ACKNOWLEDGEMENT

First of all thanks to ***Allah*** *for blessing this work until it has reached its end.*

I would like to express my deep gratitude to ***Prof. Dr. Eman Ibrahem Abo El Ela,*** *Professor of psychiatry , Faculty of Medicine Ain Shams University, for her unceasing support, her inspiring suggestions and constructive criticism. Her deep knowledge and great experience has a great impact on fulfilling my work.*

I also hold sincere appreciations for the time invested by ***Prof. Dr. Mahmoud Youssef Abo EL ELa ,*** *Professor and Head of phoniatrics, Faculty of Medicine, Ain Shams University, to closely supervise and continuously encourage this work.*

I would like also to highlight the productive role of ***Dr. Nermin Mahmoud Shaker,*** *Professor of psychiatry, Ain Shams University, with her meticulous revision of the manuscript and keen interest to see this work become a success by the great help she gave me, and the great efforts she has done.*

I would also like to thank deeply all the ***phoniatrics staff*** *for their help and support.*

Finally, I would like to express my deepest gratitude to my beloved ***family*** *and my lovely* ***Friends*** *who always support me throughout my life.*

Raneem Hassan Suliman

LIST OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ABBREVIATIONS

ASHA	**:**	**American Speech- Language Hearing Association**
SPSS 17	**:**	**.Statistical Package for Social Sciences 17th version**
ANS	**:**	**Acquired neurogenic stuttering.**
AAP	**:**	**American Academy of Pediatrics**
APA	**:**	**American Psychiatric Association**
ADHD	**:**	**Attention Deficit hyperactive Disorder**
CWNS	**:**	**Children who do not stutter**
CWS	**:**	**Children who stutter**
CBT	**:**	**Cognitive behavior therapy**
C	**:**	**Cooperativeness**
ST1	**:**	**Creative Self-Forgetfulness vs Self-Conscious Experience**
DAF	**:**	**Delayed auditory feedback**
DS	**:**	**Developmental stuttering**
DSM	**:**	**Diagnostic and Statistical Manual of Mental Disorders**
DSM IV TR	**:**	**Diagnostic and Statistical Manual of Mental Disorders 4th edition.-Text Revised.**
DMS IV	**:**	**Diagnostic and Statistical Manual of Mental Disorders, Fourth edition.**
D2	**:**	**Dopamine type 2 receptor.**
FDA	**:**	**Food and Drug Administration**
GILCU	**:**	**Gradual increase in length and complexity of utterances**
HA	**:**	**Harm avoidance**
ICD	**:**	**International Classification of Diseases**
JTCI	**:**	**Junior temperament and character inventory**
M/F	**:**	**Male/female ratio**
MINI-KID	**:**	**Mini international neuropsychiatric interview for**

		children
MAOI	:	Monoamine oxidase inhibitors
NICE	:	National Institute for Health and Care Excellence
NS	:	Novelty seeking
OCD	:	Obsessive compulsive disorders
PD	:	Panic disorder
X2		Pearson Chi Square Test
r		Pearson Correlation
Ps	:	Persistence
PDS	:	Persistent developmental stuttering
PET	:	positron emission tomography
RD	:	Reward dependence
SSRIs	:	Selective Seretonin Reuptake Inhibitors.
ST	:	Self transcendence
SD	:	Self-directedness
SLPs	:	speech-language pathologists
SD		Standard deviation
SCID-II	:	Structured Clinical Interview for DSM-IV-TR Axis II Personality Disorders
SLD	:	Stuttering like disfluencies
SSI-3	:	Stuttering Severity Instrument for Children and Adults.
P&A model	:	The Packman and Attanasio 3-factor causal model of moments of stuttering
TS	:	Tourette syndrome
ST2	:	Transpersonal Identification vs Personal Identification
TCAs	:	Tricyclic antidepressants
TPQ	:	Tri-Dimensional Personality Questionnaire

Introduction

The American Speech- Language Hearing Association (ASHA) defined stuttering as a speech event that contains intraphonemic disruption, part-word repetitions, monosyllabic whole word repetitions, prolongations and silent fixations (blocks). It begins during childhood and in some cases, lasts throughout life. The disorder is characterized by disruptions in the production of speech sounds, also called disfluencies. **(AHSA, 1999)**

ICD-10 classification of mental and behavioral disorders placed stuttering under "Other emotional and behavioral disorders with onset usually occurring in childhood" F98…… and stated that stuttering "F-98.5" is speech that is characterized by frequent repetition or prolongation of sounds or syllables or words, or by frequent hesitations or pauses that disrupt the rhythmic flow of speech. Minor dysrhythmias of this type are quite common as a transient phase in early childhood, or as a minor but persistent speech feature in later childhood and adult life. They should be classified as a disorder only if their severity is such as markedly to disturb the fluency of speech. There may be associated movements of the face and/or other parts of the body that coincide in time with the repetitions, prolongations, or pauses in speech flow. **(ICD-10)**

