

شبكة المعلومات الجامعية التوثيق الإلكتروني والميكروفيلو

بسم الله الرحمن الرحيم





MONA MAGHRABY



شبكة المعلومات الجامعية التوثيق الإلكتروني والميكروفيلو



شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم



MONA MAGHRABY



شبكة المعلومات الجامعية التوثيق الإلكترونى والميكروفيلم

جامعة عين شمس التوثيق الإلكتروني والميكروفيلم قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات



يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار



MONA MAGHRABY



EFFECT OF DEMOGRAPHIC CHARACTERISTICS AND SEASONAL VARIATION ON QUALITY OF LIFE OF CHILDREN WITH ATTENTION DEFICIT HYPERACTIVE DISORDER

Thesis

Submitted in partial fulfillment for PhD Degree in Environmental Sciences

Presented By

Nahla Hisham Mahmoud Mohamed Badr

M.Sc. Degree in Clinical Pharmacy-Supreme council of universities

Supervisors

Prof. Dr. Mostafa Hassan Ragab

Professor of Community and Environmental Medical Sciences
Institute of Environmental Studies and Research - Ain Shams
University

Prof. Dr. Ehab Mohamed Eid

Professor of Public Health and Behavioral Medicine Faculty of Postgraduate Childhood Studies Medical department - Ain Shams University

Department of Environmental Medical Sciences
Ain Shams University

2020

ACKNOWLEDGEMENT

I would like to express my deep gratitude and

appreciation to Prof. Dr. Mostafa Hassan Ragab, Professor of

Community and Environmental Medical Sciences, Institute of

Environmental Studies and Research, Ain Shams University, for his

continuous help and unlimited support.

I am greatly indebted and grateful to Dr. Ehab Mohamed Eid,

Professor of Public Health and Behavioral Medicine, Faculty of

Postgraduate Childhood Studies - Medical department - Ain Shams

University, for his continuous encouragement to bring this work to the

attempted goal.

Nahla Hisham Mahmoud

Mohamed Badr

2020

ABSTRACT

Attention-deficit hyperactivity disorder (ADHD) is the most common psychiatric disorder in children and adolescents. Symptoms of ADHD and its treatment can impact an individual's quality of life (QoL).

The present study aimed to evaluate the effect of atomoxetine treatment, demographic characteristics, and seasonal variation on QoL in children with a recent diagnosis of ADHD and their parents. The present study included a cohort of 200 children diagnosed with ADHD. In addition to the recruited children, one of their parents was included in the study.

ADHD symptoms were assessed using Conners' Parent Rating Scale. QoL of the participants was assessed with the PedsQL, while parents' QoL was evaluated using the World Health Organization (WHO) QoL-BREF. There was significant improvement in pediatric and parental QoL after treatment with atomoxetine. Significant factors related to better QoL in the participants included spring season, above average Conner's score, male sex, and rural residence. However, after using multivariate regression analysis, only patients' sex and Conner's score were significant predictors of pediatric QoL at the end of treatment with atomoxetine. Medical treatment significantly improved QoL in children with ADHD and their parents. Level of improvement was affected by patients' sex and ADHD severity.

CONTENTS

Introduction	1
Aim of the study	4
Review of Literature	
ATTENTION-DEFICIT/HYPERACTIVITY	
DISORDER	5
QUALITY OF LIFE AND ADHD	40
TREATMENT OF ADHD	63
SEASONAL VARIATION	90
Patients and Methods	108
Results	115
Discussion	204
Summary & Conclusions	223
References	232
Appendix	-
Arabic Summary	-

LIST OF APPENDICES

Ι	Abd El Aziz Elshakhs socioeconomic questionnaire
II	Conners' Parent Rating Scale (CPRS-48)
III	Arabic version of PedsQL 4.0.
IV	Arabic version of WHO QoL-BREF

