

Should we routinely assess psychological morbidities in idiopathic lower urinary tract dysfunction: ICI-RS 2019?

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ABSTRACT

Aims: Psychological morbidities play a major role in idiopathic lower urinary tract dysfunction (iLUTD) in children and adults. The aim of the Think Tank (TT) was to discuss the relevance of psychological morbidities in idiopathic LUTD over the life span, including overactive bladder (OAB) or dysfunctional voiding (DV) and methods of assessment.

Methods: The paper is based on a selective review of the literature and in-depth discussions, leading to research recommendations regarding the assessment of psychological morbidities in iLUTD on children and adults held during the TT of the International Consultation on Incontinence Research Society in 2019.

Results: Psychological comorbidities affect the health behaviors and treatment outcomes in patients with iLUTD. Both clinically relevant comorbid mental disorders, as well as subclinical psychological symptoms have a major impact and negatively influence incontinence treatment. Research is needed to elucidate mechanisms underlying iLUTD and psychological comorbidities. Clinical studies are needed to determine how perception generation/cognition impacts the relationship of urinary perceptions, symptoms and objective urodynamic function. Due to high psychological comorbidity rates, screening with validated, generic questionnaires for emotional and behavioral disorders in children with nocturnal enuresis, daytime urinary incontinence and fecal incontinence is recommended. Brief screening is recommended for all adults with iLUTD, especially with OAB and DV, who are refractory to treatment.

Conclusions: Due to the high rate and relevance in clinical practice, screening for psychological comorbidities is recommended for all age groups. The research recommendations of this TT may be followed to improve the assessment of psychological morbidities in iLUTD.

Introduction:

The multifactorial association between lower urinary tract symptoms (LUTS) and affective disorders, particularly anxiety and/or depression, has been demonstrated in several studies and reviews in adults.¹ In children, neurodevelopmental disorders such as attention-deficit/hyperactivity disorder (ADHD) play a major role.² Thus, researchers point towards a multidisciplinary approach and combined treatment in some patients.¹ However, it is still not clear whether psychological comorbidities affect health behaviors and treatment outcomes in patients with idiopathic lower urinary tract dysfunction (iLUTD) such as overactive bladder (OAB) and dysfunctional voiding (DV) in adults. In children, a study showed that untreated ADHD leads to lower adherence and less favorable outcomes of incontinence treatment.³ More importantly, it is not clear when and how to assess the psychological comorbidities in iLUTD. The aim of this Think Tank (TT) was to discuss whether routine assessment of psychological morbidities in iLUTD was needed. This report aims to summarize the relevant discussion and emphasize the open research questions, research needs and recommendations in the field.

Methodology:

A TT group was established within the International Consultation on Incontinence Research Society (ICI-RS) meeting in Bristol, 2019, to answer the main research question “Should we routinely assess psychological morbidities in iLUTD?”. This paper summarizes the presentations and subsequent discussion leading to research recommendations by the TT utilizing a modified Delphi method with a tentative, selective literature review of the topic. iLUTD included OAB and DV both in children and adults.

Results:

The discussion of the TT has been summarized in subsequent subtopics.

1) DO PSYCHOLOGICAL COMORBIDITIES AFFECT THE HEALTH BEHAVIORS AND TREATMENT OUTCOMES IN ADULT PATIENTS WITH iLUTD?

iLUTD has an increased risk for both somatic and psychological comorbidities. Comorbidity is defined as the co-occurrence of two or more disorders or diseases. Clinically relevant psychological comorbidities are characterized by clinical psychological disorders according to DSM-5 or ICD-10 or by psychological symptoms in the clinical range. Subclinical psychological comorbidities encompass milder symptoms, as well as a wide range of constructs such as self-esteem, quality of life, stress, coping, well-being.

Subjective well-being has been identified as one of several psychosocial determinants which may impact on a patient's decision to seek medical advice for LUTS, together with embarrassment, personal beliefs and attitudes towards healthcare.⁴ Studying the role of comorbidities, patients' expectations, psychosocial profiles in association with healthcare-seeking, and the development of questionnaires to explore health-seeking behaviors have been proposed as research priorities in the field.⁴ However, to-date little is known about the effect of psychological comorbidities on LUTS-associated health behaviors, further to the role of certain psychological traits such as withdrawal, resignation and low expectations, typical in patients with psychological distress.^{4,5}

SUGGEST INSTEAD:

Further to psychological sequelae such as.....

