

Biological Factors in Chronic PTSD

Thesis submitted for the degree of
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Table of Contents

List of Tables	xi
Abstract	xvii
Statement of Originality	xx
Acknowledgment	xxi
I. Introduction and Review of Literature	1

1. Kuwait and FGW	2
<i>1. A. Kuwait Background</i>	2
<i>1. B. Invasion and Occupation of Kuwait 1990-1991</i>	2
2. Traumatic Events As a result of the Invasion and Occupation	3
<i>2. A. Characteristics of the trauma</i>	3
<i>2. B. Statistics of the Injuries</i>	4
3. Kuwait Liberation	6
4. Review of Literature	7
<i>4. A. Introduction Review of literature</i>	7
<i>4. B. Psychiatric consequences of First Gulf War</i>	11
<i>4. C. Physical Consequences of FGW</i>	12
<i>4. C. 1. Studies supporting the neurotoxin and environmental exposure as etiological factors</i>	13
<i>4. C. 2. Studies not supporting the neurotoxin and environmental exposure as etiological factors</i>	15
4. D. Depression	17
4. E. Conclusion	18

II. PTSD Study in Kuwait

19

III. Methods

24

1. Aims of the study	25
2. A. Hypotheses	26
2. B. 1. PTSD	26
2. B. 2. Cortisol levels in patients with chronic PTSD	27
2. B. 3. Thyroid functions: <i>fT4, fT3, TSH</i> in patients with chronic PTSD	27
3. Design and Stages	29
3. A. First Phase	29
3. B. Second Phase	29
4. Sample	30
4. A. Recruitment of the sample	31
4. B. Preparing the list	32
5. Interview Procedure	32
5. A. Informed Consent	33
5. B. Ethical Obligations	33
5. C. Data collection	33
5. C. 1. First Phase	34
5. C. 2. Second Phase	35
6. Assessment	36
6. A. Standardized measurements	36
6. A. 1. Pulse Rate (PR)	36
6. A. 2. Blood pressure (BP)	36
6. A. 3. Waist-Hip Circumference WHP	36
6. A. 4. Weight- Height: Body Mass Index (BMI)	36
6. A. 5. Visual analogue scale (VAS) before the interview	36
6. A. 6. Visual analogue scale (VAS) after the interview	37

6. B. Biological measures	37
6. B. 1. Cortisol level	37
6. B. 2. Thyroid function test: fT3, fT4, TSH	37
6. C. Trauma assessment	37
6. D. Posttraumatic Stress Disorder (PTSD) Assessment	38
6. D. 1. Clinician Administered PTSD Scale CAPS	38
6. D. 2. Impact of Events Scale (IES-R)	39
7. Scales and questionnaires	40
7. A. General Health Questionnaire	40
7. B. Symptom Checklist – 90 Revised (SCL-90-R) (Derogatis et al 1994)	40
7. C. Eysenck Personality Questionnaire – EPQ (Eysenck et al 1975)	40
7. D. Life Event Scale (LES) (Holmes et al 1967)	41
7. E. CIDI	41
7. F. FGW Syndrome (GWS)	41
8. Data Handling and Management	41
8. A. Procedure	41
8. B. Checking processing coding	42
8. C. Data Entry	42
8. D. Storage	42
8. E. Statistical analysis	42
9. Research Supervisors	43
9. A. Research approval	43
9. B. Local supervisor	43
9. C. Main supervisor	43

