Social Competencies, Behavioral, Psychological and Cognitive Correlates in Children with Nocturnal Enuresis

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One hundred and ten school age children (110), with DSM- IV diagnostic criteria of Nocturnal Enuresis (NE), were randomly selected from those seeking treatment from pediatric, psychiatry, and urology clinics in Suez Canal University Teaching Hospital and were compared to a sex and age matched control group (n= 110) as regard their social competencies, behavioral problems, cognitive, and psychological characteristics as well as their school performance and achievement. Instruments used included: Conners Rating Scale, Child Behavior Checklist (CBCL), Goodenough test, Token Test for Children, Johns Hopkins Depression Scale, and their mid-year test scores in academic subjects including Arabic language, arithmatic and other subjects. Results revealed that NE was significantly associated with being described by their parents as hyperactive, socially withdrawn, uncommunicative and depressed. Furthermore, children with NE were reported to be less socially competent than the nonenuretic control group. Moreover, NE children were significantly more likely to perform poorly on cognitive tasks of nonverbal intellectual maturation and functional language ability and to obtain significantly lower scores in Arabic language and arithmatic subjects than nonenuretic children.

The results suggest that NE should be considered as a risk factor for comorbid psychiatric and developmental difficulties and those children with NE deserve to receive a comprehensive and integrated neuropsychological & behavioual assessment. The implications of our findings are discussed.

(Egypt.J. Psychiat.,1997, 20: 109- 126).

Introduction

Nocturnal Enuresis (NE) has been highlighted as the most prevalent and chronic of all childhood problems (Collins, 1980) with epidemiological surveys ranging across different countries indicating between 9 -13% of 9 year old children wetting their bed at least once a month (Feehan et al., 1990, Oppel et al, 1968, Rutter et al, 1973, and Verhulst et al, 1985). In a previous report (El - Defrawi, 1995) the prevalence of NE has been estimated to reach 12% in school age children in Suez Canal Area. NE can also prove a devastating experience for children, with a sense of perplexity, humiliation, alienation, and a vulnerability to verbal and physical abuse all particularly evident (Abrasion, et al. 1978, and Anon, 1987 and Butler et al., 1994).

Evidence from epidemiological studies documents an association between enuresis and psychiatric disorders (Swadi, 1996). Epidemiological data show that the numbers of children with deviant behavior is two to four times higher among enuretic boys and three to six times higher among enuretic girls , de-

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pending on age and source of information with regard to behavioral deviance , i.e. parents or teachers. Mikkelsen (1993), among a very small sample of 20 disturbed enuretic children, reported the following diagnoses : depressive disorder, mixed disturbance of adjustment and conduct, mixed anxiety- depressive disorder, generalized anxiety disorder, attention- deficit disorder with hyperactivity, and undersocialized conduct disorder, aggressive type. Jarvelin et al., (1991) documented that NE children exhibited delayed development, such as slower growth and poorer visuomotor and spatial perception than controls.

On the other hand, and of the data presented showing the negative impact of enuresis on social, psychosexual, behavioral and developmental adaptive aspects of children, there is a growing consensus that enuretic children do not suffer from an underlying psychological disturbance as a primary cause of bed wetting and, however, that bed wetting might result in impaired social adaptation later on in life.(Bloom et al., 1994).

It is obvious from the current state of the art on NE that there are different attitudes, both public and professional to the problem, and that the enuretic child deserves an increased research activity in the field, not only to get a better understanding of the pathophysiology behind the problem, but also to improve the treatment.

This study was designed and launched with the objective of detecting the association between NE and social competencies, behavioral, cognitive, academic school performance and psychological disturbances in comparison to nonenuretic children.

Subjects and Methods

This is a case - control study that controls the confounding factors which may affect the outcome (social competencies, behavioral, cognitive, and psychological dysfunction) due to the presence of NE.

The study sample size was decided according to the estimated prevalence of behavioral, cognitive and psychological abnormalities in normal (22%) and the expected in children with enuresis (40%) (Steinhausen and Gobel, 1989), taking the level of significance at the 95% and using Leslie et al., (1991) sample size equation, which resulted in a sample number of 110 in each the study and control groups.

Children referred with NE to the outpatient clinics of pediatrics, urology and psychiatry of Suez Canal University Teaching Hospitals and who met the following criteria were include:

(1) Diagnoses of NE according to the DSM - IV criteria (American Psychiatric Association,1994), (2) Aged between 6-12 years, (3) No urological or neurological cause for the enuresis, (4) Attending mainstream public schools and not schools for retarded or developmentally handicapped children, and (5) Parent and child consent,

110 age and sex matched children with no history of NE or chronic or any physical disability, randomly selected from the pediatric clinic population, were used as controls.

At the initial interview with child and parent the demographic, developmental, psychosocial and NE related items were obtained including methods of parental handling of the problem to reach complete urinary continence.