Literature on the association between psychological comorbidities and treatment outcomes is sparse. Patients with male LUTS suffering from anxiety disorders were three times more likely to fail treatment than non-anxious patients.⁶ In addition, more non-responders were found among patients with somatization of depression. Depressive symptoms negatively affected the improvement of the degree of distress due to LUTS in post-menopausal women treated with a pessary for uterine prolapse.⁷ In contrast, the hospital anxiety and depression scale (HADS) could not predict the success of sacral neuromodulation in patients with refractory OAB or non-obstructive urinary retention.⁸ Finally, psychological variables are thought to affect adherence to treatment for OAB.⁹ Further, the presence of major depression appears to have a significant impact on the reporting of urinary incontinence, as well as quality of life and functional status associated with incontinence.¹⁰

Similarly, there are very few studies exploring the effect of psychological interventions and treatment of affective disorders on the severity and incidence of LUTS.¹¹ A single study

compared psychotherapy, bladder training and propantheline in patients with either detrusor overactivity or increased bladder sensation. Interestingly, psychological intervention significantly improved nocturia, urgency and incontinence as opposed to pharmacotherapy which only improved frequency.¹¹

In addition, research is needed to elucidate whether there are common mechanisms underlying LUTS, depression and anxiety as well as the underlying pathophysiological pathways. Activation of central inflammatory signaling pathways has been proposed as a possible link between LUTS and depressive symptoms in a study which found the C-reactive protein to be the mediator in the association between male LUTS and depression.¹²

2) PSYCHOLOGY AND URINARY PERCEPTIONS AS DIFFERENT MANIFESTATIONS OF ADAPTIVE PERCEPTUAL MECHANISMS IN ADULTS

Perceptions of urinary (dys)function are poor measures of function and dysfunction, suggesting that judging and managing bladder volumes are subject to perceptual mechanisms.¹³⁻¹⁶ Successful urinary control and perceptions of normal function (lack of symptoms) requires an adaptive response to bladder volumes in the context of a plethora of internal and external stressors including socialization.

SUGGEST INSTEAD:

Requires an adaptive response to bladder volumes in the context of socialization and also a plethora of internal and external stressors.

It is not surprising that urinary dysfunctions are more prevalent in people with compromised resilience such as the aged and those with affective disorders.^{1,17-18}

The perceptual process resolves differences between what is actively being experienced and internal expectations based on training, memory, emotion, and other inputs.¹⁹

Urinary/bladder perceptions are based on cortical recognition of an afferent data stream originating in the bladder and linked to bladder volume by autonomic control of detrusor tone.^{20,21} This centrifugal transduction control suggests a pre-conscious mechanism aimed at adaptive modulation of the data stream supplied to perceptual centers. Additionally, perceptions may be cortically conditioned; a unique frontal feedback system in humans has

been postulated, allowing modulation of afferent sensory registration by motor and associated cortical outflow.^{19,22-25} Thought to be the basis for conscious self-awareness, this system provides for cognitive homeostasis.

Thus urinary symptoms might share neurocognitive etiologies with psychologic/psychiatric disorders, explaining their not-infrequent concurrence. This model is supported by data showing that neuromodulation, a centrally-acting therapy impacting perceptual processes, improves affective function in those patients who experience relief of urinary disorders.²⁶ The concept might also be extended to pelvic floor/genitourinary functional disorders in general.

Clinical studies are needed to determine how perception generation/cognition impacts on the relationship of urinary perceptions/symptoms and objective urodynamic function. The related research should aim to identify specific cognitive markers (e.g. a scores on an established cognitive test) that would indicate that bladder symptoms are more likely perceptual/neuropsychological rather than related directly to bladder dysfunction.

SUGGEST INSTEAD:

Clinical studies are needed to assess the correlation between the patient's own perception of their symptoms and objective assessment of urodynamic function. Discrepancies may be linked to poor or declining cognitive function and this can be assessed by neuropsychological testing.

