



Epidemiology of Gastrointestinal Disturbances in Pervasive Developmental Disorders

*Thesis Submitted for Fulfilment of Requirement of
PhD in Medical Childhood Studies for children
[Childhood and Nutrition].*

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2016

Acknowledgment

First and foremost my deepest gratitude and thanks should be offered to" ALLAH" the most kind and most merciful ,for giving me the strength to complete this study.

I would like to express my sincere gratitude to **Prof. Ghada El Dory** professor of pediatrics Department of Medical Study Institute of Post Graduate Childhood Studies-Ain Shams University for her support and guidance for throughout this study.It really has been an honor to work under her generous supervision..

I acknowledge with much gratitude to **Prof.Ehab Mohamed Eid** professor of Public Health Department Of Medical Study Institute Of Post Graduate Childhood Studies- Ain Shams University For his great efforts and support supervising me all through this study.

I would like to thank **Prof.HanaaHamdy** professor of biochemistry-National Research Center For her great efforts and encouragement through this study.

I would like to thank also **Dr. Inas El Refaei El Alameey** Ass. Prof. in National Research Center for encouragement and support during this study.

I am grateful to all studied infants and children and their care givers who without them this study would not have been accomplished.

Lastly but not means least thanks to my family for continuous support.

List Of Abbreviation

5-HT	Histaminergic
AAC	Alternative or Augmentative and Alternative Communication.
ABA	Applied behavior analysis.
ADHD	Attention Deficit Hyperactivity Disorder
ADI-R	Autism Diagnostic Interview-Revised
ADS	Autism Diagnostic Observation Schedule
AEM	anti-endomysial antibodies
AGA	Anti Gliadin Antibodies
ASD	Autistic Spectrum Disorders.
BDTH2	benzene-1,3-diamidoethanethiol
C4b	Complement Component 4B
CARS	Childhood Autism Rating Scale
CD	Celiac Disease
CD3	Cluster Differentiation3
CD34+	Cluster Differentiation34
CD4	Cluster Differentiation4
DAT	Dolphin Assisted Therapy
DH	Dermatitis Herpetiformis
DIR	Developmental, Individual Differences based, Relationship based.
DMG	Dimethylglycine

Dpp4	Dipeptidyl peptidase IV
DPP-IV	Dipeptidyl peptidase IV
DSM IV	Diagnostic and Statistical Manual of Mental Disorders IV
DTT	Discrete Trial Teaching.
ECT	Electroconvulsive therapy
EEG	Electro Encephalo Gram
EIBI	Early Intensive Behavioral Intervention.
ELISA	Enzyme Linked Immunosorbent Assay
ENS	Enteric Nervous System
FDA	Food and Drug Administration
FMF	Familial Mediterranean Fever
FTT	Failure to thrive
GERD	Gastro Esophageal Reflux Disorder
GF/CF	Gluten Free/Casein Free
GIT	Gastrointestinal
GSE	gluten-sensitive enteropathy
HBOT	Hyperbaric oxygen therapy
HSV	Herpes Simplex Virus
ICD 10	The International Classification of Diseases 10
Ig	Immunoglobulins
IgA	Immunoglobulin A
IgG, C4b	NK-and T-cell
IL-1b, IL-2,	Interleukin -1b ,Interleukin 2

IQ	Intelligence Quotient
LFA,MFA,HF	Low,Medium,High-Functioning Autism
LNH	Lymphonodular hyperplasia
MRI	Magnetic Resonance Image
M-CHAT	Modified Checklist for Autism in Toddlers
MNS	Mirror NeuronsSystem
NK- T-cell	Natural Killer - T Cells
AIC	Anterior Insular Cortex
PDD-NOS	Pervasive Developmental disorders not otherwise specified.
PDDs	Pervasive Developmental disorders.
PEBM	Parent education and behavior management
PEP	Prolylendopeptidase
PRT	Pivotal response therapy or treatment
PUFA	Poly Unsaturated Fatty Acid
RAP	Recurrent abdominal pain
RBS-R	Repetitive Behavior Scale-Revised
RCT	randomized controlled trial
RCD	Refractory celiac disease
SCERTS	Social Communication/ Emotional Regulation/ Transactional Support
SED	Selective Eating Disorders
SGAs	Second-Generation Antipsychotics
SSRI	selective serotonin reuptake inhibitors

TEACCH	Treatment and education of autistic and related communication handicapped children
TgA	anti-transglutaminase
TTFD	ThiamineTeTrahydrofurfuryl disulfide
tTG-IgA,	Transglutaminase immunoglobulin A
U.S.	United State
UK	United Kingdom
US	Ultrasound
UTI	Urinary Tract Infection
Zn, B6,	Zinc –Vitamin B6

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INTRODUCTION

Pervasive developmental disorders are behavioral disorders with onset before 36 months characterized by impairment of social interest and behaviors. Other characteristics include, sensory dysfunction, in appropriate laughing , giggling, little or no eye contact, apparent insensitivity to pain, preference to be alone and many more according to the American psychiatric association (**American psychiatric Association ,1994**).

In the last 20 years, there has been an increase in the incidence of pervasive developmental disorders, unexplained by genetic alone, nor can this increase be secondary to only increased awareness. The etiology of PDDs is complex and usually, the underlying pathologic mechanisms are unknown. **Waterhouse *et al.*, 1996** emphasize the possible impact of a number of post natal factors ranging from environmental toxins to dietary factors.

Wakefield *et al.*, 2002, have suggested that peptides formed through the incomplete breakdown of foods containing gluten and casein derived from dairy product, exhibit direct opiod activity or form ligands for peptidase, which break down endogenous endorphins and enkephalins. Individuals who cannot metabolize gluten produce antigliadin which they can not metabolize further. This A gliadin binds to A and D opoid receptors. These receptors associate with mood and behavior. Gastrointestinal diseases are more common in children with neurological disability (**Sullivan,**

1997) and previous reports describe unexpected intestinal inflammation with low grade colitis (**Toorrent *et al.*, 2002**).

Researchers reported that children have shown mild to dramatic improvement in speech and/or behavior after gluten was removed from their diet. Some also reported that their children have experienced fewer bouts of diarrhea after starting gluten free diet (**Johnson and Myers ,2007**).

Dipeptidyl peptidase IV (DPP-IV) is the only known enzyme to breakdown osmorphine. Dipeptidyl peptidase IV (DDP-IV) appears to be absent or reduced in pervasive developmental disorders. The gene for this enzyme is distal to other suspected pervasive developmental disorders genes on 2 and 3 of 7 and is expressed in the kidney small intestine, liver and the blood brain barriers and has involvement in T-cell activation, also found in the urine were undigested food particles suggesting a leaky gut syndrome. The toxicity of gluten and casein may result from the lack of DPP4 (**Friedman, 2008**).

Opoids like gliadorphin a gluten opoid) and casein opiod are toxic for children with pervasive developmental disorder due to the fact that these children have and abnormal leaky gastrointestinal tract (**Shattockand Whiteley, 2002**).

AIM OF STUDY

The aim of the study is to detect prevalence of gastrointestinal disturbances in pervasive developmental disorders to study determinants of gastrointestinal disturbances and variables of pervasive developmental disorders.