IV. Chronic Posttraumatic Stress Disorder

44

1. A. Introduction	45
1. B. PTSD Classification	46
1. C. Prevalence of PTSD	47

<i>1. D. PTSD Pathophysiology</i>	49
<i>1. E. Chronic PTSD</i>	54
<i>1. F. Course of PTSD</i>	55
<i>1. G. Chronic PTSD co-morbidity</i>	57
<i>1. H. Predictors of the course of PTSD</i>	61
<i>1. I. PTSD Remission</i>	64
<i>1. J. Risk Factors of chronic PTSD</i>	65
<i>1. K. Prognosis of Chronic PTSD</i>	69
2. Hypotheses	72
3. Objectives	73
4. Results	74
<i>4. A. PTSD classification</i>	74
<i>4. A. 1. PTSD in the 1st and 2nd assessments</i>	74
<i>4. A. 2. PTSD in the 2nd assessment with 33 new cases</i>	74
<i>4. B. Socio-demographic Characteristics</i>	75
<i>4. B. 1. Age</i>	75
<i>4. B. 2. Gender</i>	75
<i>4. B. 3. Social Status</i>	76
<i>4. B. 4. Education</i>	77
<i>4. B. 5. Employment</i>	78
<i>4. B. 6. Income and family members</i>	78
<i>4. B. 7. Change in life standard after the trauma</i>	79
<i>4. B. 8. Past Psychiatric History</i>	80
<i>4. C. PTSD</i>	81
<i>4. C. 1. Trauma</i>	81
<i>4. C. 2. PTSD – CAPS</i>	82
<i>4. C. 3. Severity of PTSD symptoms</i>	82
<i>4. C. 3. A. Total PTSD symptoms – CAPS</i>	82
<i>4. C. 3. B. PTSD symptoms in 1998 (1st assessment) and 2003 (2nd assessment)</i>	83
<i>4. C. 4. Predictors of PTSD</i>	84

4. C. 5. PTSD associated symptoms	85
4. C. 6. Treatment	86
4. D. PTSD and Injury	87
4. E. Co morbid psychiatric disorders	87
4. E. 1. Generalized Anxiety Disorder (GAD)	87
4. E. 2. Panic Disorder	88
4. E. 3. Obsessive Compulsive Disorder (OCD)	88
4. E. 4. Somatization	89
4. E. 5. Depression	89
4. E. 5. A. Major Depressive Disorder (MDD)	89
4. E. 5. B. Dysthymia	89
4. F. Physical parameters in PTSD	89
4. F. 1. Blood Pressure (BP)	89
4. F. 2. Pulse Rate (PR)	91
4. F. 3. Body Mass Index (BMI)	92
4. F. 4. Waste-Hip Ratio (WHR)	92
4. G. Life Events	93
4. H. Personality	93
4. H. 1. Psychoticism	93
4. H. 2. Neuroticism	94
4. H. 3. Extraversion	94
4. I. Summary of the results	95
4. I. 1. PTSD and different physical parameters	95
4. I. 2. PTSD Subtypes	97
4. I. 3. Correlations: PTSD and No-PTSD and different variables	98
5. Discussion	99
5. A. Chronic PTSD	99
5. B. PTSD and Axis-I co-morbidity	101
5. B. 1. Anxiety Disorders	101
5. B. 2. Depression	102

5. C. <i>Daily functioning</i>	102
5. D. <i>Psychotherapy and/or Psychopharmacology</i>	103
5. E. <i>Severity of PTSD Symptoms</i>	103
5. F. <i>PTSD and physiological parameters</i>	105
5. G. <i>PTSD and Social factors</i>	106
5. H. <i>PTSD and personality subtypes</i>	107
6. Conclusions	109

V. Cortisol hormone in Chronic PTSD **111**

1. Introduction	112
2. Brain structures in PTSD	115
3. Biochemical changes in PTSD	117
3. A. <i>Neuroendocrine</i>	119
3. B. <i>Cortisol</i>	119
3. C. <i>Catecholamine in PTSD</i>	122
4. The Dexamethasone suppression test in PTSD	122
5. Adrenal gland in PTSD	123
6. Hypothalamic-Pituitary-Adrenal axis	123
7. Pituitary gland in PTSD	123
8. Cortisol Receptors	124
9. Potential covariates	124
10. Hypotheses	129
11. Results	130
11. A. <i>Socio-demographic</i>	130
11. A. 1. <i>Age</i>	130
11. A. 2. <i>Gender</i>	131
11. B. <i>PTSD and cortisol level</i>	131
11. B. 1. <i>PTSD</i>	131

