

Self-Image and Performance in Children with Nocturnal Enuresis

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Abstract

Objective: To study the self-image of children between 8 and 12 years with nocturnal enuresis, and to correlate the findings with age, sex, clinical symptoms, primary versus secondary enuresis and treatment failures.

Methods: The study-group embraced 50 university hospital, and therefore selected therapy-resistant nocturnal enuresis-children, 27 boys and 23 girls. The mean age was 9.8, which means children aged between 8 and 12 years. Children were classified into two age groups: I = 8–9 years and II = 9–12 years. A total of 41 out of 50 had primary nocturnal enuresis. The mean number of treatments before intake was 5.6, A = 1–4, B = 5–8, C = 9–12. Seventy-seven children without nocturnal enuresis were included in the control group, 31 boys and 46 girls.

The method we used to measure the perceived competence of the children on specific domains of their life was the Dutch translation and also validation of the “Self-Perception Profile for Children” by Harter. The testing was performed before and after therapy.

Results: Children with nocturnal enuresis have a significantly lower perceived competence than children without nocturnal enuresis, concerning physical appearance ($p < 0.05$) and global self-esteem ($p < 0.01$). There is a main effect of gender ($p < 0.01$) and age ($p < 0.05$) concerning scholastic skills. There is a correlation with the number of treatment failures. The more treatment failures, the lower the self-esteem. After successful treatment, there is an improvement of ‘athletic competence’ and ‘global self-esteem’, but it is not significant.

Conclusion: Nocturnal enuresis has important negative effects on the self-image and performance of children. Perceived competence was lower in girls than in boys with enuresis, and it was significantly lower in the higher age than in the lower. Children with day-time and night-time incontinence have a significantly decreased perceived competence on scholastic skills compared to children with nocturnal problems only. Successful treatment tended to increase athletic competence and global self-esteem.

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1. Introduction

There is less evidence of psychological causes in the pathogenesis of nocturnal enuresis, now that nocturnal polyuria, bladder dysfunction and hereditary factors are identified [1,2]. Recent data show that there may be a significant impact of the nocturnal enuresis on the child's emotional state, social development and self-esteem [3,4].

About 85% of the children are continent at the age of 5–6 years. So, 15% of the children do not succeed in becoming continent, and some are still enuretic as teenagers. Nocturnal enuresis is defined as the involuntary voiding of urine in bed beyond the age at which bladder control is normally obtained in the absence of organic pathology [2,5]. Children who have never achieved a period of up to 6 months free of wetting are usually considered to have primary nocturnal enuresis. Secondary nocturnal enuresis, according to DSM-IV, is the re-emergence of wetting after a period of established urinary continence [3,6].

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Not being continent at the normal age increases the feeling of failure of the body. It does not succeed in obtaining the necessary capacities to become dry. The majority of the older enuretic children cannot participate (school) camps. So they feel very unsure and have the impression they are missing important milestones in their life. The symptom of wetting might become a chronic stress, and if persistent might have a negative effect on the child's personality and on the child's self-concept. Some studies, e.g. by Hägglof et al. [7] and Moffatt et al. [8], indicate that self-esteem is impaired among children with wetting symptoms. If low self-esteem persists over years in enuretic children, later psychological and psychiatric dysfunction may be expected. We suggest that low self-concept may be a secondary effect of chronic stress rather than a cause of the nocturnal enuresis: "earlier views that wetting problems are almost a symptom of underlying psychological disorders or problems have given way to evidence that most children with wetting problems have rather secondary consequences" [8].

The self-esteem of children is an important psychological variable that is supposed to be associated with mental health. Low self-esteem is seen in different psychiatric disorders as depression, eating disorders and identity problems. Harter [9] suggests that the self-concept of children has important implications on the experience of their competencies on different dimensions. The impaired self-esteem is the consequence of their physical as well as psychological experience of their body.

Butler [3] and Harter [9] suggest that nocturnal enuresis may generate negative reactions of the 'significant others', that possibly increase the child's negative self-concept.

Therefore, wetting problems require 'successful' therapy. Treatment should follow careful evaluation of the type of enuresis and should involve the parents of the child. So, the percentage of therapy-failure should be as small as possible.

2. The aim of the study

First, we want to study the self-image and self-performance on different life domains in children with nocturnal enuresis.