Instruments used were:

I) For Behavioral Assessment

a- The Conners Parent-Teacher Rating Scale: This is one of the most widely used scales in rating behavior problems and it distinguishes th good

and accepted precision, between normal and behaviorally disturbed children. It has been used widely in assessment and treatment studies of attention deficit hyperactivity disorders (El-Defrawi et al., 1993), and with good reliability and validity (El-Defrawi et al., 1992).

b)The Child Behavior Checklist (CBCL) (Achenbach and Edelbrock, 1983, Achenbach et al, 1989, 1987, Weisz et al., 1987, Verhulst, et al, 1990, Offord, 1993, Frombonne, 1993, and El-Defrawi et al., 1995).This is the most acceptable and widely used behavior checklist. This instrument was initially designed to provide mental health professionals with a reliable means of assessing the behavioral problems and social competencies of children referred for treatment.

It contains 20 social competence items , which cover the child's membership in groups, its participation and skill in sports, school functioning and peer relationships ; and 118 behavior problem items , with 3- point responses of-not very true (score 0) to very true (score2).

Description of this instrument and its application in Egypt, applicability and use in its standardized form are found elsewhere (El- Defrawi et al, 1995 a, b). This scale was used for assessment of behavioral problems and social competencies (adopted version of the scale) with only the items describing the internalizing factors which were according to parent report : a) Anxious (or schizoid), b) Depressed, c) Uncommunicative, d) Obsessive compulsive e) Somatic complaints, and f) Social withdrawal. Internalizing factors according to teacher report form were: a) Anxious, b) Social withdrawal, c) Unpopular, d) Self- destructive, and e) Obsessive compulsive items.

The competence items include three parts :

The frist part entitled "activities " includes : scores for number of sports and number of non- sports hobbies, games and activities , jobs and chores plus the mean score for parents, rating of the amount and quality of participation in each of these categories of activity .

The second part of the competence items entitled " social " includes scores for the number of organization , number of friends, contact with friends , how well the child get along with siblgs, other childern and how he plays alone.

The thrid part the competence items entitled " school " includes parents rating of performance in academic subjects puls reports of special class placement, grade repetition and other academic problems.

The other part of the Child Behavior Checklist , the behavior problems scales comprises 118 behavior problem items which are analyzed into 9 behavior factors and 2 second order factors, internalizing and externalizing .

The internalizing and externalizing factors represent a distinction between fearful, overcontrolled behavior (internalizing) and aggressive antisocial uncontrolled behavior (externalizing) (Ross et al., 1990). The internalizing factors were the factors that have been assessed in this study. The parent score each items by circling 0-if the item is not true for the child , 1-if it is somewhat or sometimes true and 2-if it is often or very true. Means of the total scores of internalizing factore were obtained and compared between the study group and control group .

Total score , nine narrow - band subscale scores (the internalizing are: withrawal, somatic complaints, anxious uncommunicative , depressive, and obsessive compulsive,) obtained by summing the relevant items according-

ing to the 1983 version of the manual (Achenbach1983).

II- The Johns Hopkins Depression Scale (Paramjit et al ., 1990):

It consists of 38- items scale , and was developed from the criteria of DSM-III for the diagnosis of major depressive disorders . The diagnostic criteria were trasformed into descriptions of depressive symptoms, and the questions fall into five major symptom categories: mood, energy , behavior , somatic complaints and vegetative symptoms .

It is a self - roport inventory for parents of childer 5 to 13 years old .

It is used as screening instrument and diagnostic tool of children suffering from major depressive disorders .

II'- Cognitive Assessment

a) Goodenough Test (Draw-A-Person Test): According to Lezak (1983) Goodenough test and its revision utilizing drawings of a man and a woman have provided the most popular systems for estimating developmental level in the United States. The quality and complexity of children's drawings increase with age at a sufficiently regular pattern.

However, because drawing tests are relatively independent of language skills, they can be used to obtain rough estimates of the general ability of children and adults with verbal impairment. Each test was administered with verbal instructions to produce the desired drawing of a man and a woman, neither test was timed. Human figure drawings provide the neuropsychologist with a sample of behavior that is not only relatively culture free and language independent but also sufficiently complex and closely related to normal human development which gives some measure of the intellectual endowment of children whose ability to draw has remained essentially intact. The test measure intellectual maturation in the child and the level of intellectual organization of the visuographic response when used in the neuropsychological assessment of children. It may provide an indication of brain damage (Gardner, 1985).

b) The Token Test for Children: The Token Test for Children (Disimoni , 1978) is a rapid and effective measure for assessing subtle receptive language dysfunction in childern . Lass and Golden (1975) sumarized the values of this test in its ability to sample various levels of linguistic difficulties within a relatively brief period of time without the use of extensive memorization . The test is divided into five parts , each one presenting progressivly longer and more complex, uses 5 large cricles, 5 large squares 5 small circles, and 5 small squares in 5 colors (blue, green, yellow, white, and red). Before starting each formal test administration, examiner informally tested each child in order to be certain that the child understood the meaning of the words circles and squares, large and small, and could identify colors. Only the first fourty (40) items in the first four parts were used, and a value of one point was given for each correct response to a test command for a maximum of 40. Special tables were used to obtain the Z score according to age of the child tested.