<i>11. B. 2. Cortisol levels</i>	132
<i>11. C. Severity of Physical injury, PTSD and cortisol level</i>	134
<i>11. D. Severity of PTSD symptoms, PTSD diagnosis, and cortisol level:</i>	135
<i>11. D. 1. Avoidance Symptoms:</i>	136
<i>11. D. 2. Arousal symptoms</i>	136
<i>11. D. 3. Intrusive symptoms</i>	137
<i>11. E. Psychiatric Co-morbidity, PTSD and Cortisol level</i>	139
<i>11. E. 1. Somatic complaints and daily activities</i>	139
<i>11. E. 2. Physical symptoms</i>	140
<i>11. E. 3. Physical disorders</i>	141
<i>11. E. 4. Generalized Anxiety Disorder (GAD) and anxiety symptoms</i>	142
<i>11. E. 5. Major Depressive Disorder (MDD) and depressive symptoms</i>	143
<i>11. E. 6. Panic attacks</i>	144
<i>11. E. 7. Alcohol and substance abuse</i>	145
<i>11. E. 8. Cigarette Smoking and substance abuse</i>	146
<i>11. E. 9. Other psychiatric co-morbidities</i>	148
<i>11. E. 9. A. Somatization,</i>	149
<i>11. E. 9. B. Obsessive Compulsive Disorder OCD</i>	150
<i>11. F. Life events, PTSD and cortisol level:</i>	151
<i>11. G. Family history of psychiatric disorder, PTSD and cortisol level</i>	152
12. Discussion	153
<i>12. A. PTSD and cortisol level</i>	153
<i>12. B. Total injury score, PTSD and cortisol level</i>	158
<i>12. C. Age, PTSD and cortisol level</i>	158
<i>12. D. Somatic and psychological problems in PTSD and cortisol level</i>	159
<i>12. E. Major Depressive disorder, PTSD and cortisol level</i>	159
<i>12. F. PTSD subtypes, cortisol level</i>	161
<i>12. G. Life events, PTSD and cortisol level</i>	161
<i>12. H. Severity of PTSD symptoms and cortisol level</i>	162
<i>12. I. General comments about the results:</i>	163

13. Conclusions	171
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VI. Chronic PTSD and Thyroid Functions **174**

1. Introduction	175
2. Hypotheses	177
3. Results	178
<i>3. A. PTSD and thyroid function</i>	178
<i>3. A. 1. Age</i>	179
<i>3. A. 2. Gender, PTSD and thyroid function</i>	181
<i>3. B. PTSD subtypes and Thyroid Functions</i>	182
<i>3. B. 1. Free Triiodothyronine (fT3)</i>	184
<i>3. B. 2. Free Thyroxin (fT4) Tables</i>	184
<i>3. B. 3. Thyroid Stimulating Hormone (TSH)</i>	184
<i>3. C. Severity of physical injury, PTSD and thyroid function</i>	185
<i>3. D. Severity of PTSD symptoms and thyroid functions</i>	186
<i>3. D. 1. Arousal symptoms</i>	188
<i>3. D. 2. Avoidance symptoms</i>	190
<i>3. D. 3. Intrusion symptoms</i>	191
<i>3. E. Psychiatric Co-morbid disorders, PTSD and Thyroid functions</i>	192
<i>3. E. 1. Generalized Anxiety Disorder (GAD) and Anxiety symptoms</i>	192
<i>3. E. 2. Major Depressive Disorder (MDD) and Depressive symptoms</i>	194
<i>3. E. 3. Panic attacks</i>	195
<i>3. E. 4. Alcohol Abuse</i>	197
<i>3. E. 5. Cigarette Smoking</i>	199
<i>3. E. 6. Obsessive Compulsive Symptoms</i>	201
<i>3. E. 7 Family History of Psychiatric Disorders, PTSD and Thyroid function</i>	203
4. Discussion	204
<i>4. A. PTSD and thyroid functions</i>	204
<i>4. B. Factors affecting thyroid functions in chronic PTSD</i>	207

