A Preliminary Evaluation of Consultation-Liaison Psychiatry Services For Children at A University Hospital: Lessons Learned to Enhance Efficacy

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ABSTRACT

Objective: Consultation-liaison services provided by the child psychiatry department of a university hospital over a twelve-month period were evaluated to understand the issues which required short term improvement.

Method: All consecutive referrals over a twelve-month period were recorded on a structured assessment form designed for clinical purposes.

Findings: Of the 221 children who were referred, 59.3% (n=131) were from outpatient services and 40.7% (n=90) were from inpatient services. The age range of children was from 3 months to 18 years. Most of the consultation requests came from the Department of Pediatrics (76%). Brain pathologies were the most common medical illnesses (19.9%). Psychiatric diagnostic evaluation and intelligence assessment took precedence among reasons for referral. Major Depression was the most common diagnosis (12.8%) in children and older children were more depressed ($p<0.0001$). Major depression was found in 29.5% of mothers. There were no accompanying medical staff in 64.4% of the referrals and 30.8% of mothers were uninformed of the reasons for referral. Preparation for referral was associated with mothers' positive responses ($p<0.0001$).

Discussion: The rapid increase in psychiatric consultation requests for sick children of all ages including infants and toddlers necessitates reorganization in psychiatric consultation-liaison services. Special attention should be paid to detect major depression which was the most frequent diagnosis for both children and their mothers. It is important that the referring and consultant physicians should communicate and collaborate and that parental participation in the assessment and treatment processes is ensured.

Conclusion: The institution of more comprehensive consultation-liaison services provided by a team in ongoing personal contact with the medical staff is mandatory.

Keywords: consultation liaison, children, chronic illness

ÖZET

Bir Üniversite Hastânesinde Çocuklar İçin Konsültasyon-Liyezon Hizmetlerinin Değerlendirilmesi: Hizmetin Geliştirilmesine Yönelik Deneyimlerimiz

Amaç: Bu araştırmada bir üniversitenin çocuk psikiyatrisi bölümü tarafından bir yıl süresince sunulan konsültasyon-liyezon hizmetleri değerlendirilmiş ve kısa vâdede iyileştirilmesi gereken konuların belirlenmesi amaçlanmıştır.

Yöntem: Bir yıl süresince konsültasyonla yönlendirilmiş tüm başvurular klinik amaçlarla geliştirilmiş yapılandırılmış bir değerlendirme formuna kaydedilmiştir.

Bulgular: Konsültasyonla yönlendirilen 221 çocuğun %59.3'ü (n=131) ayaktan izlenen hasta, %40.7'si (n=90) yatarak tedavi gören hastaydı. Örneklem 3 ay ilâ 18 yaş arası çocuklardan oluşuyordu. Konsültasyon istemlerinin çoğu Pediatri bölümünden gelmekteydi (%76). Beyin patolojileri en sık saptanan tıbbî hastalıktı (%19.9). Konsültasyon istem nedenleri arasında zekâ düzeyinin belirlenmesi ve psikiyatrik yönden tanı değerlendirmesi başta yer alıyordu. En sık konulan psikiyatrik tanı majör depresyondu (%12.8) ve yaşça daha büyük çocuklarda depresyonun daha fazla olduğu tesbit edildi ($p<0.0001$). Çocukların annelerinde majör depresyon oranı %29.5'tu. Yatan hastaların konsültasyonlarının %64,4'ünde konsültan hekime primer tedavi ekibinden eşlik eden bir sağlık görevlisinin olmadığı ve annelerin %30.8'inin konsültasyonun neden istendiği konusunda