IV- Academic Achievement Assessment:

Academic performance and school achievement were assessed using the child's own mid- year test score in Arabic language, arithmetic, writing or spelling (when available) and scores in other subjects when available (e.g. social studies and sciences). Moreover, each child was assessed regarding failure in academic subjects, repeating grades, school attendence and continuation or discontinuation.

All cognitive , neuropsychological intellectual and psychological behavioral measures, scales and tests were obtained blindly to the child's status and psychiatric condition (whether enuretic or control).

Results

Table (1) shows the age and sex distribution of both group (NE and controls). In table, (2). Children with NE were most likely to be described by their parent to have problems with them and with their sibling and other children ($p< 0.05$), to participate less in house chores table, (3) ($p< 0.05$), to have no or one friend only table (4) ($p<0.05$), to have difficulties playing and working by themselves (table, 5) ($P<0.05$), to have no hoppies ($P<0.05$), to be less skillful in hoppies ($p<0.05$), to discontinue schooling (table, 6) ($p<0.05$), to fail in school ($p<0.05$), to receive remedial education (table 7) ($p<0.05$) to have failure and less than average performance in almost all academic subjects (Arabic reading, spelling, writing, and arithmatic subjects) (table, 8) ($p<0.05$), to have problems participating, practicing or skilling sport activities ($p<0.05$) (table, 10).

72.7% children with NE have primary NE, 55.5% of them were either first or second in birth order, 30%were from families composed of three to four persons, 61.8% have no reported family history of NE, and the age of sphincteric control in enuretic relatives ranged from the sixth year (11.9%), the seventh year (33.3%), the eighth year (21.5%) and after the age nine years (33.3%), 88.2% have no associated urinary complaints, and 64.5% were reported to have have deep sleep and to be awakened with difficulty, 96.4% have had their toilet training, 91.5% were awakened at night for voiding of urine, and 58.4% were punished by parents to achieve dry bed.

Table (11) showed that children with NE were reported to exhibit significant disruptive behavioral problems ($p<0.05$), to be reported to be more uncommunicative, depressed and soially withdrawn, table (12) ($p<0.05$), to be described as more likely depressed using Johns Hopkins scale ($p<0.05$), table, (13), to score poorly on nonverbal cognitive intellectual tasks table (14), ($p<0.05$) and to perform poorly on functional language listening ability test ($p<0.05$) table(15).

Table (1)
Distribution of Children with and without Enuresis According to Age and Sex

	Item	Enuretic (N= 110)	%	Non-enuretic (N= 110)	%
A	Sex:				
	-Boys	72	65.5	69	62.7
	-Girls	38	34.5	41	37.3
B	Age years	(N=110)		(N=110)	
	6-	32	29.1	13	11.8
	7-	22	20.0	10	9.1
	8-	18	16.4	25	22.7
	9-	12	10.9	20	18.2
	10-	9	8.2	15	13.6
	11-	9	8.2	8	7.3
	12-	8	7.3	19	17.3

Table (2)
Comparison between Children with and without Euresis according to Social Competence

	Item	Enuretic		Non-enuretic		Statistical Significance
		N= 110	%	N= 110	%	
A -	**Relationship with parents:**					
	-Worse	19	17.3	9	8.2	S.*
	-About the same	73	66.4	71	64.5	
	-Better	18	16.4	30	27.3	
B -	**Getting along with siblings:**	(N=101)		(N=99)		
	-Worse	27	26.7	10	10.1	S.*
	-About the same	69	68.3	61	61.6	
	-Better	5	5.0	28	28.3	
C -	**Getting along with other children:**	(N=110)		(N=110)		
	-Worse	18	16.4	7	6.4	S.*
	-About the same	82	74.5	79	71.8	
	-Better	10	9.1	24	21.8	

*S = Statistically significant (Pvalue<0.05)

Table (3)
Comparison between Children with and without Enuresis According to Participation in House Chores

	Item	Enuretic		Non-enuretic		Statistical Significance
		N	%	N	%	
A -	**Participation in house chores:**	(N= 110)		(N=110)		
	-Participation	74	67.3	98	89.1	
	-No participation	36	32.7	12	10.9	S.*
B -	**Degree of participation in house**					
	Chores:	(N= 74)		(N= 98)		
	-Don't know	1	1.3	6	6.1	
	-Less than average	18	24.3	20	20.4	
	-Average	46	62.2	40	40.8	
	-More than average	9	12.2	32	32.7	

*S = Statistically significant (Pvalue<0.05)

Table (4)
Distribution of Children with and without Enuresis Regarding Social Activities with Friends

	Item	Enuretic		Non-enuretic		Statistical Significance
		N= 110	%	N= 110	%	
A -	**Number of friends:**					
	-None	8	7.3	3	2.7	S.*
	- One friend	14	12.7	6	5.4	S.*
	- Two or three friends	60	54.5	39	35.5	
	-Four or more	28	25.5	62	56.4	
B -	**Frequency of social involvement with their friends:**	(N=102)		(N=107)		
	-Less than one time	5	4.9	8	7.5	
	-One to two times	57	55.9	47	43.9	
	-Three or more times	40	39.2	52	48.6	