Second, we want to analyse differences in self-esteem in relation to age, sex, and clinical symptoms, primary versus secondary enuresis and treatment failures.

Third, we want to make a first attempt to evaluate the effect of successful treatment on the self-esteem.

Table 1

Presentation of the study-group ($n = 127$)

Condition	Total	Boys	Girls	8–9 years	10–12 years
Enuretic	50	27	23	21	29
Control	77	31	46	40	37

3. Subjects

The study is conducted in a group of 50 patients selected with therapy-resistant nocturnal enuresis. Some of the children do also have day-time and night-time incontinence. The type and severity of nocturnal enuresis is not stated, and almost one fourth of the patients had combined diurnal and nocturnal problems. They have all received between 1 and 12 treatments. Almost one fifth had 9–12 treatments.

The study-group consisted of 27 (54%) boys and 23 (46%) girls. Mean age was 9 years and 10 months, which means children, aged between 8 and 12 years. A total of 21 (42%) were aged between 8 and 9 years and 29 (58%) were aged between 10 and 12 years. See Table 1.

They are compared to 77 children (31 (40.3%) boys and 46 (59.7%) girls) of the same age without nocturnal enuresis. The mean age was 9 years and 7 months, which means children between 8 and 12 years. A total of 40 children (52%) were aged between 8 and 9 years and 37 children (48%) were aged between 10 and 12 years. See Table 1.

All children followed normal primary or secondary education, with exception of two enuretic children and one non-enuretic child who followed special school. In both groups we do not have any information about demographic variables, such as social class, parental education and single-parent families.

4. Measures

The instrument chosen to measure the perceived competence of the children on specific domains of their life was the Dutch translation and also validation by Veerman [10] of the "Self-Perception Profile for Children" by Harter [11].

The test embraces 36 items and are directed to the perceived competence concerning scholastic skills (a), social acceptance (b), athletic competence (c), physical appearance (d), behavioural conduct (e) and global self-esteem (f). There are six items in a subscale.

A short description of each subscale follows:

- (a) *Scholastic skills* embrace the child's perception of his/her school-related competence (potentialities/skills).

- (b) *Social acceptance* embraces the child's feeling of acceptance by peers or the feeling of being popular (embraces no social skills).
- (c) *Athletic competence* embraces the feeling of competence about sport and outdoor activities.
- (d) *Physical appearance* embraces the child's feeling of satisfaction with his/her looks (length, weight, body, face, and hair).
- (e) *Behavioural conduct* embraces the child's feeling of satisfaction with his/her behaviour.
- (f) *Global self-esteem* embraces the child's feeling of satisfaction with oneself as person, the life he/she lives and his/her self-confidence.

The test is constructed for children between 8 and 12 years, and can be taken individually and in group. The composition is friendly for children. The child has to choose between two opposite sentences. Then he has to indicate if the sentence is really true or sort of true for him/her. The items are scored from 1 = low perceived competence to 4 = high perceived competence. This induces a minimum of 6 and a maximum of 24 points a subscale. The result can be compared with a mean score of a norm group.

The test has good psychometric properties, performed in Dutch and Flemish samples. Internal consistency is good for 'physical appearance' (> 0.80) and sufficient for the other scales (> 0.70), except for 'behaviour conduct' in the Dutch sample. The test-retest reliability is good for 'scholastic skills' and 'athletic competence' (> 0.80), sufficient for 'physical appearance', 'behaviour conduct' and 'global self-esteem' (> 0.70) and moderate for 'social acceptance'.

5. Procedure

All enuretic patients were under medical care in our University Hospital. The paediatrician referred to our psychological department when a child had the required age and when parents and child were prepared to collaborate in the study.

Between September 1993 and March 1995, the 50 enuretic children were taken off the Dutch translation of the 'Perceived Competence Scale'. A research associate did the explanation about a right performance of the testing with the child. She answered questions from the child and read the questions for those with reading difficulty.

Information about the kind of voiding problems, number of treatment failures, was obtained in the intake or by the medical information of the paediatrician.

Between January 1994 and April 1995, a second take-off was performed to 13 enuretic children, to evaluate a possible change in perceived competence after a successful behavioural therapy. Between the two take-offs there was a mean period of 34.5 weeks.

