HORMONAL ASSESSMENT IN ADOLESCENT BOYS WITH ANTISOCIAL BEHAVIORS

Thesis

Submitted For Fulfilment of The
Ph.D. Degree in
MEDICAL CHIHLDHOOD STUDIES

By

WAEL ARAFAT EL-MANSY
(M.B., Ch. & M.Sc.)

Supervisors

Prof. Dr. **ZEINAB BISHRY**
Professor of Psychiatry
Ain Shams University

Prof. Dr. **H. ROSHDY EL-KADY**
Professor of Radiobiology
National Center For Radiation
Research and Technology

Prof. Dr. **MOHAMMED A. MANSOUR**
Professor of Radiobiology
National Center For Radiation
Research and Technology

INSTITUTE OF POSTGRADUATE CHILDHOOD STUDIES
AIN SHAMS UNIVERSITY

1991

DISCUSSION AND JUDJMENT COMMITTEE

The vice-president for higher studies and research of Ain-Shams University has approved to form the following committee for the discussion of Mr. Wael Arafat EL Mary.

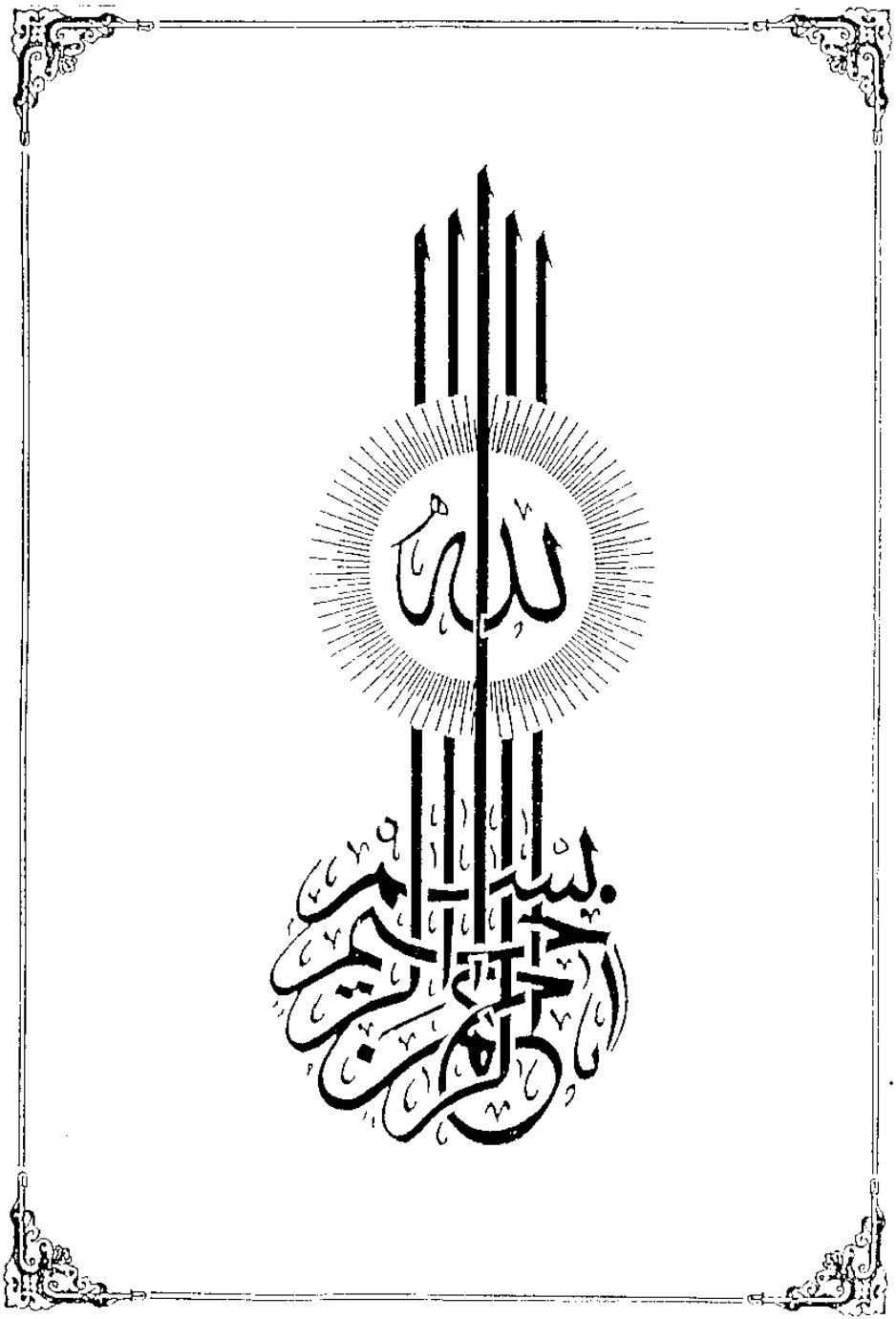
1. Prof. Dr. Fawzi Bahy Abdel Hameed - Professor of ... Psychiatry - Ain Shams University ... Chairman