*S = Statistically significant (Pvalue<0.05)

Table (5)
Use of Lesiure Time in Children with and without Enuresis

	Item	Enuretic		Non-enuretic		Statistical Significance
		N=110	%	N=110	%	
A -	**Playing and working by themselves:**	N		N		
	-Worse	19	17.3	11	10.0	S.*
	- About the same	87	79.1	75	68.2	
	- Better	4	3.6	24	21.8	
B -	**Presence of hobbies:**	(N=110)		(N=110)		
	-Had hobbies	76	69.1	92	83.6	
	-No hobbies	34	30.9	18	16.4	S.*
C -	**Time spent in hobbies:**	(N=76)		(N=92)		
	-Don't know	2	2.6	6	6.5	
	- Less than average	31	40.8	18	19.6	S.*
	-Average	26	34.2	36	39.1	
	-More than average	17	22.4	32	34.8	
D -	**Degree of skillfullness in their hobbies:**	(N=76)		(N=92)		
	- Don't know	3	3.9	9	9.8	
	- less than average	34	44.7	12	13.0	S.*
	- Average	24	31.6	38	41.3	
	- More than average	15	19.7	33	35.9	

*S = Statistically significant (Pvalue<0.05)

Table (6)
School Performance of Children with and without Enuresis

	Item	Enuretic		Non-enuretic		Statistical Significance
		N=110	%	N=110	%	
A -	**School staus:**	*(N=110)*		*(N=110)*		
	-At school	102	92.7	107	97.3	
	- Out of school	8	7.3	3	2.7	S.*
B -	**Presence of school failure:**	*(N=102)*		*(N=107)*		
	-Failure	25	24.5	11	10.3	S.*
	-No failure	77	75.5	96	89.7	
C -	**Year of school failure:**	*(N=25)*		*(N=11)*		
	- Fourth primary school yr.	15	20.0	2	18.2	
	- Fifth primary school yr.	6	24.0	1	9.1	
	- First preparatory school yr.	0	0.0	3	27.3	
	- Scecond preparatory school yr.	3	12.0	1	9.1	
	- Third preparatory school yr.	11	44.0	4	36.4	
D -	**Reason of school failure:**	*(N=25)*		*(N=11)*		
	- Weak learning abilities	17	68.0	7	63.6	
	- Neglicance of studying lessons	8	32.0	4	36.4	

*S = Statistically significant (Pvalue<0.05)

Table (7)
Distribution of Children with and without Enuresis
Regarding Remedial Educational Groups

	Item	Enuretic		Non-enuretic		Statistical Significance
		N=110	%	N=110	%	
A	**Involvement in remedial education groups:**	(N=102)		(N107)		
	-Involved	62	60.8	45	42.1	S.*
	-Not involved	40	39.2	62	57.9	
B	**Type of remedial educational group:**	(N=62)		(N=45)		
	-Arabic	18	29.0	11	24.4	
	-Arithmatic	20	32.3	10	22.2	
	-English	15	24.2	17	37.8	
	-others	9	14.5	7	15.6	
C	**Cause of participation in remedial educational groups:**	(N=62)		(N=45		
	-Poor educational performance	20	32.3	13	28.9	
	-Seeking higher educational performance	25	40.3	17	37.8	
	-Difficulties in understanding lessons	17	27.4	15	33.3	

*S = Statistically significant (P value<0.05)

Table (8)
Reported Performance of Children with and without Enuresis in Academic Subjects

	Item	Enuretic		Non-enuretic		Statistical Significance
		N=110	%	N=110	%	
A -	**Performance in Arabic reading subject:**	*(N=02)*		*(N= 107)*		
	-Failure	9	8.8	4	3.7	S.*
	- Less than average	12	11.8	3	2.8	S.*
	- Average	29	28.4	28	26.2	
	-More than average	52	51.0	72	67.3	
B -	**Performance in Arabic spelling subject:**	*(N=102)*		*(W=107)*		
	-Failure	14	13.7	4	3.7	S.*
	-Less than average	15	14.7	8	7.5	S.*
	-Average	29	28.4	31	29.0	
	- More than average	44	43.1	64	59.8	
C -	**Performance in Arabic writing subject:**	*(N=102)*		*(N=107)*		
	- Failure	6	5.9	2	1.9	S.*
	- Less than average	11	10.8	5	4.7	S.*
	- Average	28	27.5	34	31.8	
	- More than average	57	55.9	66	61.7	
	Difficulties in arithmatic skills:	*(N=102)*		(N=107)		
	- Failure	10	9.8	4	3.7	S.*
	- Less than average	6	5.9	2	1.9	S.*
	- Average	45	44.1	39	36.4	
	- More than average	41	40.2	62	57.9	

*S = Statistically significant (P value<0.05)

Table (9)
Comparison between Children with and without Enuresis as Regards School Problems

