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2
3 **Effect of maternal tolerance on behavioral problems in children with**
4 **enuresis**

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9
10 **Abstract**

11 **Objective:** To determine the effect of maternal tolerance on behavioral problems in
12 children with enuresis.

13 **Method:** The cross-sectional descriptive study was conducted from January to
14 November 2018 at the outpatient departments of three hospitals in Lahore and Sialkot
15 district of the Punjab province in Pakistan. The sample comprised of mothers aged 23-
16 50 years having children with enuresis visiting one public-sector tertiary-care hospital
17 and two private-sector secondary-care hospitals. Data was collected using the Tolerance
18 Scale and the Children Behavioural Questionnaire and was analysed using SPSS 21.

19 **Results:** There were 80 mothers with a mean age of 34.53 ± 4.89 years and as many
20 children with a mean age of 8.16 ± 2.36 years. Maternal intolerance was positively and
21 significantly correlated with rule-breaking ($p=0.02$) and aggressive behaviour ($p=0.01$)
22 in children with enuresis. Maternal intolerance was a significant and positive predictor
23 of rule-breaking behaviour ($p=0.02$), aggressive behaviour ($p=0.001$) and attention
24 problems ($p=0.01$) in the affected children.

25 **Conclusion:** Maternal intolerance and hostile attitudes towards children with enuresis
26 was seen to be leading to secondary behavioural and emotional difficulties.

27 **Key Words:** Enuresis, Maternal tolerance, Child health care, Child behavioural
28 problems.

29 **Introduction**

30 Enuresis, commonly known as bed-wetting, is an elimination disorder as per the fifth
31 edition of the Diagnostic and Statistical Manual for Mental Disorders issued by the
32 American Psychiatric Association (APA) in 2013¹. Elimination disorders are in most
33 cases identified in children or adolescents. Enuresis is characterised by repeated failure
34 to restrict urination on bed or in clothes regardless of whether it is voluntary or not.¹ It
35 has been established that nocturnal enuresis is the most widespread and prolonged
36 disorder of childhood.² It is also the most frequently reported problem in school
37 examination settings.³ Many epidemiological surveys on the condition have been
38 conducted all over the world,⁴⁻⁷ including Pakistan.⁸ However, the inconsistency of the
39 type of methodology utilised in these researches has negatively impacted comparison of
40 the results.

41 The attitudes and apprehensions of parents, especially mothers, regarding enuresis
42 influence the child's development. Parents' beliefs regarding bed-wetting and its causes
43 have a significant effect on their relationship with their children. This in turn impacts
44 the psychosocial development of the child. Lack of insight and awareness regarding
45 enuresis may cause the parents to develop unrealistic expectations of their child. They
46 may compare their child's development with those of other children not considering
47 individual differences in the speed of development among children. This might lead the
48 parents to believe that their child is lazy and disobedient, thus subjecting him/her to
49 undue aggression, neglect, punishment, and even abuse.⁹

50 One study named hostile parental attitudes towards children with enuresis as a potential
51 cause of poor compliance and early withdrawal from treatment procedures.¹⁰ A number
52 of parents develop intolerance and become distressed, especially when the affected child
53 is well beyond the developmental age of five years. In this situation, the attitude of the
54 parents change and their worries start to converge on their own problems. These
55 concerns include laundering, taking care of the odour, financial stress etc. At this stage,
56 they assume that bed-wetting is something which can be controlled by the child. This
57 leads to surfacing annoyance and a strict disciplinary method of coping.¹¹ The

58 interaction between the child and the parent suffer because of this, resulting in increased
59 tensions among the household members and even physical abuse.¹²