Such a test would have value in all patients of all ages, as pathologies associated with cognitive decline/neuropsychological pathology are linked to symptom severity.²⁷

3) FOCUS ON SPECIFIC PATIENT GROUPS:

a) Psychological comorbidities in children and adolescents

According to the International Children's Continence Society (ICCS), three main groups of incontinence can be differentiated in childhood: nocturnal enuresis (NE), daytime urinary incontinence (DUI) and fecal incontinence (FI) with and without constipation.²⁸ 10% of 7-year old children are affected by NE, 6% by DUI and 1-3% by FI. In a specific document of the

ICCS, psychological comorbidities of children with incontinence have been reviewed and recommendations have been formulated in detail.²

The overall rate of psychological comorbidities differs in these three groups. Based on population-based studies, 20-30% of children with NE, 20-40% of those with DUI and 30-50% of those with FI have clinically relevant behavioral and emotional disorders – compared to 10% of the population. These are defined by criteria of the ICD-10 or DSM-classification systems or by standardized, validated questionnaires.^{29,30} Specific patterns of comorbid psychological disorders have also been identified.²

Nocturnal enuresis:

Children with secondary NE (relapse after dry period of 6 months or more) have higher rates than those with primary NE (never dry). Those with non-monosymptomatic (NE plus daytime LUTS) have more comorbid disorders than those with monosymptomatic NE (NE, but no other LUTS). Externalizing disorders are more common than internalizing disorders. The most common disorder is attention-deficit/hyperactivity disorder (ADHD).³¹

Daytime urinary incontinence:

Children with DUI have higher comorbidity rates than those with NE. Children with voiding postponement are more affected than those with OAB. The type of disorder is predominantly externalizing. Typical disorders include oppositional defiant disorder (ODD), conduct disorder (CD) and ADHD.

Fecal incontinence:

Children with FI have the highest comorbidity rates of all types of incontinence. The rate is a bit higher in children with non-retentive fecal incontinence than those with constipation. Both internalizing and externalizing occur, therefore the spectrum includes as typical disorders: separation and generalized anxiety disorders, phobias, depressive disorders, but also CD, ODD and ADHD.

Due to these high comorbidity rates, the ICCS recommends screening for emotional and behavioral disorders in all children with NE, DUI and FI.^{2,28} All clinicians should acquire basic knowledge of possible comorbid disorders, observe and ask relevant questions. All children should be screened with validated, broad-band behavioral questionnaires. A child psychiatric

or psychological assessment is recommended for children with clinically relevant problem scores in these questionnaires. Counseling should follow, while treatment can be indicated in severe cases.

Recently, the ICCS has issued a new document reviewing screening questionnaires.³² These include very short, validated questionnaires such as the 'Short Screening Instrument for Psychological Problems in Enuresis' (SSIPPE) and the 'Parental Questionnaire Enuresis/Urinary incontinence' (PQ-EnU). More detailed information can be gained from longer validated questionnaires such as the 'Child Behavior Checklist' (CBCL), the 'Strengths and Difficulties Questionnaire' (SDQ) or the 'Behavior Assessment System for Children, second edition' (BASC-2). The Child Behavior Checklist (CBCL), developed by Achenbach, is unique as several comparable versions exist, which allow comparisons over age groups, as well as between informants (parent, teacher, caregiver, self).³³ The age groups of these Achenbach questionnaires encompass toddlers and preschoolers (1½ -5 years), children and adolescents (4-18 years), young adults (18-30), adults (18-59) and older adults (60-90 years).

Using the total score of the CBCL at clinical cut-off at the 90th percentile, different comorbidity rates could be identified for subtypes of incontinence in a consecutive sample of 1001 children, ranging from low rates of 26.7% in dysfunctional voiding and 35.6% in primary monosymptomatic NE – to 52.9% in secondary non-monosymptomatic NE and 58.8% in non-retentive FI.³⁴ The CBCL has proven to be a useful tool in clinical practice, as well as in research.

The importance in identifying comorbid clinical disorders is that they will not resolve upon attaining continence. In addition, they will interfere with incontinence treatment leading to lower compliance and adherence and thereby worsening outcomes.

b) OAB in adults

OAB is defined by the ICS by urgency symptoms, with or without urgency incontinence, usually with frequency and nocturia in the absence of infection or any other pathology.²⁵ It is a highly prevalent condition, which affects quality of life, and is associated with morbidity and mortality.³⁵

Psychological (mental, psychiatric) disorders are by definition clinical conditions according to classification systems such as the DSM-5 and ICD-10.