	Item	Enuretic		Non-enuretic		Statistical Significance
		N=110	%	N=110	%	
A -	**Presence of other school problems****	*(N=102)*		*(N=107)*		
	-Present	37	36.3	22	20.6	S*
	- Not present	65	63.7	85	79.4	
B	**Onset of school problems:**	*(N=37)*		*(N=22)*		
	- Since 1 yr.	9	24.3	13	59.1	
	- Since 2 yrs.	9	29.3	5	22.7	
	- Since 3 yrs.	2	5.4	2	9.1	
	- Since 4 yrs.	8	21.6	0	0.0	S*
	- Since 6 yrs.	9	24.3	2	9.1	S*
C	**Continuity of school problems:**	*(N=37)*		*(N=22)*		
	- Ended	26	70.3	15	68.2	
	- Not ended	11	29.7	7	31.8	
D	**Time of ending of school problems:**	*(N=26)*		*(N=15)*		
	- Since 1 yr.	14	53.8	10	66.7	
	- Since 2 yrs.	12	46.2	5	33.3	

*S = Statistically significant (P value<0.05)
** other school problems = worse relationship with teachers, schoolmates and poor performance in other academic subjects .

Table (10)
Sports Activities in Children with and without NE

	Item	Enuretic		Non-enuretic		Statistical Significance
		N=110	%	N=110	%	
A	**Joining sport clubs:**	*(N=110)*		*(N=110)*		
	-Joining	17	15.5	32	29.1	S*
	- Not Joining	93	84.5	78	70.9	
B	**Degree of participation in sport clubs:**	*(N=17)*		*(N=32)*		
	- Don't know	2	11.8	21	65.6	
	- less active	8	47.1	2	6.2	S*
	- Active as average	3	17.6	3	9.4	
	- More active	4	23.5	6	18.8	
C	**Actual sports practice:**	*(N=110)*		*(N=110)*		
	- Practicing	71	65.5	89	80.9	
	- Not practicing	39	35.5	21	19.1	
D	**Degree of skilfullness in sports activities:**	*(N=71)*		*(N=89)*		
	- Don't know	13	18.3	14	15.7	
	- Less than average	12	16.9	4	4.5	S*
	- Average	28	39.4	35	39.3	
	- More than average	18	25.4	36	40.4	
E	**Time spent in sports activities:**	*(N=71)*		*(N=89)*		
	- Don't know	3	4.2	4	4.5	
	- less than average	3	4.2	13	14.6	
	- Average	47	66.2	40	44.9	
	- More than average	18	25.6	32	36.0	

*S = Statistically significant (P<0.05)

Table (11)
Reported Presence of Behavioral Problems in Children with and without Enuresis Using the Arabic Version of Conner's Scale (Cut-off point > 15)

Item	Enuretic		Non-enuretic		Statistical Significance
	(N=110)	%	(N=110)	%	
Conner's score:					
≥ 15	27	24.5	15	13.6	S*
< 15	83	75.5	95	86.4	

*S = Statistically significant (P <0.05)

Table (12)
Comparison of Means (± SD) of Items of Internalizing Problems of Child Behavior Checklist asReported by Parents among Children with and without Enuresis

Item	Enuretic Means (±SD)	Non-enuretic Means (±SD)	Statistical Significance
Internalizing problems:			
Somatic complaints	2.5(±1.397)	2.48(±1.95)	
Uncommunicative*	5.8(±2.4)	4.6(±3.2)	S*
Depressed*	10.8(±5.1)	9.2(±4.4)	S*
Social withdrawal*	3.8(±1.7)	2.3(±1.1)	S*
Schizoid or anxious	4.6(±2.30)	4.1(±2.3)	

* S = Statistically significant (P value > 0.05)

Table (13)
Reported Depressive Symptoms Using the Johns Hopkins Depression Scale among Children with and without Enuresis (according to age and sex).

	Item	Enuretic			Non-enuretic			Statistical Significance
		N=110	%	Mean (±SD)	N=110	%	Mean (±SD)	
A	Boys:	n			n			
	6-	24	33.3	43.708(±15.110)	7	10.1	41.714(±13.475)	S*
	7-	22	30.5	39.636(±12.446)	10	14.5	38.600(±4.142)	
	8-	9	12.5	40.444(±8.791)	20	29.0	38.200(±7.388)	S*
	9-	4	5.6	36.250(±5.795)	8	11.6	33.125(±2.949)	S*
	10-	9	12.5	37667(±3.162)	12	17.4	37.167(±5.306)	
	11-	4	5.6	45.500(±14.177)	0	0.0	----------	----
	12	0	0.0	----------	12	17.4	44.583(±9.728)	----
B	Girls	n			n			
	6-	8	21.1	45.750(±750)	6	14.6	36.167(±4.916)	S*
	7-	0	0.0	42.222(±11.649)	0	0.0	----------	---
	8-	9	23.7	47.375(±19.316)	5	12.2	39.800(±5.718)	S*
	9-	8	21.1	----------	12	29.3	36.667(±2.774)	S*
	10-	0	0.0	48.800(±19.018)	3	7.3	35.33(±3.055)	--
	11-	5	13.2	44.429(±19.025)	8	19.5	33.750(±2.493)	S*
	12-	8	21.1	----------	7	17.1	37.500(±13.416)	S*

* S = Statistically significant (P value > 0.05)

Table (14)
Distribution of the Studied Enuretic and Non-enuretic Groups According to Cognitive Dysfunction (non-verbal intelligence) as Measured by Goodenough test (Goodenough score < 70).