bilgilendirilmediği belirlendi. Annelerin konsültasyon hakkında önceden bilgilendirilmesinin görüşmeye ilişkin tepkilerini olumlu yönde etkilediği bulundu (p<0.0001).
Tartışma: Son on yılda bebeklik dönemini de kapsayacak biçimde büyük bir artış gösteren konsültasyon istemleri konunun âcilen ele alınması gerektiğini göstermektedir. Majör depresyon hem çocuklarda hem de annelerinde en sık saptanan ruhsal bozukluk olması bakımından özel dikkat gerektirmektedir. Konsültan hekimle çocuğun primer hekiminin yüz yüze görüşmesi ve ana babaların sürece etkin katılımlarının sağlanması ve desteklenmesi gerekmektedir.
Sonuç: Konsültasyon-liyezon hizmetlerinin daha kapsamlı biçimde sunulabilmesi için hasta çocukların hekimleriyle işbirliği içinde çalışacak psikiyatri ekibinin oluşturulması gerekmektedir.
Anahtar Kelimeler: konsültasyon liyezon, çocuklar, süreğen hastalık

INTRODUCTION

Child consultation-liaison psychiatry adopts a multidisciplinary approach to children with both physical and behavioral-emotional disorders. It is based on a biopsychosocial model which considers the biological, psychological, and social aspects of the child within a developmental context (Steiner 1999). The first step of this process is consultation, which is the request of a non-psychiatric clinician for a psychosocial account of a child's difficulties. Liaison services are complementary to consultation, in that they require regular close contact with the referring clinics. Therefore, the consultant works with medically ill children, with their anxious parents, with ward staff in relating to their patients and with the hospital administration to establish a more psychologically attuned environment in the hospital (Tüzün 2000, Rauch and Jellinek 2002).

Emotional and behavioral problems have been reported in 18-20% of children who receive pediatric care. Even a higher rate should be expected in children with chronic illnesses in facilities for advanced care and treatment. Traumatic medical interventions have a negative psychological effect on these children in addition to the chronic nature and grave course of their disorders (Knapp and Harris 1998a; Knapp and Harris 1998b; Barlow and Ellard 2004; Pless et al. 1993; Ekşi 1990). Pediatricians might have difficulties in identifying psychiatric comorbidity and therefore, psychiatric consultation might be necessary for a relatively small number of cases (Costello et al. 1988).

The co-occurrence of pediatric and psychiatric disorders may either be coincidental or interrelated in causality. Eating disorders which lead to a number of physical symptoms, depression which may lead to weight loss and delirium which is caused by a variety of illnesses are examples of the latter. Coincidental comorbidity on the other hand, which is more common than predicted, was found to be the leading reason of consultation requests (Steiner and Shaw 2000).

Comorbid pediatric and psychiatric illnesses negatively affect the assessment and treatment processes of children. While acute medical illnesses and hospitalization elicit anxiety disorders, chronic medical illnesses usually lead to problems related to a negative body image and low self-esteem. Coincidental comorbidities such as mental retardation, learning disabilities and attention deficit-hyperactivity, decrease children's abilities to understand the illness and hinder their compliance with treatment (Steiner and Shaw 2000). The above-mentioned studies imply that psychiatric consultation is not only an opportunity to provide children relief of their emotional and behavioral problems but is also a way to enhance the effectiveness of medical treatment as well.

Our observations have led us to believe that, for medically ill children and their accompanying mothers' hospital settings are in need of systematic psychiatric assessment and carefully planned psychosocial support. In order to meet these demands, it was understood that consultation-liaison services required constant improvement. Therefore, the present retrospective chart review study was designed to evaluate all child psychiatry consultations referred to a university hospital child psychiatry department over a twelve-month period, to obtain a descriptive outline of the immediate requirements of our consultation-liaison services.

MATERIAL AND METHODS

The study sample consisted of all consecutive children (n=221) referred to the Ankara University Department of Child Psychiatry between dates 1.1.2004–1.1.2005. Of these referrals, 40.7% (n=90) were inpatients and 59.3% (n=131) were outpatients. Children's age range was 3 months-18 years. All children and their accompanying mothers were evaluated by a child psychiatrist.

Clinical charts were evaluated with respect to demographics, reasons for referral, psychiatric morbidity of children and their mothers, treatment and follow-up. Special attention was paid to whether and how mothers were informed regarding the rationale of referral and how referring and consulting clinicians communicated during the consultation process.