4. B. 1. Gender differences	207
4. B. 2. Age	208
4. B. 3. Severity of the physical injury	209
4. B. 4. Severity of PTSD symptoms	209
4. C. Co-morbid Psychiatric Disorders	211
4. C. 1. Depression	211
4. C. 2. Generalized Anxiety Disorder	213
4. C. 3. Panic attacks	213
4. C. 4. OCD	213
4. C. 5. Alcohol Use	214
4. C. 6. Tobacco Smoking:	214
4. D. Summary of the results	216

VII. Limitations and Strengths of the Study **221**

1. Limitations of this study	222
2. Strength of the study	226
3. Future research	228
4. General challenges in doing neurobiology research in PTSD	229
5. Significance and implications	232
6. Conclusions	234

VIII. References	238
IX. Appendixes	280

1. General Health Questionnaire	281
2. Trauma Questionnaire	284
2. A. Physical Trauma scoring	284
2. B. Trauma Assessment Questionnaire before the CAPS	286
3. Kit used for thyroid and cortisol analysis	287

List of Tables

Chapter II. PTSD in Kuwait

1. Comparison between prevalence PTSD1993 and PTSD1998	21
2. Comparison between prevalence Depression 1993 and Depression 1998	22
3. Comparison between Anxiety 1993 and Anxiety 1998	23

Chapter III. Methods

1. Study population in 2003 compared to 1998	31
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Chapter IV. Chronic Posttraumatic Stress Disorder

1. Mean age and Sub-types of PTSD 2003	75
2. PTSD subtypes and gender	76
3. Social status of participants and PTSD subtypes	76
4. Rating satisfaction in social life and subtypes of PTSD	77
5. PTSD subtypes and education level	77
6. Employment and PTSD subtypes	78
7. Monthly Income (Kuwaiti Dinar KD: 3.3 US\$ for 1 KD) and PTSD	78
8. PTSD subtypes and Change in living standard due to the trauma	79
9. PTSD and Change in living standard due to the trauma	80
10. Past Psychiatric History and PTSD subtypes	80
11. Trauma and PTSD	81
12. Trauma and PTSD subtypes	81
13. Severity of PTSD symptoms using CAPS	82
14. PTSD symptoms in PTSD subtypes	83
15. PTSD in 1998 1st phase and PTSD subtypes in 2003 2nd phase using CAPS	83
16. PTSD diagnosis in 2003 and total score of PTSD symptoms 1998	84

17. Correlations PTSD symptoms in 1 st assessment in 1998 as predictors of total PTSD symptoms and PTSD diagnosis in 2 nd assessment in 2003	84
18. Correlations PTSD associated symptoms in 1 st assessment in 1998 as predictors of total PTSD symptoms and PTSD diagnosis in 2 nd assessment in 2003	85
19. PTSD associated symptoms in 1 st assessment 1998 and 2 nd assessment 2003	85
20. Types of injury and Injury score	86
21. Total Injury Score Due To All Injuries	87
22. Distribution of: SCL-90R scores, and CIDI diagnosis by PTSD subtypes	88
23. Blood Pressure	90
24. PTSD subtypes and 1998 AND PTSD 2003	90
25. Systolic and Diastolic BP and PTSD subtypes	91
26. Pulse pressure and PTSD subtypes	91
27. One-way analysis of variance for Pulse and PTSD subtypes	91
28. Body Mass Index	92
29. One-way analysis of variance for BMI and PTSD subtypes	92
30. WHR and PTSD subtypes	92
31. Total of LES and PTSD subtypes	93
32. Bivariate correlation using EPQ: and PTSD cluster symptoms	94
33. EPQ: Psychoticism, Neuroticism, Extraversion and PTSD subtypes	95
34. PTSD and different physical and psychological parameters	96
35. PTSD subtypes and psychosocial variables	97
36. PTSD and correlations with different variables	98

Chapter V. Cortisol Hormone in Chronic PTSD

1. Plasma morning cortisol levels in participants with PTSD and comparison participants	128
2. PTSD and no PTSD groups	130
3. PTSD and no-PTSD groups: Dependent Variable: cortisol, covariate for age	131
4. Gender and Mean cortisol level	131
5. T- test: PTSD and no-PTSD, and cortisol level (nmol/l)	132