Item	Enuretic		Non-enuretic		Statistical Significance
	N=110	%	N=110	%	
Score:	n		n		
<70	20	18.2	9	8.2	S*
≥15	90	81.8	101	91.8	

*S = Statistically significant (P value<0.05)

Table (15)
Presence of Language Dysfunctions in Children with and without Enuresis (according to age and sex) Using the Token Test for children

	Item	Enuretic			Non-enuretic			Statistical Significance
		No=110	%	Mean (±SD)	No=110	%	Mean (±SD)	
A	Boys:	n			n			
	6-	24	33.3	499.91(±5.370)	7	10.1	502.329(±1.662)	S*
	7-	22	30.5	501.091(±3.549)	10	14.5	501.690(±1.908)	
	8-	9	12.5	499.822(±4.066)	20	29.0	501.370(±3.740)	S*
	9-	4	5.6	502.775(±0.862)	8	11.6	507.125(±4.149)	S*
	10-	9	12.5	494.611(±8.486)	12	17.4	500.067(±5.179)	S*
	11-	4	5.6	501.125(±3.981)	0	0.0	----------	-----
	12-	0	0.0	----------	12	17.4	500.133(±4.889)	-----
B	Girls	n			n			
	6-	8	21.1	496.213(±9.000)	6	14.6	501.283(±1.098)	S*
	7-	0	0.0	----------	0	0.0	----------	----
	8-	9	23.5	500.600(±7.406)	5	12.2	502.056(±2.111)	S*
	9-	8	21.1	499.892(±5.234)	12	29.3	499.512(±3.640)	
	10-	0	0.0	----------	3	7.3	495.967(±5.312)	---
	11-	5	13.2	495.640(±7.063)	8	19.5	498.512(±7.057)	S*
	12-	8	21.1	499.686(±4.218)	7	17.1	500.213(±3.322)	

*S = Statistically significant (P value<0.05)

Discussion:

As with most human behavior, the causality of bed wetting is not simple, it consists of multiple and simple factors interrelated in various ways. Most cases of NE appeared unexplained, but it is widely believed that organic, genetic, developmental, psychological and socio-cultural factors are involved (Krantz et al., 1994).

Our current study is a case-control research with a large number of randomly selected children to ensure even distribution between both groups of the background variables that could affect the outcome, i.e. behavioral, cognitive, and psychological characteristics.

Our results have shown that approximately 40% of the enuresis groups have a family history of NE, this can be explained on the basis of both biological and experiential factors acting separately or in conjunction (Rittig,1996). Children with NE tend to show reduced social competencies and poorer quality of life compared to normal (Swadi, 1996). In discussing the impact of enuresis on the psychosexual maturation of children Graziottin and Chiozzd., (1994) have pointed out to prolongation of the attachment phase, increased difficulty in separating from the mother, delayed autonomy attainment, ambivalence towards dependence, vulnerable and insecure sex identity, and reduced self esteem.

Children with NE were rated by their parents to have significantly more behavioral difficulties and uncontrolled hyperactive behavior than enuretic children (uncommunicative, social withdrawal and depressive symptoms). This is highly supported by similar findings of Couches et al. (1989) who reported that children with NE have quantitative difference in the number of behavioral symptom and that a higher proportion of enuretic children were maladjusted than their dry counterparts. Also, in a recent study by Ferguson and Horwood (1995) bed wetting after the age of 10 years was associated with an increased risk for conduct problems, attention deficit problems and anxiety withdrawal symptom and withdrawals. In United Arab Emarates, Swami (1996) showed that while younger enuretic children exhibited little difference in emotional measures from controls, older children with NE were rated by their parents and teachers to have increased behavioral problems.

One explanation for our findings is that children with NE who seek treatment or help for enuresis are under more stress and have more behavioral symptoms than those who do not. Couchells et al (1986) and Moffat (1989) have pointed out that the clinical group with NE have more conduct problems and more immature behavior than nonclinical enuretic. However, Norgaard (1991) has pointed out that the cause or nature of the association between psychiatric disorders and enuresis is not known, although each shares common antecedents.