A structured interview form specifically designed for the standard clinical evaluation of referrals was used as

Table I. Demographic Characteristics of the Sample.

Age groups (yr)	Female n	(%)	Male n	(%)	Total n	(%)
0–3	17		14		31	(14)
4–6	30		20		50	(22.6)
7–11	33		43		76	(34.4)
>12	28		36		64	(29.0)
Total	108	(48.9)	113	(51.1)	221	(100)

the main source of data. A brief demographic data sheet consisted of parents' age, children's age, parents' level of education, and employment status. A retrospective review of clinical charts was conducted for the medical illnesses of the children and the durations of present and previous hospitalizations. Additionally, reasons for referral, mothers' reactions to being referred to child psychiatry and psychiatric diagnoses of children and their mothers were recorded. DSM-IV (APA 1994) and DC: 0-3 diagnostic criteria (DC: 0-3 1995) were used for the psychiatric assessments of all cases. Informed consent was obtained from all parents. The protocol of the study was approved by the Medical School Board of Ethics at Ankara University.

The statistical analysis was performed by SPSS 11.0. Descriptive analyses were used for sociodemographic and medical data. Chi-square analyses and Mann Whitney-U tests were conducted for the frequency comparisons of nominal variables and continuous variables respectively. P values of less than 0.05 were considered significant.

FINDINGS

Out of 1995 first-time admissions to the child psychiatry department over a one-year period, 221 (11.08%) were referred for consultation, 131 (59.3%) of which were outpatients and 90 (40.7%) were inpatients. Mean age of the study population was 8.4 years (SD=3.94, range 3 months-18 years). Mean age was 8.08 (SD=4.05) for girls and 8.71 (SD=3.82) for boys (Table I).

Most of the children came from nuclear families (89.1%, n=197) with moderate income levels. Mean schooling time was 7.41 years (SD=4.38, range 0-15) for mothers and 9.98 years (SD=4.2, range 0-15) for fathers.

Although 28.5% (n=63) of the children were preschoolers, only 3.2% (n=7) attended preschool classes. The elementary school population was 48.8% (n=108) and 2.3% (n=5) attended high school. On the other hand, a relatively large group of children (17.2%, n=38) did not attend school at all due to chronic illnesses. Of these children, 15.8% (n=6) were in the 4-6 year age group, 55.3% (n=21) were in the 7-11 year age group and 28.9% (n=11) were 12 and older. Their illnesses were epilepsy and other organic brain pathologies (55.3%, n=21), malignancies (31.5%, n=12), and trauma sequelae (13.2%, n=5).

Table II. Departments from which Children were referred for Consultation Purposes.

Department/ Divisions	Outpatients n	(%)	Inpatients n	(%)
Neurology	55	(24,9)	-	
Endocrinology	25	(11,3)	15	(6,8)
Gastroenterology	4	(1,8)	2	(0,9)
Hematology-Oncology	4	(1,8)	21	(9,5)
Nephrology	6	(2,7)	4	(1,8)
Cardiology	4	(1,8)	2	(0,9)
Social Pediatrics	5	(2,3)	1	(0,5)
Emergency	15	(6,8)	5	(2,3)
Child Surgery	6	(2,7)	12	(5,4)
Orthopedics	- 4			(1,8)
Plastic Surgery	1	(0,5)	3	(1,3)
Neurosurgery	2	(0,9)	2	(0,9)
ENT	1	(0,5)	-	
PMR	2	(0,9)	16	(7,2)
Dermatology	1	(0,5)	2	(0,9)
Radiation Oncology	-		1	(0,5)
TOTAL	131	(59,3)	90	(40,7)

Note: ENT = Ear Nose Throat; PTR = Physical Medicine and Rehabilitation.

Children were predominantly referred from the Department of Pediatrics (76%, n= 168) and another 14% (n= 31) were referred from various departments of surgery (Table II).

The distribution of physical illnesses of children referred for consultation is presented in Table III.