6. Correlation between: sampling time, sleep duration and cortisol level (nmol/l)	132
7. Cortisol levels in the sample	133
8. Cortisol (nmol/l) Percentiles and PTSD	133
9. Cortisol level (nmol/l) and PTSD 1998 AND PTSD 2003	134
10. Total injury score, cortisol level (nmol/l) and PTSD and No PTSD group	134
11. Correlations between injury score and cortisol level (nmol/l)	135
12. Cortisol level (nmol/l), injury score and PTSD	135
13. Correlation Cortisol level (nmol/l) and severity of PTSD symptoms	135
14. Cortisol (nmol/l) and total Avoidance Score (CAPS) and PTSD and no PTSD	136
15. Cortisol (nmol/l), PTSD and no PTSD, and total arousal score (CAPS)	136
16. Cortisol (nmol/l), PTSD diagnosis, and total arousal score (CAPS)	137
17. Correlation between Cortisol (nmol/l), PTSD Symptoms severity, Current avoidance, Current Arousal, and Current Intrusion	138
18. PTSD diagnosis and deterioration in daily activities performance (CIDI)	139
19. Correlations PTSD total symptoms, daily activities performance (CIDI) and cortisol level	139
20. Impairment in daily activity using CIDI and cortisol level (nmol/l)	140
21. T-test Physical symptoms (GWQ) and PTSD diagnosis	140
22. Correlation between: PTSD diagnosis, cortisol level, and physical symptoms (GWQ)	140
23. Physical disorders and PTSD and no-PTSD (Chi-Square), correlations (t-test) with severity of PTSD symptoms and levels of cortisol	141
24. GAD according to ICD-10, using CIDI and PTSD diagnosis	142
25. Total Anxiety Score and PTSD diagnosis	142
26. PTSD and No- PTSD group, cortisol level (nmol/l), and total score of anxiety symptoms SCL-90R	142
27. Cortisol level (nmol/l), PTSD and Anxiety	143
28. Prevalence of Depression among PTSD and no-PTSD group using SCL90R	143
29. PTSD and mean Total Depression score Score:SCL90R	144
30. Panic attacks (CIDI scale) and PTSD and No PTSD groups	144
31. Panic attacks (ICD-10: CIDI) and mean cortisol level (nmol/l)	144

32. PTSD, Panic attacks (DSM-IV: CIDI) and mean cortisol level (nmol/l)	145
33. PTSD total symptoms, mean cortisol (nmol/l) and presence of panic attacks	145
34. Alcoholism, mean cortisol level (nmol/l)	146
35. PTSD, Alcoholism and mean cortisol level (nmol/l)	146
36. PTSD, Alcoholism, mean cortisol level (nmol/l) PTSD Total score	146
37. Smoking history and PTSD and No PTSD group	147
38. Cigarette smoking and mean cortisol level (nmol/l)	147
39. PTSD, Cigarette smoking and mean cortisol level (nmol/l)	147
40. Cortisol (nmol/l), PTSD and cigarette smoking history	147
41. Global Severity Index (GSI) and positive symptom distress index (PSDI) of SCL-90R with PTSD	148
42. Cortisol (nmol/l), PTSD and no PTSD in relation to Total scores of Global severity index and positive symptoms distress index SCL-90R	148
43. Cortisol (nmol/l), PTSD and no PTSD in relation to total scores of somatization	149
44. PTSD, Somatization and mean cortisol level MCL(nmol/l)	149
45. Obsessive compulsive disorder OCD, and mean cortisol level (nmol/l)	150
46. Obsessive compulsive symptoms, and mean cortisol level (nmol/l)	150
47. Mean cortisol level (nmol/l), PTSD and no PTSD in relation to Total scores of Obsessive compulsive symptoms OCD (SCL-90R)	150
48. Cortisol (nmol/l), PTSD and no-PTSD in relation to total scores of Obsessive compulsive symptoms OCD (SCL-90)	151
49. PTSD and Life Events Scale mean Score	151
50. Cortisol, PTSD and no PTSD in relation to Total scores of life events scale	151
51. Cortisol level in PTSD and no-PTSD with LES score > and < 300 points	152
52. Family history of psychiatric disorders, and mean cortisol level MCL (nmol/l)	152
53. PTSD, Family history of psychiatric disorders, and mean cortisol level MCL (nmol/l)	152
54. Effect size using Cohen's d and r values of 22 published studies and the current study of cortisol level between trauma (PTSD and no PTSD) and no trauma controls	157
55. Summary of the findings: PTSD and no PTSD groups and psychosocial variables	171

