient collaboration in treatment and rehabilitation	105
Table (1)	:	Demographic data: Comparison between patients with late onset schizophrenia and non schizophrenia late onset psychoses	131
Table (2)	:	Education and Occupation: A comparison between patients with late onset schizophrenia and non schizophrenia late onset psychoses	132
Table (3)	:	Social class: A comparison between patients with late onset schizophrenia and non schizophrenia late onset psychoses	132

Table (4)	:	Age of onset, duration of illness: A comparison between	133
		patients with late onset schizophrenia and non	
		schizophrenia late onset psychoses	
Table (5)	:	Family history of psychiatric illness: A comparison	133
		between patients with late onset schizophrenia and non	
T 11 (1)		schizophrenia late onset psychoses	404
Table (6)	:	Medical history: A comparison between patients with late	134
		onset schizophrenia and non schizophrenia late onset psychoses	
Table (7)	:	Functional assessment of daily living: A comparison	135
Table (7)	•	between patients with late onset schizophrenia and non	133
		schizophrenia late onset psychoses	
Table (8)	:	Using (CAMCOG): A comparison between patients with	136
. 45.5 (6)	•	late onset schizophrenia and non schizophrenia late onset	.00
		psychoses	
Table (9)	:	Cognitive functions using Wechsler test (WAIS): A	138
		comparison between patients with late onset schizophrenia	
		and non schizophrenia late onset psychoses	
Table (10a)	:	Assessment of psychotic symptoms by PANSS: A	139
		comparison between patients with late onset schizophrenia	
		and non schizophrenia late onset psychoses	
Table (10b)	:	PANSS	140
Table (11)	:	Diagnostic categories: Late onset schizophrenia	142
Table (12)	:	Diagnostic categories: Late onset other psychoses	142
Table (13)	:	Demographic data: A comparison between late onset	145
		schizophrenia and old healthy controls	
Table (14)	:	Education and Occupation: A comparison between late	146
		onset schizophrenia and old healthy controls	
Table (15)	:	Social class: A comparison between late onset	146
		schizophrenia and old healthy controls	
Table (16)	:	Family history of psychiatric disorders	147
Table (17)	:	Medical history	148
Table (18)	:	A comparison between late onset schizophrenia and old	149
T 11 (10)		healthy controls	4=0
Table (19)	:	Cognitive assessment: A comparison between late onset	150
T-1-1- (00)		schizophrenia and old healthy controls using (CAMCOG)	454
Table (20)	:	A comparison between late onset schizophrenia and old	151
		healthy controls	

Table (21)	:	Demographic data: A comparison between patients with late onset and early onset schizophrenia	154
Table (22)	:	Education and Occupation: A comparison between patients with late onset and early onset schizophrenia	155
Table (23)	:	Social class: A comparison between patients with late onset and early onset schizophrenia	156
Table (24)	:	A comparison age of onset, duration of illness	157
Table (25)	:	Family history	157
Table (26)	:	Medical history	158
Table (27)	:	Functional assessment: A comparison between patients with late onset and early onset schizophrenia	159
Table (28)	:	Cognitive assessment: A comparison between patients with late onset and early onset schizophrenia using (CAMCOG)	160
Table (29)	:	Cognitive function using Wechsler test (WAIS): A comparison between patients with late onset and early onset schizophrenia	161
Table (30a)	:	Assessment of psychotic symptoms by PANSS: A comparison between patients with late onset schizophrenia and early onset schizophrenia	162
Table (30b)	:	PANSS	163
Table (31)	:	Schizophrenia vs early onset	164
Table (32)	:	Demographic data: A comparison between old non-schizophrenia psychotic patients and old mentally healthy controls	167
Table (33)	:	Education and occupation: A comparison between old non psychotic patients and old healthy controls	168
Table (34)	:	Social class: A comparison between old psychotic patients and old mentally healthy controls	168
Table (35)	:	Family History of psychiatric disorders	169
Table (36)	:	Medical history	170
Table (37)	:	Functional assessment: A comparison between old psychotic patients and old healthy controls	171
Table (38)	:	Cognitive assessment: A comparison between old psychotic patients and old mentally healthy controls using (CAMCOG)	172