Only 14.5 % (n=32) of the children were in the acute phase of their illnesses whereas 13.5 % (n=30) had been ill for 1-6 months and 72% (n=159), for over 6 months. At time of referral for consultation, the duration of hospitalization was 1-7 days for 25.6% (n=23) of children, between 1 week and 1 month for 43.3% (n=39), 1-3 months for 21.1% (n=19), 3-6 months for 3.3% (n=3) and longer than 6 months for 6.7% (n=6).

A majority of children were referred for the evaluation of a comorbid psychiatric disorder and/or of cognitive development. Table IV presents the reasons for referral to psychiatric consultation.

In 64.4% of the cases (n=58), staff of the referring department neither attended the evaluation nor introduced the consultant psychiatrist to the child or parent; in 35.6% (n=32) a staff member accompanied the psychiatrist. Most of the mothers (69.2%, n=153) had been infor-

Table III. Physical Illnesses and Symptoms of Children Referred for Consultation.

Physical Illnesses and Symptoms	Outpatients (n)	Inpatients (n)	Total n (%)
No Physical Illness	14	1	15 (6,7)
Epilepsy	17	1	18 (8,1)
Organic Brain Diseases	30	14	44 (20,0)
Headaches/Stomach Aches	17	2	19 (8,6)
Retarded Speech or Walking/Speech Disorders	4	-	4 (1,8)
DM/DI	6	4	10 (4,6)
Short Stature/Obesity	11	1	12 (5,5)
Hypothyroidism/hyperthyroidism	3	1	4 (1,8)
IBD/Chronic Liver Disease	4	2	6 (2,7)
CRF	8	4	12 (5,4)
Leukemia/Lymphoma/Aplastic Anemia	-	16	16 (7,2)
Solid Tumors	4	11	15 (6,8)
Acute Rheumatoid Fever	3	3	6 (2,7)
Trauma/Burns/Fractures	5	15	20 (9,0)
Elective Surgery/Biopsy	3	4	7 (3,2)
Psoriasis/Vitiligo	1	2	3 (1,3)
Ambiguous Genitalia	1	9	10 (4,6)
Total n (%)	131 (59,3)	90 (40,7)	221 (100)

Note: DM = Diabetes Mellitus; DI = Diabetes Insipitus; IBD= Inflammatory Bowel Disease; CRF = Chronic Renal Failure.

med of the consultation previously whereas 30.8% (n=67) were not expecting a psychiatric evaluation of their children. While 92.3% (n=204) of the mothers were affirmative of the necessity for psychiatric evaluation, a 7.7% (n=17) displayed an oppositional attitude towards the consultation process, stating that it was unnecessary. The relation between informing mothers about the reasons for referral and maternal attitudes towards consultation was found to be significant (_2=29.04; p< 0.0001).

Table V shows children's psychiatric diagnoses according to DSM-IV and DC: 0-3 diagnostic criteria. Major Depression was the most common psychiatric disorder among referred children (%12.8, n=28) and was followed by Attention Deficit Hyperactivity Disorder, Adjustment Disorder and Separation Anxiety Disorder. Reasons that led to the referral of children with Major Depression were verification of the diagnosis and treatment planning (82.1%, n=23), suicide attempts (%10.8, n=3) and compliance problems to treatment (7.1%, n=2). Variables such as the gender of children, duration of physical illness, duration of hospitalization and maternal depression were found to be unrelated to children's depression (p>0.05). An age main effect was found such as, depressed children (X=11,03±2.8) were found to be older than non-depressed children (X=8,02± 3,9); Mann Whitney U Test; Z= -3.82, p<0.0001.

Cognitive development of 51.1% (n= 113) of children were assessed with tests or scales which were appropriate for their ages. More than half of these children (65.5%, n=74) were mentally retarded. Among the children who did not receive a DSM-IV Axis I diagnosis (n=86), 47.7% (n=41) had mental retardation and 12.8% (n=11) had normal intellectual capacity. Cognitive assessment was not performed for the rest (39.5%, n=34).