LIST OF ABBREVIATIONS

ABB.	Full-term
ADHD	Attention deficit hyperactivity disorder
BMI	Body mass index
CNVs	Copy number variants
DMN	default-mode network
EEG	Electroencephalography
EF	executive functioning
FDA	Food and Drug Administration
GWAS	genome-wide association study
HKD	hyperkinetic disorder
ICD	International Statistical Classification of Diseases
QCD	Questionnaire-Children with Difficulties
QOL	Quality of life
SES	Socioeconomic status

List of Tables

No	Title	Page
	Review	
1	Commonly Prescribed Psychostimulant Medications for ADHD	69
2	Commonly Prescribed Non-Psychostimulant Medications for ADHD	71
3	Management of ADHD Medication Side Effects	74
	Results	
1	Demographic data of the studied children	115
2	Clinical data of the studied children	117
3	Demographic data of the studied caregivers'	119
4	Clinical data of the studied caregivers'	121
5	Conner's rating scale grade	122
6	All-year quality of life of the studied children before and after treatment	123
7	Seasonal quality of life of the studied children after treatment compared to pretreatment levels	125
8	Quality of life of the studied caregivers' before and after treatment	129
9	Relation between Conner's grade and demographic data of the studied children	131
10	Relation between Conner's grade and clinical data of the studied children	134
11	Relation between Conner's grade and demographic data of the studied caregivers'	136
12	Relation between Conner's grade and clinical data of the studied caregivers'	138
13	Relation between Conner's grade and all-year Quality Of Life in the studied children	142
14	Relation between Conner's grade and seasonal quality of life in the studied children	147
15	Relation between Conner's grade and quality of life in the studied caregivers'	152

16	Relation between children all-year quality of life and children Sex	150
17	Relation between children seasonal quality of life and children Sex	152
18	Relation between children all-year quality of life and children socioeconomic status before and after treatment	157
19	Relation between children seasonal quality of life and children socioeconomic status	159
20	Relation between children all-year quality of life and caregivers' age	164
21	Relation between children seasonal quality of life and caregivers' age	166
22	Relation between children all-year quality of life and caregivers' Sex	171
23	Relation between children seasonal quality of life and caregivers' Sex	174
24	Relation between children all-year quality of life and caregivers' work	178
25	Relation between children seasonal quality of life and caregivers' work	180
26	Relation between children all-year quality of life and caregivers' residence	181
27	Relation between children seasonal quality of life and caregivers' residence	183
28	Relation between children all-year quality of life and parental education	188
29	Relation between children seasonal quality of life and caregivers education	189
30	Relation between children all-year quality of life and caregivers' marital status	192
31	Relation between children seasonal quality of life and caregivers' marital status	195

List of Figures

No	Title	Page
	Review	
1	Clinical condition and core symptoms of attention- deficit hyperactivity disorder	15
2	Brain mechanisms in attention-deficit/hyperactivity disorder	19
3	Developmental course of attention- deficit/hyperactivity disorder in persistent cases	26
	Results	
1	Conner's grades in the studied children	122
2	All-year quality of life of the studied children before and after treatment	124
3	Pediatric quality of life before and after treatment in different seasons	126
4	Psychosocial domains before and treatment in different seasons	126
5	Physical functioning domains before and after treatment in different seasons	127
6	Emotional function scale before and after treatment in different seasons	127
7	Social function scale before and after treatment in different seasons	128
8	School function scale before after treatment in different seasons	128
9	Caregiver quality of life before and after treatment	130
10	Relation between Conner's grade and Sex distribution	133
11	Relation between Conner's grade and birth order	133
12	Relation between Conner's grade and mode of delivery	140
13	Relation between Conner's grade and time of labor	140
14	Relation between Pediatric quality of life before and after treatment and Conner's grade	143