Chapter VI. Chronic PTSD and Thyroid Functions

1. fT3 Pmol/l pg/ml), fT4 pmol/l ng/dl), TSH in the studied sample	179
2. fT3, fT4, TSH and age categories	180
3. PTSD According to DSM-IV Age and mean: fT3, fT4, TSH, and fT3/fT4	180
4. PTSD According to DSM-IV Age and mean: fT3, fT4, TSH, fT3/fT4	181
5. Gender and PTSD severity	182
6. Gender and thyroid function: fT3, fT4, TSH, and fT3/fT4.	182
7. PTSD and Thyroid Functions	183
8. PTSD subtypes and fT3, fT4 and TSH	183
9. Total Injury Score due to all Injuries	185
10. Total injury score, PTSD diagnosis and thyroid functions	185
11. fT3, fT4, TSH, and fT3/fT4 and severity of PTSD symptoms using Impact of Events Scale	187
12. Severity of PTSD using DSM-IV CAPS and thyroid function	187
13. Severity of PTSD symptoms, PTSD diagnosis, and thyroid function	188
14. Severity of Current Arousal symptoms, PTSD diagnosis, and thyroid functions	189
15. Severity of Current Avoidance symptoms, PTSD diagnosis, and thyroid functions	190
16. Intrusive symptoms severity DSM-IV and thyroid function	191
17. PTSD, Intrusive Symptoms Severity, and thyroid Function.	191
18. Severity of Current Intrusive symptoms, PTSD diagnosis, and thyroid functions	192
19. Generalized Anxiety Disorder GAD ICD-10 CIDI and means: fT3, fT4, TSH, and fT3/fT4	193
20. PTSD with Anxiety symptoms ICD-10: CIDI and: fT3, fT4, TSH, and fT3/fT4	193
21. Major depressive disorder MDD CIDI and: fT3, fT4, TSH, and fT3/fT4	194
22. PTSD with and without MDD ICD-10 CIDI and: fT3, fT4, TSH, and fT3/fT4	195
23. A: Panic Attacks DSM-IV: CIDI and thyroid function	196
23. B: Panic Attacks DSM-IV: CIDI and thyroid function	196
24. Panic Attacks, PTSD (DSM-IV: CIDI) and thyroid functions	197
25 A: Alcohol and: fT3, fT4, TSH, and fT3/fT4	198

26 PTSD with Alcohol and: fT3, fT4, TSH, and fT3/fT4	199
27. Smoking and: fT3, fT4, TSH, and fT3/fT4	200
27 A: PTSD with smoking and: fT3, fT4, TSH, and fT3/fT4	200
27 B: PTSD with smoking and: fT3, fT4, TSH, and fT3/fT4	201
28 OCD ICD-10: CIDI and fT3, fT4, TSH, and fT3/fT4	202
29 PTSD with OCD ICD-10: CIDI and fT3, fT4, TSH, and fT3/fT4	202
30 Family history of psychiatric disorders and: fT3, fT4, TSH, and fT3/fT4	203
31 PTSD Family history of psychiatric disorders and: fT3, fT4, TSH, and fT3/fT4	203
32. Summary of the findings: PTSD and no-PTSD groups and different variables	216
33. Summary of the findings: PTSD subtypes and different variables	217

Abstract

This is a prospective study of a cohort sample of injured Kuwaiti First Gulf War survivors designed to investigate the prevalence of psychiatric morbidity due to combat and exposures to traumatic events. The study included two main phases. The first phase conducted in 1998, and in 2003 the second phase was executed. This study was designed to investigate the contribution of combat physical injury to the neurobiology of posttraumatic stress disorder (PTSD), prevalence rates of PTSD, depression, anxiety and other psychological morbidity, and predictors of chronic PTSD.