The 77 non-enuretic children were recruited from two youth movements. Before testing the children, a letter was sent to the parents with an explanation of the study, a checklist of symptoms concerning problems of enuresis and/or incontinence and an open question about other difficulties. Three children (two boys and one girl) had nocturnal enuresis. Their testing were not assimilated into the study.

At the beginning of a meeting, the research associate explained the right performance of the testing in group. She answered questions from the children and guided individually the children with reading difficulty. A second take-off was done to all children, after a mean period of 8 weeks.

6. Analysis

The SPSS program was used for descriptive statistics, independent *t*-tests, correlation and variance analysis: oneway and ANOVA, dependent on the measuring level of the involved variables and the aim of the study.

As independent variables we had: age, sex, study condition, clinical symptoms, primary versus secondary enuresis and number of treatment failures. As dependent variable we had the mean scores on the six subscales of the 'Perceived Competence Scale'.

7. Results

Children with nocturnal enuresis have a significantly lower perceived competence than children without nocturnal enuresis, concerning *physical appearance* ($t = 2.42, p < 0.05$) and *global self-esteem* ($t = 2.96, p < 0.01$). There is also a tendency to a lower perceived competence in enuretic children regarding their scholastic skills and social acceptance, but it is not significant. See Table 2 and Fig. 1.

There is a main effect of *gender* concerning 'scholastic skills' (ANOVA, $F(1, 123) = 10.85, p < 0.01$). Enuretic girls have a significantly lower perceived competence than enuretic boys. There is also an interaction effect between study-group and gender, concerning 'scholastic skills' (ANOVA, $F(1, 123) = 10.75, p < 0.01$), 'social acceptance' (ANOVA, $F(1, 123) = 4.02, p < 0.05$) and 'behavioural conduct' (ANOVA, $F(1, 123) = 7.2, p < 0.01$). The enuretic girls have the

Table 2

Means and standard deviations on the six subscales of the Perceived Competence Scale (Dutch translation), for children with nocturnal enuresis and control group

	Enuretic (n = 50)	Control (n = 77)	t-test
Scholastic skills			
Mean	16.72	17.09	NS
S.D.	4.04	3.27	
Social acceptance			
Mean	17.98	18.53	NS
S.D.	4.37	3.50	
Athletic competence			
Mean	18.16	17.97	NS
S.D.	3.87	3.65	
Physical appearance			
Mean	17.96	19.74	<i>p</i> < 0.05
S.D.	4.22	3.94	
Behavioural conduct			
Mean	16.62	16.18	NS
S.D.	2.80	3.63	
Global self-esteem			
Mean	18.32	20.09	<i>p</i> < 0.05
S.D.	3.27	3.31	

Table 3

Means for the subgroups boys/girls on the six subscales of the Perceived Competence Scale (Dutch translation), for children with nocturnal enuresis and control group

	Enuretics (n = 50)		Control (n = 77)		ANOVA
	Boys (n = 27)	Girls (n = 23)	Boys (n = 31)	Girls (n = 46)	
Scholastic skills^{a,*}					
Mean	18.59 ^b	14.52 ^b	17.09	17.08	<i>p</i> < 0.01
Social acceptance					
Mean	18.59	17.26 ^b	17.64	19.13 ^b	<i>p</i> < 0.05
Athletic competence					
Mean	18.85	17.34	18.19	17.82	NS
Physical appearance					
Mean	18.81	16.95	19.70	19.76	NS
Behavioural conduct					
Mean	17.07 ^b	16.08	14.87 ^b	17.06	<i>p</i> < 0.01
Global self-esteem					
Mean	18.62	17.95	19.77	20.30	NS

^a Main effect for enuretics.
^b Interaction effect.
^{*} *p* < 0.01.

lowest perceived competence and the non-enuretic girls the highest. As for behavioural conduct, the enuretic boys have the highest perceived competence and the non-enuretic boys have the lowest. See Table 3 and Figs. 2(a) and 2(b).