Table (39)	: Cognitive Function using Wechsler test (WAIS): Comparison between old psychotic patients and old mentally healthy controls	173
Table (40)	: Comparison between A, B and C groups	174
Table (41)	: Functional assessment comparison among all groups	178

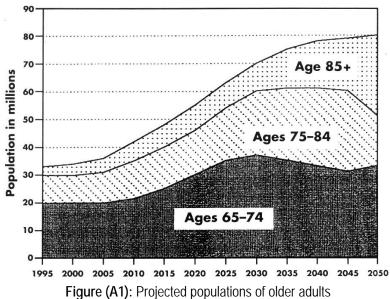
LIST OF FIGURES

			Page
Figure (A1)	:	Projected populations of older adults (Federal Interagency Forum on Ageing Related Statistics 2000)	1
Figure (A2)	:	The Expectation of life at birth by sex	7
Figure (A3)	:	Decision tree for determining the cause of psychotic symptoms in elderly patients	69
Figure (A4)	:	Organizational structure of a module for teaching disease- management skills to elderly persons with schizophrenia.	104
Figure (1)	:	Assessment of psychotic symptoms by PANSS: A comparison between patients with late onset schizophrenia and non schizophrenia late onset psychoses	139
Figure (2)	:	Diagnostic categories: Late onset schizophrenia	143
Figure (3)	:	Diagnostic categories: Late onset other psychoses	143
Figure (4)	:	Schizophrenia vs early onset	165

INTRODUCTION

Worldwide, the number of persons aged 65 and older has increased from 17 million in 1900 to 342 million in 1992 and is expected to increase to 2.5 billion and they will comprise (20% of the total population) by 2050 (*Olshansky et al.*, 1993).

Life expectancy has increased dramatically in the Western Countries and United States, and it is expected to increase more (*Folsom et al.*, 2006).



(Federal Interagency Forum on Ageing Related Statistics 2000).

Most people age 65 and older have at least one chronic medical illness, and many have also multiple medical conditions. Elderly people are affected more often than middle-aged people by arthritis and orthopedic conditions, hypertension and heart conditions, and hearing or visual impairment. Each of these conditions can limit independent function and detract from quality of life (Olshansky et al., 1993; Federal Interagency Forum on Aging-Related Statistics 2000). Death rates from heart disease and stroke decreased by approximately one-third from 1980 through 1997, whereas rates of death due to cancer, pneumonia, and influenza increased slightly, and deaths due to diabetes and chronic obstructive pulmonary disease increased substantially (by 32% and 57% respectively) (Federal Interagency Forum on Aging-Related Statistics, 2000).

In 1992, people age 65 and over were hospitalized nearly four times as often as those ages 15 to 44, and they remained in hospital an average of three days longer than younger adults. Older adults visited their doctors II times a year on the average, compared with 5 times for 15 to 44 year olds. About 65% of all visits to physicians by persons 65 and older, and more than 80% of all mental health visits, involve continuation or prescription of drugs (*Federal Interagency Forum on Aging-Related Statistics*, 2000).

In 1994, about 21% of older adults were chronically disabled as a result of health problems, about 4% had limitations in higher-order activities of daily living (e.g., financial management, transportation, medication schedules) only, 6% had impairment in one or two basic activities of daily living (e.g., eating, bathing, toileting), another 6% were impaired in three to six basic activities, and 5% were institutionalized (*Federal Interagency Forum on Aging Related Statistics*, 2000).

Psychotic symptoms arising in elderly people are of increasing clinical interest (*Howard et al.*, 1997). There has been a more than century-long controversy regarding the diagnosis and aetiology of psychosis which develops late in life (*Miller et al.*, 1991; *Hybels et al.*, 2002). The conceptualization of these syndromes stimulate a number of research questions regarding current hypotheses of neural mechanisms implicated in the patho-physiology of these psychotic disorders (*Barak*, *et al.*, 2002).

In the arena of brain research, the questions of early and late life psychosis may reflect similar neurobiological or neurodevelopmental models of schizophrenia also await future study (*Pearlsan and Petty*, 1994; Karim and Burns, 2003).

It has been postulated that psychoses in late life are associated with varieties of neurologic abnormalities e.g. white matter diseases or vascular lesions (*Breitner et al.*, 1990, Miller et al., 1991; Jeste and Finkel, 2000; Ross and Bowen, 2002).