SUGGESTION INSTEAD

Two widely-used classification systems for mental health problems are the DSM-5 and ICD-10.

Recently, Vrijens et al. reviewed the literature and pointed out an important correlation between affective disorders (mostly depression and anxiety) and OAB.³⁶

Different causative models have been described, among which the “antecedent hypothesis” (psychological disorder causes the onset of OAB), the “consequence hypothesis” (OAB is responsible for the commencement of psychological disorders), the “common pathway hypothesis” (both conditions shared a common causative underlying aetiology) and finally the assumption that both conditions evolve separately.³⁷

These complex associations are multifactorial and not just bidirectional.

Both OAB and psychological disorders are influenced by factors which can be seen as protective or risk factors, and may be related to the patient himself (internal factors) or to the environment (external factors). These factors can also start to exert their impact before birth (genetics), during earlier life or during later life. These multiple contributing factors make treatment and research efforts challenging.³⁸⁻⁴⁰

Although we know the importance of psychological aspects in OAB, not all questionnaires for OAB do address these aspects. Therefore, generic and disease specific questionnaires to assess psychological symptoms for adults can be used. These will be dealt with in detail in a following section. If clinically relevant symptoms are present, then a full mental health assessment should follow. If a mental disorder is diagnosed, then counselling can be sufficient in many cases. For more severe disorders, psychotherapy, medication and other interventions can be indicated – in addition to the treatment of the OAB.

c) Bladder emptying problems in the adult female

Bladder emptying problems including DV and idiopathic urinary retention are not uncommon in women, and an etiology can be found in only around 40% of women undergoing extensive investigations.^{41,42} Several questionnaire-based studies have demonstrated an association with depression requiring hospitalization. Histrionic personality disorder, depression, risk of somatization, definitive somatoform disorder and unspecified psychiatric disorders.⁴³⁻⁴⁶ Using the Patient Health Questionnaire, somatization and depression were the commonest co-morbidities identified in a cohort of women with urinary retention at the time of undergoing sacral neuromodulation.⁴⁵ In a retrospective study of 53 women across centers in Belgium undergoing sacral neuromodulation, 38 women were in urinary retention and histrionic personality disorder (n=2) and depression (n=6) were commonly reported.⁴⁵ In a cohort of 61 women with urinary retention due to a primary disorder of urethral sphincter relaxation (Fowler's syndrome), 24% had medically unexplained/"functional" symptoms which included loss of consciousness, limb weakness, sensory disturbance and memory impairment. Furthermore, almost a third (31%) had psychological co-morbidities such as anxiety/depression or obsessive compulsive symptoms.⁴⁷ Nearly 50% of women with Fowler's Syndrome suffered from unexplained chronic abdominopelvic, back, leg or widespread pain and use of opiate medications is common, which may interfere with LUT functions.^{42,47}

Bladder emptying problems have been reported in women with functional neurological disorders. In a cohort of patients with fixed dystonia, 4 out of 5 women had emptying difficulty. LUTD had a significant impact on quality of life and was sufficiently severe to require the need for an indwelling catheter.⁴⁸ The true prevalence and breadth of psychological co-morbidities amongst women with bladder emptying problems including DV is difficult to assess because of the lack of a standardized tool to assess symptoms, and the rather limited scope of the tools that have been used in studies so far and is an area where further research is required.

d) DV in the adult male:

Dysfunctional voiding (DV) is defined as an intermittent and/or fluctuating flow rate due to involuntary intermittent contractions of the peri-urethral striated muscle during voiding, in

neurologically normal individuals.²⁵ Prevalence in young male adults with LUTS is 14-28.7%,⁴⁹⁻⁵² rising to 43% if only voiding LUTS are considered.⁵³

DV in children may coexist with OAB, urinary incontinence, recurrent UTIs, constipation and other bowel disorders, but very little is known about etiology. DV may be the result of a defective maturation of the detrusor-sphincter coordination mechanisms or a perinatal neural lesion (as in cerebral palsy children). DV in male adults may be a primary or acquired condition (where psychological disorders may play a role).