There is a main effect of age concerning ‘scholastic skills’ (ANOVA, $F(1, 123) = 4.57, p < 0.05$). The enuretic children aged between 10 and 12 years have a significantly lower perceived competence than the 8–9 years old enuretics. There is also an interaction effect between study-group and age. Concerning ‘scholastic skills’ (ANOVA, $F(1, 123) = 4.79, p < 0.05$) and

‘behavioural conduct’ (ANOVA, $F(1, 123) = 5.12, p < 0.05$), the 10–12 years old enuretic children have the lowest perceived competence and the 8–9 years old enuretic children the highest perceived competence. Concerning ‘social acceptance’ (ANOVA, $F(1, 123) = 4.86, p < 0.05$), ‘physical appearance’ (ANOVA, $F(1, 123) = 4.3, p < 0.05$) and ‘global self-esteem’ (ANOVA, $F(1, 123) = 6.31, p < 0.05$), the 10–12 years old enuretic children have the lowest perceived competence and the 10–12 years old non-enuretic children have the highest perceived competence.

In general we notice that the perceived competence decreases in children with nocturnal enuresis as the age

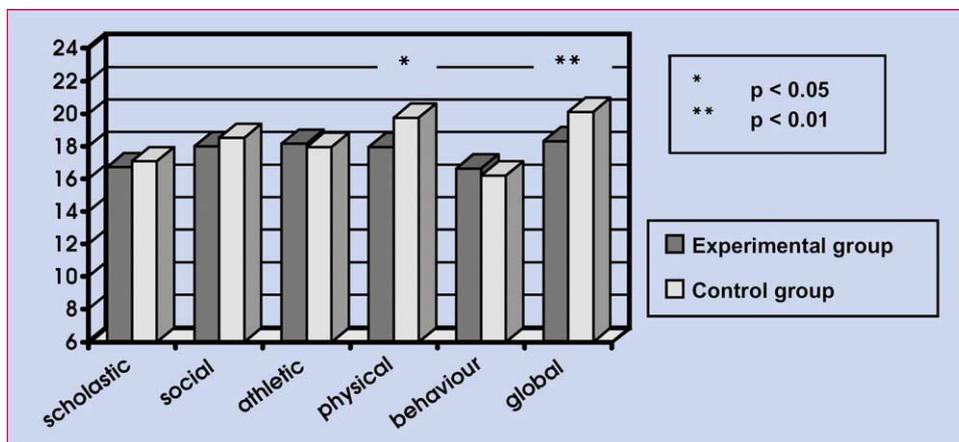


Fig. 1. Means on the six subscales of the perceived competence scale, for children with nocturnal enuresis and control children.