15	Relation between Pediatric Psychosocial scale before	144
	and after treatment and Conner's grade	177
16	Relation between Pediatric Physical function scale	144
10	before and after treatment and Conner's grade	144
17	Relation between Pediatric Emotional function scale	145
	before and after treatment and Conner's grade	143
18	Relation between Pediatric Social function scale	145
10	before and after treatment and Conner's grade	143
19	Relation between Pediatric Social function scale	146
1)	before and after treatment and Conner's grade	140
20	Relation between Pediatric quality of life after	149
20	treatment at different seasons	149
21	Relation between Social function scale after treatment	149
21	at different seasons	149
22	Relation between Psychosocial scale after treatment at	150
22	different seasons	130
23	Relation between Physical functioning after treatment	150
23	at different seasons	130
24	Relation between Emotional function scale after	151
24	treatment at different seasons	131
25	Relation between School function scale after	151
23	treatment at different seasons	131
26	Relation between Conner's grade and quality of life	152
20	with Caregivers' quality of life.	153
27	Relation between Conner's grade and quality of life	153
21	with Caregivers' psychological health domain	133
28	Relation between quality of life after treatment and	155
20	patients' Sex	155
29	Relation between children seasonal Pediatric quality	157
29	of life and children Sex	157
30	Relation between children seasonal Psychosocial scale	158
30	and children Sex	130
31	Relation between children seasonal Physical	158
31	functioning scale and children Sex	130
22	Relation between children seasonal Emotional	159
32	function scale and children Sex	139
22	Relation between children seasonal Social function	159
33	scale and children Sex	133

34	Relation between children seasonal School function scale and children Sex	160
35	Relation between children Emotional function scale and children socioeconomic status	162
36	Relation between children seasonal Pediatric quality of life and children socioeconomic status	165
37	Relation between children seasonal Psychosocial scale and children socioeconomic status	165
38	Relation between children seasonal Physical functioning scale and children socioeconomic status	166
39	Relation between children seasonal Emotional function scale and children socioeconomic status	166
40	Relation between children seasonal Social function scale and children socioeconomic status	167
41	Relation between children seasonal School function scale and children socioeconomic status	167
42	Relation between children seasonal Pediatric quality of life after treatment and caregivers' age	172
43	Relation between children seasonal Psychosocial scale after treatment and caregivers' age	172
44	Relation between children seasonal Physical functioning scale after treatment and caregivers' age	173
45	Relation between children seasonal Emotional function scale after treatment and caregivers' age	173
46	Relation between children seasonal Social function scale after treatment and caregivers' age	174
47	Relation between children seasonal School function scale after treatment and caregivers' age	174
48	Relation between children Pediatric quality of life and caregivers' Sex	177
49	Relation between children Emotional function scale and caregivers' Sex	177
50	Relation between children Pediatric quality of life after treatment and caregivers' sex	180
51	Relation between children Psychosocial scale after treatment and caregivers' sex	180
52	Relation between children Emotional function scale after treatment and caregivers' sex	181

	Relation between children Social function scale after	
53	treatment and caregivers' sex	181
	Relation between children School function scale after	
54	treatment and caregivers' sex	182
55	Relation between children Physical functioning scale	
	after treatment and caregivers' sex	182
	Relation between children Pediatric quality of life	100
56	after treatment and caregivers residence	189
	Relation between children Psychosocial scale after	100
57	treatment and caregivers residence	190
50	Relation between children Physical functioning scale	100
58	after treatment and caregivers residence	190
50	Relation between children Emotional function scale	101
59	after treatment and caregivers residence	191
<i>(</i> 0	Relation between children Social function scale after	101
60	treatment and caregivers` residence	191
61	Relation between children School function scale after	102
61	treatment and caregivers residence	192
62	Relation between children Pediatric quality of life	195
02	after treatment and caregivers education	193
63	Relation between children Psychosocial scale after	106
03	treatment and caregivers education	196
64	Relation between children Physical functioning scale	196
04	after treatment and caregivers education	190
65	Relation between children Emotional function scale	197
0.5	after treatment and caregivers" education	197
66	Relation between children Social function scale after	197
00	treatment and caregivers' education	19/
67	Relation between children School function scale after	198
07	treatment and caregivers' education	170
68	Relation between children Pediatric quality of life	201
00	after treatment and caregivers' marital status	201
69	Relation between children Psychosocial scale after	201
	treatment and caregivers' marital status	201
70	Relation between children Physical functioning scale	202
, 0	after treatment and caregivers' marital status	
71	Relation between children Emotional function scale	202
	after treatment and caregivers' marital status	202