2. Prof. Dr. Fawzi Mohamed Kadry - Professor of ... Pediatrics - Cairo University ..... Member

3. Prof. Dr. Doaa Mohamed Hassan - Professor of Psychiatry - Military Medical Academy ..... Member

4. .....

..... Member .....



ACKNOWLEDGEMENT

I would like to express my utmost gratitude and deepest appreciation to my Professor Dr. **ZEINAB BESHRY**, Professor of Psychiatry, Ain Shams University, for her meticulous supervision, contineous encouragement and endless help which helped me greatly to complete this work.

I am also grateful to Prof. Dr. **HAMED R. EL-KADY**, Professor of Radiobiology, National Center for Radiation Research and Technology, for his kind supervision, valuable advices and contineous support.

I am also honoured to express my deepest appreciation to Prof. Dr. **MOHAMMED A. MANSOUR**, Professor of Radiobiology, National Center for Radiation Research and Technology, for his expetional effort especially in the practical hormonal Radio-immuncassay.

My special thanks to Dr. **ILHAMY A. OMAR**, Lecturer of Psychology, Institute of Postgraduate Childhood Studies, Ain Shams University, for his helpful advices in statistical analysis.

TO MY WIFE

WHO SUFFERED MUCH

AND OFFERED TOO MUCH

FOR THIS WORK TO COME INTO LIGHT.

C O N T E N T S

Page

- INTRODUCTION AND AIM OF THE WORK..... 1
- REVIEW OF LITERATURE: 4
  * Conduct Disorders And Antisocial Behavior..... 4
  * Gonadotropins..... 26
  * Testosterone..... 34
  * Hormones And Behavior..... 44
- MATERIALS AND METHODS..... 56
- RESULTS..... 74
- DISCUSSION..... 114
- SUMMARY..... 132
- REFERENCES..... 135
- ARABIC SUMMARY.....

-ooOoo-

Introduction and AIM OF THE WORK

INTRODUCTION AND AIM OF THE WORK

Conduct disorders and antisocial behaviors form the largest single group of psychiatric disorders in older children and adolescents (Gelder et al., 1983).

The essential problem in behavioral disorders is failure to learn the society's norms for behavior or failure to observe these even though aware of them, or a combination of the two. Antisocial behaviors have a multifactorial aetiology, and seldom it is possible to pinpoint one specific cause for antisocial behaviors (Barker, 1988).

The relationship between hormones and behavior is a complex and interdigitating one: Some hormones play a role in normal behavior (e.g. action of androgens on male sexual behavior), and pathological hypo- or hypersecretion of such hormones can have diverse behavioral effects (Dabbs et al., 1987). Some other hormones have behavioral effects only in states of hypo- or hypersecretion while it is not clear that normal levels of such hormones have significant

behavioral effects e.g. thyroxin hormone (Gray and Resko, 1972). On the other hand, stress and psychiatric disorders can cause secondary changes in the endocrine system e.g. the effect of major depressive disorders on the hypothalamo-pituitary-adrenal axis (Coe et al., 1982).