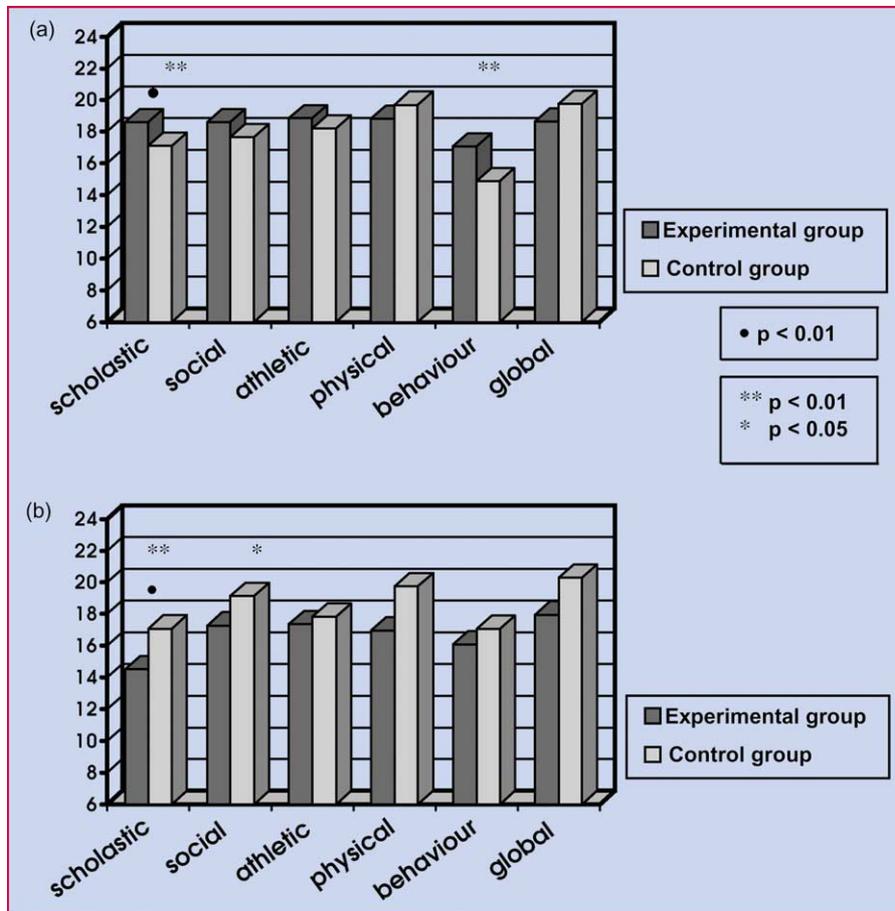


Fig. 2. (a) Means for the subgroup ‘boys’ on the six subscales of the Perceived Competence Scale (Dutch translation). (b) Means for the subgroup ‘girls’ on the six subscales of the Perceived Competence Scale (Dutch translation).

Table 4

Means for the subgroups 8–9/10–12 years on the six subscales of the Perceived Competence Scale (Dutch translation), for children with nocturnal enuresis and control group

	Enuretic (n = 50)		Control (n = 77)		ANOVA
	8–9 years (n = 21)	10–12 years (n = 29)	8–9 years (n = 40)	10–12 years (n = 37)	
Scholastic skills ^{a,*}					
Mean	18.33 ^b	15.55 ^b	17.07	17.10	p < 0.05
Social acceptance					
Mean	18.76	17.41 ^b	17.70	19.43 ^b	p < 0.05
Athletic competence					
Mean	18.95	17.58	17.72	18.24	NS
Physical appearance					
Mean	19.28	17.00 ^b	19.37	20.13 ^b	p < 0.05
Behavioural conduct					
Mean	17.85 ^b	15.72 ^b	15.90	16.48	p < 0.05
Global self-esteem					
Mean	19.33	17.58 ^b	19.50	20.72	p < 0.05

^a Main effect for enuretic.
^b Interaction effect.
 * p < 0.05.

increases, while the perceived competence increases in children without nocturnal enuresis as the age increases. See Table 4 and Figs. 3(a) and 3(b).

Furthermore, we can see that the children with nocturnal and diurnal problems have a significantly lower perceived competence concerning ‘scholastic skills’ ($t = 4.04, p < 0.01$) than children with only nocturnal problems. On the other subscales, both groups experience themselves as equally competent. There is no effect of primary versus secondary enuresis. There is an effect of the number of treatment failures, but it is not significant. The more treatment failures, the lower the self-esteem.

There is an improvement of the perceived competence concerning ‘athletic competence’ and ‘global self-esteem’ after successful treatment of the enuretic children, but it is not significant. The enuretic boys have a significantly increased perceived competence concerning ‘athletic competence’ ($t = 2.48, p < 0.05$). The same results we can conclude to the 8–9 years old enuretic children ($t = 2.99, p < 0.05$).