Very little is known about the influence of psychological disorders on DV development, as there is a lack of specific literature on this topic. Most of studies are transversal designed, finding correlations but being difficult to draw a causative relationship. Anxiety and depression are most frequent in DV women versus controls.⁵⁴ In children and adults sexual abuse has been found to be a predictor of LUTS in several studies, and may play a role as well.⁵⁵⁻⁵⁷ Psychological problems, especially depression and weak masculine identity, were found in a cohort of young men with chronic prostatitis-like symptoms.⁵⁸ Physical and mental stress may play a role increasing cortisol levels, sympathetic activity and EMG activity (including pelvic floor musculature).⁵⁹

DV shares some clinical characteristics with dystonia disorders, and in some way, it could be considered a pelvic floor or external sphincter dystonia. Depression and anxiety are common non-motor symptoms of dystonia, and a psychogenic or functional dystonia has been described with a higher prevalence of psychological stressors and dissociative correlates.⁶⁰

e) The elderly

So far, no studies have addressed on if and how elderly patients could benefit from psychological assessment prior to starting treatment of a dysfunctional lower urinary tract. Some studies report that incontinence can affect the quality of life in the elderly. Also, instruments exist for assessing disease-specific quality of life disruption and efficacy of interventions.⁶¹ The main treatment of the elderly especially with urgency and urgency incontinence are behavioral treatment modalities. Burgio found that behavioral modification was superior to drug therapy, with an 81% reduction in urgency incontinence episodes in patients with symptoms of OAB as opposed to approximately 50% with

anticholinergic medications.⁶² A combination therapy with drugs and behavioral modification has been demonstrated in older patients in a controlled crossover study as being even more beneficial.⁶³ It is widely acknowledged that success of all conservative treatment especially in the elderly is time consuming and takes a motivated patient as well as a motivated carer. Psychological disorders especially those affecting patient motivation should be assessed before conservative treatment, especially in the elderly is started. Ignoring psychological comorbidities imposes an unnecessary burden for the carer.

4) SCREENING TOOLS: WHAT IS AVAILABLE AND WHAT IS MISSING?

a) Screening tools: Most widely-used

Hundreds of tests to measure psychological, cognitive, behavioral and emotional comorbidities are available and researchers are advised to check the psychometric properties of the test e.g. validity, reliability, sensitive and specificity, and appropriateness for use in specific patient populations and contexts. The most economical way time-wise to screen is with questionnaires. They can be short, of intermediate length or long. Generic questionnaires (dealing with a wide range of symptoms), as well as disease specific questionnaires (dealing with specific problems, e.g. depression, anxiety, etc.) exist.³⁶ Validated questionnaires are preferable, as they allow comparisons to norms. Questionnaires can be used simply by checking the individual symptoms, or by calculation scores of different scales. Questionnaires can be filled out by the patients themselves, or by caregivers. It is important to remember that questionnaires cannot provide a diagnosis – this is only possible by a full mental health professional.

b) The UK initiative: Improving Access to Psychological Therapies (IAPT)

In the UK, the Improving Access to Psychological Therapies (IAPT) program began in 2008. IAPT services provide evidence-based treatments for people with anxiety and depression. A pathway was developed for people with long-term health conditions and medically unexplained symptoms.⁶⁴ The full IAPT screening prompts and routine outcome measures can be accessed in the IAPT manual.⁶⁵

c) Screening for psychological co-morbidities: the patient's perspective

There is still considerable stigma surrounding mental health and many patients are reluctant to be referred to a psychologist, psychotherapist or psychiatrist. Many patients who have previously sought treatment for one or multiple somatic symptoms which, after investigations, were found to be attributable to no organic cause, have had difficulty to adopt a psycho-social perspective of their complaints. Also, some mental health professionals might not be familiar with the specific problems of patients with LUTD. Therefore, it is important to have a good liaison-consultation service.

d) Screening: explaining the rationale:

Screening should be part of routine assessment, which can be accompanied by a leaflet, which contains information including the rationale for screening and what happens after screening. Questionnaires can be sent out to patients prior to their appointment or can be filled out during waiting time in the clinic.

e) Screening: How brief..?

The administration of screening tools will depend on how much time the clinician has available. A key question is whether clinicians should administer briefer or more detailed screening questionnaires, which will yield much more information. Even long questionnaires rarely take more than 20 minutes to fill out by the patient.