The first assessment was in 1998 and the second assessment in 2003 that involved biological investigations. Beside the clinical interview and the physical examination of the site of injury, multiple psychological scales and questionnaires were used.

Based on DSM-IV criteria of PTSD, after the second assessment the population of this study were classified to: Chronic PTSD (have PTSD at both assessments), Delayed PTSD (have PTSD only on the second assessment), Recovered (have PTSD only in the first assessment), and Never PTSD (have no PTSD in both assessments). The biological assessment include: blood investigations, BMI, and visual analogue. The data of the study were analyzed based on the four PTSD subgroups.

In the first chapter an introduction to the First Gulf War was presented followed by the second chapter that discussed literature review. The third chapter tackled the methods used in this study. The fourth to the sixth chapters discussed the results of this study regarding prevalence of Chronic PTSD, Cortisol and PTSD and Thyroid hormones and PTSD respectively. The last chapter presented the limitations and strengths of the study

There were three main hypotheses. First: combat injured survivors with chronic PTSD have cluster of symptoms severity similar to delayed PTSD after 13 years of the trauma and the prevalence of chronic PTSD is constant over time. Second: low cortisol levels observed in chronic PTSD are constant with chronicity, normalize with recovery, unrelated to degree of disability, and are influenced by comorbid disorders. Third: there is minor role for thyroid hormones in chronic PTSD.

All of registered Kuwaiti combat injured survivors at the Social Development Office in Kuwait, were approached to voluntary participate in this study. Of 234 individuals 212 participate in the first stage, and out of these 123 participate in the second stage with the addition of 33 new cases that were not examined in 1998 but were registered in SDO after 1998. An informed consent was taken from the participants at both phases.

The participants were assessed using General Health Questionnaire, Trauma Questionnaire, Clinician Administered PTSD Scale, Eysenck Personality Questionnaire, Symptom Checklist-90 Revised, and Life Event Scale. Questionnaires and scales applied in the first stage were applied in the second stage with the addition of Impact of Event Scale, Composite International Diagnostic Interview and Scale of Gulf War Syndrome.

Biochemical assessment comprised cortisol level, thyroxine (fT4), free triiodothyronine (fT3) and thyroid stimulating hormone (TSH). The blood samples were taken before starting the interview. Physical assessment involved measurements of: pulse rate, systolic and diastolic blood pressure, waist-hip circumference, body mass index and visual analogue before and after the interview.

Data entry program using Statistical Package for Social Scientists was used to enter data and analysis.

The prevalence rate of delayed onset PTSD (14.6%), chronic PTSD (15.4) recovered from PTSD (22.8%) and never had PTSD (47.2%). With chronic PTSD there are higher cluster of PTSD symptoms severity, not related to severity of physical injury, has more prevalence of PTSD associated symptoms, higher comorbid psychiatric disorders. Intrusions, avoidance and arousal are PTSD cluster of symptoms more predictive of future development of PTSD after the injury. There was a low baseline cortisol level with chronic PTSD, and it was significantly lower in participants with delayed PTSD. Furthermore trauma itself rather than PTSD diagnosis may have an impact on cortisol level. Other psychiatric comorbidity has an enhancing effect on cortisol level.

The levels of thyroid hormones were within the normal range. The trend of thyroid function in delayed and chronic PTSD is lower fT3, and TSH and higher fT4 levels, with higher fT3 levels in delayed PTSD compared to chronic PTSD. It was found that the higher severity of trauma score with PTSD the higher fT3 mean values.

Statement of Originality

I declare that this thesis report is my own work, except where acknowledged. It has not been submitted for academic credit (award of any degree) or diploma) in any University or other tertiary institution, and to the best of my knowledge and belief, contain no material previously published or written by another person, except where due reference has been made in the text.

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Abdullah M. Al-Hammadi

Date:

I believe that this thesis is properly presented, conforms to the specification for the degree of sufficient standard to be, prima facie, worthy of examination.

Professor Alexander Cowell McFarlane

Principal Supervisor

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