60 Age-appropriate bladder control is crucial for a healthy life and emotional well-being.
61 Difficulty in achieving bladder control can result in substantial psychological distress
62 in children, and this can affect their emotional and behavioural adjustment.^{13,14} A large
63 number of studies have recapitulated the emphasis of detrimental effects bed-wetting
64 has on growing children.^{12,15,16} Moreover, sufficient evidence exists for the high rate of
65 prevalence of emotional disorders in the pool of children having enuresis, particularly
66 those who wet themselves in the daytime.^{17,18} These affected children are also vulnerable
67 to developing skin-related conditions, such as sore and inflamed skin and urinary tract
68 infections (UTIs).^{13,19}

69 In Pakistani society, like most Asian and Middle Eastern societies, punishing a child in
70 order to discipline him/her is a norm.²⁰ However, the ill effect of such a treatment on a
71 child who is already suffering from a disorder beyond his/her control is great. Rebuking
72 a child with enuresis may aggravate the problem and lead to feelings of inappropriate
73 guilt, embarrassment, low self-esteem and helplessness in the child.¹⁷ This harsh
74 treatment in the long run may also lead to mental health problems for the child.²¹
75 Furthermore, being reprimanded for wetting clothes at school and a complaining and
76 non-supportive attitude of the school staff may become a source of distress for both the
77 parents and the child. Studies have reported that such children also perform poorly in
78 school compared to their healthy counterparts.²²

79 Despite the potential for adverse effects, few families seek treatment for enuresis. This
80 indicates that the understanding of enuresis in the community is largely elusive. The
81 present study was planned to assess the relationship between maternal intolerance and
82 behavioural problems in children with enuresis.

83 **Subjects and Methods**

84 The cross-sectional descriptive study was conducted from January to November 2018
85 at the outpatient departments of three hospitals in Lahore and Sialkot district of the
86 Punjab province in Pakistan. After approval from the Departmental Doctoral

87 Programme Committee of the Centre for Clinical Psychology, University of the Punjab,
88 Lahore, the sample size was determined using G*power analysis²³ with medium effect
89 size 0.15, alpha (α) 0.05 and beta (β) 0.95. The sample was raised from among mothers
90 aged 23-50 years of children aged 6-13 years formally diagnosed with enuresis by the
91 on-duty consultant paediatrician. The subjects were enrolled using non-probability
92 purposive sampling technique which allowed identification of potential participants.²⁴
93 The diagnosed children were further screened according to the DSM-V diagnostic
94 criteria¹. Mothers who had any psychical disability or chronic illness, as identified
95 through self-report and general observation, were excluded along with those who were
96 divorced or separated. Written permission for data collection was obtained from the
97 medical superintendents and head of departments of the four hospitals that were part of
98 the study. The on-duty consultant at each centre was requested to refer children with
99 enuresis to the researcher after initial diagnosis of enuresis. After taking written
100 informed consent from the subjects, a semi-structured pre-designed demographics
101 questionnaire was administered orally and individually in the native language. It
102 included one section related to information regarding the mother, and another section
103 related to information regarding the child.

104 Maternal tolerance was assessed using the Tolerance Scale (TS) which is a brief 20-
105 item scale. Higher score is indicative of intolerance for enuresis and vice versa.²⁵ It is
106 scores in Likert format from 0 = "Disagree" to 2 = "Agree". A mother's score was the
107 sum of scores on each item. The total score range in 0-40. The overall test-retest
108 reliability coefficient of the scale is $r = 0.49$.¹¹ Cronbach's alpha for the scale in the
109 present study was 0.89.

110 To assess behavioural issues in children with enuresis, the Children Behavioural
111 Checklist (CBCL) questionnaire-parent form for school-aged children was utilised.²⁶
112 Seven subscales were included in the study; anxious/depressed, withdrawn/depressed,
113 somatic complaints, rule-breaking behaviour, aggressive behaviour, social problems,
114 and attention problems. Mothers were asked to rate the items on a 3-point ordinal rating
115 scale from 0 = "not true at all" to 2 = "mostly true". Scores were simply added. Studies

116 have demonstrated a high rate of reliability between CBCL and actual psychological
117 diagnosis.²⁷ For the empirically based problem subscales, the alpha coefficients range
118 from 0.78 to 0.95 on the CBCL.²⁸ Cronbach's alpha for the overall checklist in the
119 present study was 0.98.