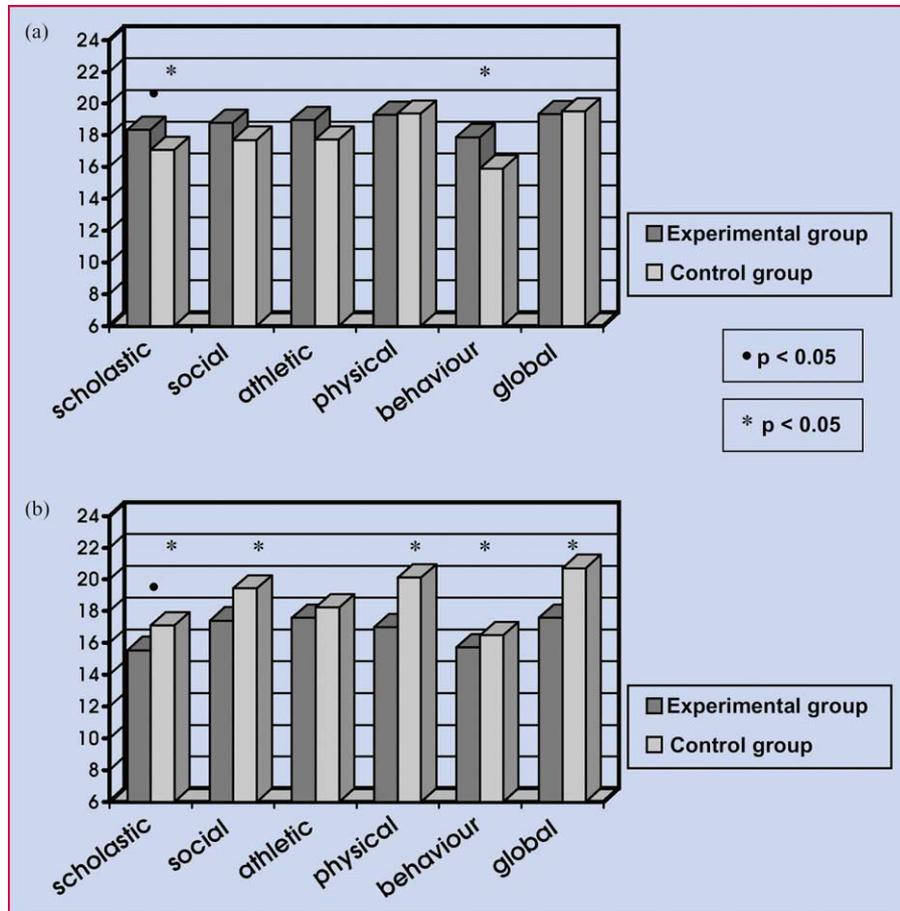


Fig. 3. (a) Means for the subgroup '8–9 years' on the six subscales of the Perceived Competence Scale (Dutch translation). (b) Means for the subgroup '10–12 years' on the six subscales of the Perceived Competence Scale (Dutch translation).

8. Discussion

The primary aim of this study was to provide a useful description of the self-image and performance by children with nocturnal enuresis. The first finding is that children with nocturnal enuresis have a significantly lower perceived competence than children without nocturnal enuresis, concerning physical appearance and global self-esteem. There is also a tendency to a lower perceived competence in enuretic children concerning scholastic skills and social acceptance. The subjects are not content with their body and don't have good experiences with it. Children with wetting problems are frequently aware of the social and emotional consequences, and in particular commonly fear being discovered by others, feel unable to sleep at a friend's house, sense being different from friends and are likely to report being bullied. Such children experience a loss of self-esteem, although this appears to be specific to certain aspects of functioning, such as perceived social competence and physical appearance [8]. Also the study of Harter [9] shows the essential function of

physical competence with children. It has its implications on the social, cognitive and global competencies of the child.

A further aim of this study was to analyse the relation of self-esteem to age, sex and clinical symptoms, primary versus secondary enuresis and treatment failures.

The enuretic girls perceive their scholastic skills lower than the enuretic boys. Girls appear more vulnerable to emotional distress, with an increased risk of being more aware of their failing body [3]. These feelings of failure may have implications on the scholastic situation, where success is very important.

Investigating further the relationship between study-group and gender, we found an interaction effect concerning scholastic skills, social acceptance, physical appearance and global self-esteem. The results confirm the higher vulnerability of girls; the nocturnal enuresis has more impact on their perceived self-competence.

Of particular interest of this study is the finding that enuretic boys have the highest perceived competence

and differs from the non-enuretic boys who have the lowest, concerning behavioural conduct. The boys may compensate low self-concept by their behaviour and their experience of their behaviour.

Older children have more psychological consequences of the wetting problem. The perceived competence decreases in children with nocturnal enuresis as the age increases, while the perceived competence increases in children without nocturnal enuresis as the age increases. Our results are in accordance with few previous studies. Fergusson and Horwood [12] suggest a small but detectable increase in behaviour problems with children with wetting problems after the age of 10 years. Such children may react to problems with nocturnal bladder control by becoming more disruptive, inattentive, or difficult to manage. Bed-wetting after the age of 10 years is associated with small but detectable increases in risk of conduct problems, attention deficit behaviours and anxiety/withdrawal in early adolescence.

Whether the nocturnal enuresis of the child is primary or secondary has no effect on its self-concept. The fact that the child has been dry for a period does not support the establishment of a normal self-esteem. Otherwise it is not an aggregational factor in the development of the self-concept.