Another question is whether to administer generic questionnaires, which cover a variety of symptoms (as recommended in children) or more focused questionnaires, which assess specific symptoms only. Examples for the latter include Post Traumatic Stress Disorder, Complex Post Traumatic Stress Disorder⁶⁶ and, from the group of Somatic Symptom and Related Disorders⁶⁷: (i) Somatic Symptom Disorder (ii) Illness Anxiety Disorder (iii) Functional Neurological Symptom Disorder.

5) *RESEARCH PRIORITIES*

- a) Research Questions (RQ): Are psychological comorbidities in children risk factors for psychological disorders in adults? Research Needs (RN): Conduct or evaluate existing longitudinal studies from childhood to adulthood using established criteria and methods to assess psychological symptoms and disorders.

- b) RQ: Are psychological comorbidities in children risk factors for iLUTD in adults? RN: Conduct or evaluate longitudinal studies from childhood to adulthood using established criteria and methods to assess psychological symptoms and disorders. Also, LUTS should be assessed according to standard criteria.
- c) RQ: Do psychological comorbidities affect health behaviors in patients with iLUTD? RN: Design epidemiological studies to explore whether the presence of psychological comorbidities affects the reporting of LUTS as well as healthcare seeking attitudes for LUTS, embarrassment and fears associated with medical examination and diagnosis involved in iLUTD, and patient expectations from treatment
- d) RQ: Is there an association between psychological comorbidities and treatment outcomes? RN: Design longitudinal studies to explore whether the presence of psychological comorbidities affects treatment outcomes as well as persistence and adherence to treatment in idiopathic LUTD
- e) RQ: How does perception generation and cognition impact the relationship of urinary perceptions and symptoms and objective urodynamic function? Are affective, psychologic and urinary disorders differing manifestations of an underlying perceptual disorder? If so, what are the contributors to adaptive system failures? RN: Design clinical studies to identify specific cognitive markers (e.g. a scores on an established cognitive test) that would reveal whether bladder symptoms are more likely perceptual/neuropsychologic rather than related directly to bladder dysfunction, or not.
- f) RQ: How does screening for psychological comorbidities affect clinical practice in different age groups? RN: Cross-sectional studies should be conducted in different professional settings for different age groups. The rate of comorbid psychological symptoms and disorders and the ensuing recommendations and interventions should be assessed.
- g) RQ: What is the association between psychological disorders and OAB or DV ? Are there shared risk factors? RN: Include psychological aspects in the assessment of LUTS - and vice versa and promote collaboration between psychiatrists, psychologists, urologists. Develop preclinical animal models and clinical therapies to better understand the underlying etiology of these related disorders and design appropriate, personalized treatment strategies. Study less frequent disorders such as

conversion disorders or somatic symptoms disorders. Design experimental studies on effects of physical and mental stress factors on pelvic floor muscle tone and activity.

Plan mechanistic studies to explore possible neuroendocrinological markers indicating common signaling pathways linking LUTS to affective disorders.

h) RQ: How much impact do psychological disorders have on behavioral treatment in frail elderly with OAB? Should we screen frail elderly for psychological comorbidities before imposing behavioral treatment for OAB on them and their carers? RN:

Research on success of conservative treatment in patients with LUTD in respect of the psychological comorbidities. Research burden for the carer doing conservative training in patients with LUTD in respect of different psychological comorbidities

i) RQ: For routine use in clinics, which screening tools should be used? If the patient scores positively on screening, what is the pathway for referral to a mental health professional? RN: Develop and validate specific screening tools for psychological disorders. Develop and validate specific management algorithms for patients with idiopathic LUTD and psychological disorders

Conclusions:

Psychological comorbidities affect health behaviors and treatment outcomes in patients with iLUTD. Research is needed to elucidate the complex, multifactorial mechanisms underlying LUTS and physiological comorbidities. Due to high psychological comorbidity rates, the ICCS recommends screening for emotional and behavioral disorders in all children with NE, DUI and FI. Brief screening is recommended for all adult patients with iLUTD, especially with OAB and DV who are refractory to the usual treatment. Patients should receive a leaflet explaining the rationale for screening for psychological co-morbidities, what the possible outcomes might be and what would the next steps, for instance full mental health assessment and counselling or treatment. The future research recommendations of this TT may improve our understanding of the multifactorial role of psychological morbidities in iLUTD in children and adults.

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