120 Data was analysed using SPSS 21. $P < 0.05$ was considered significant, and all tests were
121 two-tailed.

122

123 **Results**

124 There were 80 mothers with a mean age of 34.53 ± 4.89 years (Table 1) and as many
125 children with a mean age of 8.16 ± 2.36 years. Among the children, 51(63.8%) were
126 boys; 31(38.8) were first-born; 29(36.3%) were last-born; 18(22.5%) were the middle
127 child; and 2(2.5%) were the only child in the family. Besides, 43(53.8%) children had
128 nocturnal, 33(41.25%) had diurnal and 4(5%) had combined type of enuresis.

129 Maternal intolerance was positively and significantly correlated with rule-breaking
130 ($p=0.02$) and aggressive behaviour ($p=0.01$) in children with enuresis (Table 2).
131 Maternal intolerance was a significant and positive predictor of rule-breaking behaviour
132 ($p=0.02$), aggressive behaviour ($p=0.001$) and attention problems ($p=0.01$) in the
133 affected children (Table 3).

134

135 **Discussion**

136 In the current study, majority of the mothers were undereducated. Increased prevalence
137 of enuresis has been observed with lower education level of the parents, especially
138 mothers.²⁹ Studies have also demonstrated that lower maternal education may act as a
139 risk factor for perpetuating and maintaining enuresis in children.³⁰

140 The mean age for children in the current sample was 8.16 years. Research has shown
141 that enuresis is common among children aged 6-8 years. Remission rates are
142 considerably high as child grows older.^{29,31,32}

143 Findings also indicated that the degree of tolerance from the mother was both significant
144 and positive in its correlation with rule-breaking and aggressive behaviours. According

145 to a study, intolerant mothers tend to lay the tension and burden of enuresis out on their
146 children.³³ Problematic child behaviour could hint at the distress and lack of tolerance
147 from the mother's end. It has also been shown that families in which the parents are
148 more distressed, intolerant and have minimal emotional support, there is a higher
149 inclination towards developing family fights, which in turn greatly impacts the
150 children's psychosocial state.³⁴ A study emphasised the importance of the effect of lack
151 of tolerance from the parents on the child's stress levels, which leads to the development
152 of psychopathologies, and it can be understood that detrimental attitudes displayed by
153 the mother addressing the child can lead to higher susceptibility to bed-wetting
154 behaviour.³⁵ Mothers also believe that children of an older age can control this behaviour
155 more efficiently. Mothers who think their children can regulate this behaviour on their
156 own are also, as per the attribution theory, less tolerant. This attitude can induce a
157 mixture of emotions in the child, not limited to remorse, rage, hopelessness, helplessness
158 and unhappiness. If allowed to fester, these thoughts may lead to the development of
159 negative behaviours.

160 A study on children having primary nocturnal enuresis demonstrated that punishment
161 and harsh attitudes had poor outcomes, and could even lead to depression and overall
162 diminished life quality.²⁰ The expression of such issues can call for even greater levels
163 of intolerance and feelings of negativity from the mother, which facilitates this cycle of
164 toxicity.

165 Regression analysis in the current study showed that maternal intolerance significantly
166 predicted aggressive and rule-breaking behaviours in the affected children, which is in
167 line with literature.^{36,37} Certain studies have demonstrated that children with enuresis
168 show more emotional and behavioural difficulties compared to healthy controls.³⁸

169 Research has also demonstrated the association between enuresis and attention
170 difficulties along with other emotional and behavioural difficulties; specifically, its co-
171 morbidity with attention deficit/hyperactivity disorder (ADHD) has been observed.³⁹⁻⁴¹

172 Level of maternal tolerance in the current study did not significantly predict other
173 behavioural problems (Table 2). Further studies are needed to verify these findings and

174 explore the role of certain protective factors. These studies may employ a longitudinal
175 design so that the cause-and-effect interpretations may be made more confidently and
176 reliably.