The tendency to an improvement of the self-concept after successful treatment is broadly in support of the findings of the studies of Moffatt et al. [8] and Hägglof et al. [7] that treatment may normalise self-esteem in young children with wetting problems. We suggest that poor self-concept may be a secondary effect of chronic stress rather than a cause of the symptom of wetting. A treatment only may be started when the type of enuresis is identified, so that the therapy can be tailored to the child self and to type of enuresis thereby reducing the percentage of therapy failure.

The finding of an improvement of athletic competence and global self-esteem is in accordance with the study of Harter [9] that estimates the importance of physical competence for the global self-concept.

A study such as this has limitations. The development of the self-concept is a complex process. Other

variables, socio-economic, personality variables, intelligence, family variables may play an important role. Moffatt et al. [8] mentions the study of Kaffman and Elizur that shows that certain personality types were statically more likely to have enuresis at the age of 4 years. Also other problems, e.g. sickness, learning problems and behaviour problems may interfere the self-concept. Finally, the self-concept of the parent may be effective on the self-concept of their children.

The second take-off of the 'Perceived Competence Scale' was performed to 13 children of the 50 enuretic children of the study-group. The period to become dry was too short to give all the subjects the possibility to be continent during a period of 3 months.

This study is a first description and an exploratory analysis of the impact of wetting problems on the self-esteem of children. From this starting point various avenues of research could profitably be developed:

- (1) The personality of the child may be a predictor of wetting problems in children. A study of the effectiveness of these variables may clarify the mechanisms of the self-esteem. This study could also give information about the coping behaviour of wetting children.
- (2) The reactions of the significant others is very important to the self-esteem of children. "An important source of a person's self-concept is significant reactions of others to various dimensions of his person, e.g. his body. It might be expected that the self-concept of a person who has negative traits attributed to his body type by significant others would be markedly different from the self-concept of a person whose society attributed positive traits to his body type." A study of the relation of the self-concept to these reactions in children with nocturnal enuresis is necessary. The reactions of the parents on the wetting problem of the child should be investigated.
- (3) A more specific and detailed investigation of the correlation between the number of treatment failures and the self-esteem.

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Editorial Comment

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During the last 30 years, we have become increasingly aware of the fact that nocturnal enuresis has many causes. This has led to a differentiated view on diagnosis and treatment and brought enuresis into the focus of the professional community.

The era where the attitude was characterised by treatment nihilism has been replaced by an enthusiasm about new treatment options.

Part of the nihilism was easy explanations as to the cause of enuresis. It was so easy to assign any deviation from the concept of normality with regards to the mental attitude of the child to be the primary cause of enuresis, and it still is in some countries. Enuresis has had its Freudian explanations, and the primary caretakers are in many countries still recommended to be psychologists or child psychiatrists.

Today that is mostly the case in layman literature, whereas the professional literature concentrates on the somatic part. One may say and quote that “the pendulum has swayed away from psychology and psychiatry towards somatic” (Theunis and Van Hoecke et al.).

Along with increasing availability of new evidence concerning the mechanisms in the treatment of enuresis, a substantial part of the literature has focused on how enuresis affects the child’s mind and how it regards itself in its social ambience, and to make it even more complicated the child not only has its social ambience related to its peers. It also has to react to the

attitude of its parents. The study presented here is one good example of the research in the psychological and the psychiatric aspects of enuresis. Previous studies have shown that the self-esteem of an enuretic child is low, lower than normal, and also lower than the self-esteem of a chronically sick child. It has also been shown that there is a strong tendency towards normalisation when the child has become dry. This has led to the notion that in the majority of enuretics any psychological reaction is secondary. The study presented here tends to dig even deeper. It deals with gender aspects and also the number of treatment failures in 9–12 years old enuretics. Especially the impact of treatment failures should be a warning to the professional community. It brings to attention that efforts should be made to assess the cause and thereby the targeted treatment of enuresis before treatment is started. That is in order to minimise the number of treatment failures. It also stresses that enuresis is a psychological burden not least to the girls. However, one may have a few reservations as to the conclusion. The centre from which the patients are recruited is as rightfully stated a tertiary referral centre, and it is typical that most of the studies of psychological aspects do have an origin in that type of centres, and we know from own experience that tertiary referral centres mainly deal with treatment failures from more primary health services. It should therefore be recommended that the latter kind of institutions also at the GP level should be incorporated in future studies of the psychological aspects of enuresis.