Stuttering is present due to complex and dynamic cooperation of several factors like genetic predisposition, motor

ability, language skills, cognition and temperament. ***Nippold,1990) (Blood & et Al, 2003).***

Stuttering and other fluency disorders often co-occur with other conditions and disorders. It was discovered that as many as 44% of children who stutter have a concomitant speech or language disorder ***Arndt & Healey, 2001***).. Additional research found that other disorders, such as attention deficit hyperactivity disorder (ADHD), also run concomitant with stuttering at a greater level than in the general population ***(Healey & Reid, 2003)***.Add to that other issues, such as autism spectrum disorders (ASDs), and the likelihood of concomitance is extremely high. Stuttering is also comorbid with other Axis I psychiatric disorders such as, Depression, Conduct disorders, anxiety and anxiety related disorders including social phobia and Obsessive Compulsive Disorders (OCD). ***(Blood et Al, 2007) (Messenger et Al, 2004).***

In the debate about stuttering and psychiatric co-morbidity, a primary conflict rests with sensitive issue of causality for stuttering. Those who allege stuttering has no greater incidence of psychiatric disorders than the general population categorize psychiatric disorders as a natural response to the scrutiny, embarrassment, and social isolation that may occur secondary to stuttering. In a sense, this argument exists to normalize rather than stigmatize stuttering. However, many epidemiologists do not differentiate which disorder (psychiatric or speech) preceded which. Regardless of attribution, the collective research suggests that people who stutter are at greater risk for

collateral problems, which have the potential to add another layer of challenge to their speech fluency efforts and emotional well-being***(Haley, 2009).***

The presence of psychiatric co morbidity with stuttering worsen the disability and cause a negative impact on the subject's academic occupational, social, emotional and psychological adjustment. So, once stuttering is associated with a psychiatric disorder, the clinicians will be confronted with a great challenge of deciding how to diagnose and manage the co-morbid disorder and stuttering when both are identified ***(Alm, 2004).***

Unfortunately, the risk factors of developing co-morbid psychiatric disorder in individuals who stutter and its effect on stuttering severity is somewhat unclear and seems to vary considerably among studies. For this reason, the current study hypothesized the presence of specific psychosocial profile that leads to acquiring psychiatric disorder and that Co-morbid psychiatric disorders have negative impact on stuttering.

Aim of work

The Aim of this study is

1. To study co-morbid psychiatric disorder in children with stuttering

2. To assess the risk factors for developing psychiatric comorbidity in a stuttering children.

3. To elaborate the impact of psychiatric disorders on the severity of stuttering.

Chapter 1
Stuttering

Definition and Types

Stuttering is a generic term that describes speech that does not follow normal, conventional rhythm. In this sense we all stutter. When we are speaking too fast, angry, confused, nervous or surprised, or at loss of words, we get "tongue-tied" and stutter. Speaking too fast , being emotionally charged , or not knowing what to say are stressors that cause us to stutter- to become tongue tied-and this happens to us all. The stressor makes us "flustered" and we stutter. When we become "unflustered", that is when the causes are addressed and removed, our speech returns to its normal cadence and flow. ***(Lavid, 2003).***

Stuttering the medical condition, is termed "developmental stuttering" to differentiate the condition from the occasional stuttering that affects us all. Developmental stuttering is not caused by speaking too fast, anger, confusion, nervousness, surprise, or being at loss for words, and doesn't resolve along with those situations. Speech patterns in developmental stuttering and being tongue-tied are similar, but the causes, course, and treatment are different. These differences define developmental stuttering and distinguish the condition from being tongue-tied ***(Lavid, 2003) .***

Although developmental stuttering is the most common form of stuttering, there are other types of stuttering which are

neurogenic Stuttering and psychogenic stuttering. Neurogenic stuttering is a common type of stuttering occurs when the brain is unable to coordinate all of the different components of the speech mechanism, including the nerves and muscles. Neurogenic stuttering may also occur following a stroke or brain injury. Psychogenic stuttering is believed to originate in the region of the brain that directs thought and reasoning, this rare type of stuttering may affect people with mental illness or those who experience extreme psychological stress or anguish ***(URMC,2013).***

Developmental stuttering, or stammering as the British refer to it, is an observed disruption in the normal fluency and mannerism of speech. **(Lavid,2003)**. According to The American Speech- Language Hearing Association (ASHA) stuttering is a speech event that contains intraphonemic disruption, part-word repetitions, monosyllabic whole word repetitions, prolongations and silent fixations (blocks). It begins during childhood and in some cases, lasts throughout life. The disorder is characterized by disruptions in the production of speech sounds, also called disfluencies ***(AHSA, 1999).***

ICD-10 classification of mental and behavioral disorders placed stuttering under "Other emotional and behavioral disorders with onset usually occurring in childhood" F98…… and stated that stuttering "F-98.5" is speech that is characterized by frequent repetition or prolongation of sounds or syllables or words, or by frequent hesitations or pauses that disrupt the rhythmic flow of speech. Minor dysrhythmias of this type are