The association of behavioral problems with NE has been reported in Egypt by El-Fiky et al. 1990 who demonstrated that about 6% of enuretic children also have attention deficit hyperactivity syndrome and/ or arousal deficit. This association could be explained on the bases that behavioral and social difficulties of enuretic children mainly result from the primary illness leading to poor self-image, decreased self-esteem, social embarassment and restriction (Hindi et al, 1995). Furthermore, it could be that because of the negative attitude and bias of the family towards enuretic children parents tend to report positively on behavioral symptoms and to consider those children difficult and problematic (Jave-

lin et al, 1990). Enuretic children have also exhibited more depressive symptoms and were reported by their parents to be more depressed than nonenuretic children which is similar to Hindi et al. (1995) findings that enuretic children are more immature, less-self reliant, less ambitious and insecure than nonenuretic controls. Self-esteem in children has a direct impact on the affective state which in turn influences motivation and interest in various activities this can lead to social isolation which has been recognized as an antecedent to psychiatric problems in children (Hindi et al, 1996). On the other hand, Verhulst et al (1985) reported that the majority of enuretic children do not have coexisting psychiatric problems, but psychiatric disorders are twice as common in this group as general population.

Another important finding in our study is that children with NE performed poorly on tests of cognitive functions than non enuretic children. For example while 18% of enuretic children appeared to score below the normal range on nonverbal intellectual test (Goodenough), only 8%, of nonenuretic children did so ($p<0.05$). Steinhausen and Goblet (1989) have reported a significant difference in I.Q. performance between enuretic and nonenuretic child psychiatric patients. Although this finding is suggestive of a possible biological vulnerability of NE children and a highly selective sample. Children with NE exhibit poorer visuomotor and spatial perception than control (Jarvelin, 1991).

In support of the finding that enuretic children performed poorly on cognitive intellectual tests, is the statistically significant lower means scored by enuretic children on language tests (Token Test) than nonenuretic control group, which suggest a subtle language dysfunction associated with enuresis. Language abilities and skills are one of the higher cortical function that is extremely sensitive to biological conditions interfering with normal development. For example, on studying language comprehension (using the token test for children), Mahmoud (1995) has found a highly statistical significant difference between nourished and malnourished groups of children suggesting that the token test is a sensitive measure of subtle language deficits. This could be partly explained on the basis that it is possible that only severely affected children with enuresis who consume medical outpatient services seeking treatment for their sphincteric dyscontrol problem show resistant and severe subtype of NE that is associated with neuropsychological deficts. Thus the enuretic group could appear to be biased in the direction of a more biologically vulnerable and heavily loaded cases with developmental factors.

In support of this possibility is the point raised by Al-Kuwaiti (1995) that enuretic children have generally delayed developmental patterns than non - enuretic children. If this is true, i.e. with more evidence of the developmental basis of enuresis, NE should be classified on Axis II for specific developmental disorders in a similar way language and academic (school) disorders are classified as specific developmental disorders.

Our interesting finding was that children with NE exhibited a statistically significant association related to academic underachievement in reading, writing, spelling and arithmatic school skills than nonenuretic controls. This is supported by-and is similar to-studies showing that NE is significantly associated with specific developmental disorders (reading, writing, spelling and arithmatic skills) and with significantly lower full - scale and verbal I.Qs. than in nonenuretic normal controls. In addition,

Kaplan and Sadock (1989) have pointed out that children with NE were about twice as likely to have concomitant developmental delays as were dry children. They explained these findings on the basis that these abilities and normal bladder control are influenced by neuromuscular and cognitive developments, so difficulties in one or more of these areas may delay urinary continence. The link between enuresis and developmental delays which are also linked to psychopathology, would suggest that there is a common underlying maturational factor that predisposes vulnerable children to manifest both behavioral disturbances and enuresis (Devlin, 1992)

Furthermore, NE group was significantly associated with school failure which could be explained by the previous two findings of poor performance on tests of cognitive functions leading to reduced I.Q. scores and because of increased association with learning difficulties and disabilities leading to failure to work up to full potential and resulting in school failure and repeating grades. Future studies should investigate the impact of treatment received for NE on behavioral and school performance.

NE and associated behavioral, cognitive, and psychological difficulties could by explained in biological terms and understood as a sign of neuropsychological neurodevelopmental and neurobehavioral disturbances. This is supported by the recent findings of the most promising area of investigation of biological factors which is sleep pattern. Parents of children with NE and investigators of sleep patterning often describe those children as very heavy sleepers compared to their nonenuretic siblings (Scharf and Jennings, 1988). This is supported by our findings that 64.5% of children with NE were described by their parents as deep sleepers. However, there is some evidence that the nature of the behavioral distubance in enuretic children is non-specific (Mikkelsen 1993) and that no physiological marker can be found that reliably differentiate psychologically disturbed from non-disturbed enuretic children (Cochat et al, 1994).

Gandhi (1994) has pointed out that the type of psychiatric disorder associated with enuresis has important implications for the choice of treatment intervention and outsome. Certainly, symptom - oriented behavioral interventions (e.g., bell and pad training) will not be sufficient to treat enuretic children who, in addition, have highly complex psychiatric disorders, combination of different treatment interventions is warranted for these conditions, while behavioral techniques clearly indicated and are effective in monosymptomatic enuretic children, for this reason, a comprehensive psychiatric, behavioral, developmental and neuropsychological assessment should be done for children presenting with NE. Furthermore, the outcome of enuretic may differ with regard to whether or not additional psychiatric problems exist (Lewis, 1991). Follow up studies on the continuation of the presence of psychiatric problems in different groups of NE children who received treatment for the enuresis and those who did not, should be carried out.