A link between androgen levels and aggressive behavior in animals had been found consistantly for males and sometimes for females (Eleftheria and Sprott, 1975; Eliss, 1982 and Bouissou, 1983). Weisfeld and Berger (1983) found that hormonal changes were associated with behavioral changes in young adolescents. The relation between antisocial behaviors and male sex hormones was clarified by Susman et al. (1987) who found such a relation in adolescent boys but not in girls. Androgen-aggression relations had also been reported in adult men (Mazur and Lumb, 1980) and late pubertal male adolescents (Olweus et al., 1980).

Elizabith et al. (1987) studied hormones, emotional disposition, and aggressive attributes in young adolescents. They found that hormonal levels were related to both emotional disposition and aggressive

attributes for boys but not for girls. Higher scores on delinquent behavior problems were related to lower levels of estradiol and higher levels of testosterone.

This work aims at studying the possible role of the male sex hormone (testosterone) and the pituitary gonadotropin controlling its secretion (the luteinizing hormone) in the development of antisocial behaviors in adolescent boys.

-ooOoc-

Review of Literature

CONDUCT DISORDERS AND ANTISOCIAL BEHAVIOR

Definition:

This term describes abnormal behavior which gives rise to social disapproval and distress to people in the child's environment rather than to the child himself (Connell, 1985).

Conduct disorders are characterized by antisocial behavior. ICD-9 defines "disturbances of conduct not elswhere classified" as disorders involving aggressive and distructive behavior. The behavior should not be a part of some other psychiatric disorders, such as a neurotic disorder or a psychosis.

DSM-III-R. States that the essential feature of a conduct disorder is a persistent pattern of conduct in which the basic rights of others or major age-appropriate societal norms or rules are violated. The problem must have existed for 6 months or longer and at least three out of a list of 13 behaviors must be present. The problems are more serious than those seen in oppositional defiant disorders, in which there is a pattern of negativistic, hostile and defiant behavior

without the more serious violations of the basic rights of others that are seen in conduct disorders.

Shamsie (1981) suggested that antisocial behavior may be best regarded as a problem arising from lack of socialization. For whatever reason, the young person has failed to learn, or has not effectively been taught society's norms.

Classification:

The wide variety of clinical features of conduct disorders have led to attempts to divide them. **Hewett & Jenkins (1946)** classified these disorders into socialized, unsocialized and overinhibited groups. These are similar to the subdivisions of the ICD-9 category 312, which are: unsocialized, socialized, compulsive conduct disorder and mixed disturbance of conduct and emotions.

DSM-III has a similar scheme in which conduct disorders are divided into four subtypes: undersocialized aggressive, undersocialized non-aggressive, socialized aggressive and socialized non-aggressive. The undersocialized types are described as failing to establish

a normal degree of affection, empathy or bond with others. They are said to have superficial peer relationships, to be egocentric and manipulative, to lack concern for the welfare of others and to be without guilt or remorse. The socialized types are described as having some attachment to others, such as to their peer groups. They resemble the undersocialized types, however, in that they may be similarly callous or manipulative towards persons to whom they are not emotionally attached. They are described as lacking guilt when these "outsiders" are made to suffer. The behavior of the aggressive types is charaterized by physical violence against others. It may range in severity from vandalism, firesetting, breaking and entering and stealing outside the home involving confrontation with the victim, to rape and murder. Finally, the non aggressive category is used to designate young persons who have violated rules at home or at school. Into this category fall truants, substance abusers, runaways and youngsters who have stolen without having confronted their victims directly. Vandalism and firesetting are also considered non-aggressive in some circumstances (Lewis, 1985).

There is research data supporting a distinction

between socialized and undersocialized disorders (**Hewitt & Jenkins, 1945**; Jenkins, 1973; Field, 1976), though in practice the distinction is not always easy to make (**Barker, 1988**). Also multivariate analyses of symptoms and follow up results of **Robins** (1979a) do not support these subdivisions of conduct disorders.

A simpler system for classifying conduct disorders than that used in DSM III is offered in DSM-III-R, in which three types of conduct disorders are distinguished:

1. The group type: In this category the conduct problems occur mainly as a group activity with peers. Physical aggression may or may not be a feature.

2. The solitary aggressive type: The predominant feature of this category is physically aggressive behavior, usually towards both adults and peers. This is initiated by the person, rather than being a group activity.

3. The undifferentiated type: In this category there is a mixture of clinical features that cannot be classified as either of the above two types.