177 Future studies may need to focus on other risk and protective factors in the development
178 of enuresis. Taking into consideration the father's perception regarding enuresis may
179 also help understand the psychosocial implications of the disorder.

180

181 **Conclusion**

182 Maternal intolerance and hostile attitudes towards children with enuresis lead to
183 secondary behavioural and emotional difficulties. Enuresis is a specific entity, different
184 from other bio-behavioural problems in terms of antecedents and correlates. It supports
185 the contention that bladder control is a milestone to be achieved when a child is
186 physiologically and psychologically ready. In other words, even when the child is
187 maturationally ready, if the family environment is not congenial and maternal support
188 and understanding is lacking, there may be problems and delay in the achievement of
189 bladder control.

190

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192 Psychology, degree.

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 301 control, nocturnal enuresis, and behavioral problems in Chinese children aged 6
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 304 -----
 305 **Table 1: Demographic characteristics of mothers (N=80).**

Demographic Characteristics	Mothers		
	<i>f</i>	%	<i>M (SD)</i>
Age (In years)			34.53 (4.89)
Education			
Uneducated	2	1.9	
Primary	6	7.5	
Middle	19	23.8	
Matriculation	27	33.8	
Intermediate	8	10.0	
Graduate	17	21.3	
Postgraduate	1	1.3	
Family System			
Nuclear	33	41.3	
Joint	47	58.8	

Average monthly income (PKR)			39083.75 (21369.84)
Occupation			
Yes	11	13.8	

306 SD: Standard deviation; PKR: Pak rupee.

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310 **Table 2: Summary of correlations among study variables (N=80).**

Variables	Maternal Tolerance	Anxious/Depressed	Anxious/withdrawn	Somatic complaints	Rule-Breaking behaviour	Aggressive behaviour	Social problems	Attention problems	<i>M</i>	<i>SD</i>
Maternal tolerance	-	.05	.03	-.00	.25*	.31**	-.00	.29**	26.65	4.20
Anxious/depressed		-	.33**	.39***	-.16	-.18	.07	.10	9.33	3.82
Anxious/withdrawn			-	.34**	-.28*	-.36***	.07	.20	6.39	3.52
Somatic complaints				-	.07	.05	-.09	.09	7.00	2.30
Rule breaking behaviour					-	.62***	.01	.25*	.75	.24
Aggressive behaviour						-	.10	.35**	13.64	5.33
Social problems							-	.17	7.65	2.61
Attention problems								-	8.53	2.34

311 *Note:* For all subscales of the child behaviour checklist, higher scores are indicative of more extreme responding in the direction of
 312 the construct assessed.

313 * $p < .05$, ** $p < .01$, *** $p < .001$. SD: Standard deviation
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324 **Table 3: Linear regression analysis predicting behavioural problems in children with enuresis (N= 80)**

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Predictor	Rule breaking behavior				Aggressive behaviour				Attention problems			
	B	β	<i>SE</i> ₋	95% CI [UL LL]	B	β	<i>SE</i>	95% CI [UL LL]	B	β	<i>SE</i> ₋	95% CI [UL LL]
Constant	-	-	.17	[-.71 .02]	-	-	3.69	[10.63 -4.07]	-	-	1.63	[-.95 7.44]
Maternal tolerance	.02*	.25*	.24	[-.03 .00]	.38**	.31**	5.11	[-.66 .12]	.16**	.29**	2.25	[-.28 .04]
R ²		.06*				.09**				.09**		

326 *p<.05; **p<.01; B: Unstandardised coefficient; β : Standardised coefficient, CI: Confidence interval; UL: Upper limit; LL: Lower
 327 limit. SE: Standard error.