In conclusion , our results suggest that children with NE who seek treatment are at risk to have an assoiated impairment in their social competencies, parental and teacher's reports indicating high level of behavioral difficulties, tend to perform poorly on cognitive and intellectual tasks of nonverbal and language skills, to be described with significantly more depressive symptoms , and to obtain a sgnificantly lower scores on academic

subjects possibly learning difficultis, are prone to school failure and poor academic performance which might indicate the need for educational remedies than normal controls. Those children with NE should recevie a comprehensive and integrated psychosocial, neuropsychological and educational assessment . Moreover, future research should investigate the follow up response of the associated social, psychiatric and educational problems when NE is being the focus for treatment.

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Corrélation Psychologique , Behavioriste , Congnitive et Sociale chèz les Enfants Souffrants de l'énurésie Nocturne

On a choisix au hasard 110 enfants à l'âge de l ' écôle diagnosés selon le "DSM-IV" comme ayant une Enusésié Nocturne. Cette échantillon a été choisie de la clinique psychiatrique, urologique et pédiatrique de l' université du Canal El Suez , et a été comparé avec un groupe témoin de même age et sex (110) concernat leurs problèmes behavioristes , leurs charactères psychologiques et congnitives , leurs compétences sociales , et aussi leurs réalisations à l 'écôle . Les résultats ont démontré que l'énurésie nocturne doit être considéré comme un facteur de risque pour avoir d'autres difficultés psychiatriques et developmentalles chez ces enfants.

الكفاءه الاجتماعية، اضطرابات السلوك، الاختلالات المعرفيه والنفسية، التحصيل والانجاز الدراسى فى الأطفال المصابين ببلل الفراش

تهدف هذه الدراسة إلى التعرف على المصاحبات الاكلينيكية لاضطراب بلل الفراش فى عينة من الأطفال فى سن ٦ - ١٢ سنه فى مدينة الاسماعيلية من المترددين على عيادات طب الأطفال والطب النفسى والمسالك البولية بالمقارنه بعينه ضابطه متماثله فى السن والنوع والعدد.

وقد تم اختيار عينه عشوائية يبلغ قوامها ١١٠ طفلاً بالإضافه إلى مجموعة ضابطة متماثله فى العدد (١١٠ طفلاً) وتم تطبيق مقياس كونرز لاضطراب فرط النشاط وقصور الانتباه ومقياس وصف سلوك الطفل و مقياس جون هويكنز للاكتئاب فى الاطفال - اختبار جود أنف للذكاء غير اللفظى واختبار القطع للاطفال لتقييم المقدره اللغويه الاستقباليه - وبالإضافه إلى ذلك تم استخدام درجات اختبارات نصف العام الدراسى فى اللغه العربية والحساب كمقياس للتحصيل المدرسى بالإضافه إلى المواد الأخرى.

وقد أظهرت نتائج المقارنه بين الأطفال المصابين ببلل الفراش والعينه الضابطه أن أمهات وآباء المجموع الأولى (بلل الفرش) قد سجلوا وقرروا ارتباطاً ملحوظاً وذا دلاله احصائية يشير إلى انخفاض الكفاءه الاجتماعية من حيث العلاقه بالوالدين والأخوه والأصدقاء والاشتراك فى أداء الأعمال المنزليه وعدد الأصدقاء واللعب وأنشطه أوقات الفراغ والهوايات - وإلى عدم الانتظام فى الدراسة ومع القابليه للرسوب الدراسى والحاجه إلى الدروس الخصوصيه والمساعده ومع الصعوبه التعلميه فى التحصيل فى جميع المواد الدراسية (اللغه العربيه من قراءه وكتابه والحساب) إلى وجود مشاكل مع المدرسين والمواد الدراسية الأخرى ومع انخفاض معدل ممارسه الانشطة الرياضية والاشتراك فيها ووجود إضطراب سلوكى فى شكل فرط النشاط وقصور الانتباه ووجود أعراض ترجح الإنعزال الاجتماعى والاكتئاب وعدم التواصل مع الأخرين، بالاضافه إلى وجود إرتباط ذا دلاله احصائية مع الأداء على اختبار جود أنف يشير إلى انخفاض فى محصلات الذكاء غير اللفظى فى هؤلاء الأطفال، وكذلك انخفاض الأداء على اختبار المقدره اللغوية الاستقبالية الانصاتيه الوظيفية وذلك المقارنه بالمجموعة الثانية الضابطه.

وتناقش الدراسة النتائج والاحتمالات الثانويه والدلالات وتستعرض التطبيقات الاكلينيكية وتنادى بأن هؤلاء الأطفال الباحثين عن علاج لبلل الفراش يستحقون أن تجرى لهم الفحوصات والتقيمات الطبيه النفسية السلوكية والقياسات النفسية المعرفيه بطريقة شامله.