One to two assessment sessions were held with 39.8% (n=88) of children. A substantial proportion of children (60.2%, n=133) attended three or more sessions for treatment purposes. In 43% (n=95) of the children, a psychotherapeutic approach was the treatment of choice whereas, additional psychotropic medication was used in 29% (n=64). Twenty-eight % (n=62) were referred to special education.

Table IV. Reasons for Referral to Psychiatric Consultation.

Reasons	Outpatients (n)	Inpatients (n)	Total n (%)
Psychopathology	112	59	171 (77.3)
Suicide Attempt	2	3	5 (2.3)
Adjustment Difficulties to	6	23	29 (13.1)
Treatment			
Evaluation Prior to	1	2	3 (1.4)
Transplantation			
Family Counseling	10	3	13 (5.9)

Table V. Children's Psychiatric Diagnoses According to DSM-IV and DC:0-3 Diagnostic Criteria.

Psychiatric Diagnoses and Symptoms	Total	
	n	(%)
No specific diagnosis	86	(38.9)
Major Depression	28	(12.8)
Adjustment Disorder	15	(6.8)
Somatoform Disorder	8	(3.6)
Acute Stress Disorder	4	(1.8)
Bipolar Affective Disorder	1	(0.5)
Psychotic Disorder	1	(0.5)
Delirium	1	(0.5)
ADHD/LD	20	(9.0)
Impulse Control Disorder	4	(1.8)
Tic Disorder/OCD	2	(0.9)
Separation Anxiety Disorder	17	(7.7)
Regulatory Disorder	14	(6.3)
Pervasive Development Disorder	2	(0.9)
Enuresis/Encopresis	12	(5.4)
Speech and Language Disorder	3	(1.3)
Not Applicable	3	(1.3)
Total n (%)	221	(100)

Note: ADHD =Attention Deficit Hyperactivity Disorder; LD = Learning Disorder; OCD = Obsessive Compulsive Disorder, Not Applicable = Exact diagnosis was not determined due to unconsciousness because of medical illness.

Among these children 5% (n=11) were prescribed psychotropic medication.

When children's mothers were also assessed clinically according to DSM-IV diagnostic criteria, 29.5% (n=65) were found to have Major Depression. No relations were found between maternal psychopathology and children's psychiatric diagnoses ($p>0.05$).

DISCUSSION

The present study aimed to outline the characteristics of child psychiatry consultations over a twelve-month period. Consultation services were provided for a total of 221 children whereas the number of children referred for consultation to the same department during a twelve-month period in 1992 was reported to be 115 (Aysev and Kerimoğlu 1994). The comparison of the two studies showed that the number of departments which referred children had also increased over the last 12 years. This difference was attributed to the increasing awareness of psychiatric problems and risk factors in sick children by non-psychiatrist clinicians and therefore to the developing consultation-liaison collaboration between departments. In the present study, 14% of the referred children were 0-3 years old, which was an age group that did not exist in the previous study. This is an important finding which shows that there is an increasing awareness among the non-psychiatrist physicians, of the psychiatric problems of infants and toddlers. The establishment of the Infant Psychiatry Unit in the Child Psychiatry Department in 1997 is also believed to have affected an increase in the referrals of this age group.

From a developmental point of view, psychopathology in children is the result of dynamic interrelations between risk factors and protective factors belonging to children, their families and their environment (Mrazek 2002, Sameroff and Fiese 2000). In this respect, children included in this study should be considered as belonging to a high-risk population. A majority of children in our sample had chronic illnesses and around 1/4th of these children who were in the school age range could not attend school. Most of the children who did not attend school had organic brain pathology/epilepsy or malignancies. These findings are consistent with the literature in which school non-attendance and academic failure compared to peers in chronically ill children has been reported. School non-attendance was found to be due to the illness itself, to treatment procedures or to the physical and neurological disabilities caused by the illness (Sexson and Madan-Swain 1993). Absenteeism keeps children away from their peers and daily activities and causes academic underachievement; hence, it is an additional risk factor for children who are trying to adjust to illness and hospitalization. An important measure would be to establish age-appropriate educational and recreational opportunities for children, during long hospitalization periods. Sourander et al. (2004) have stated that the school environment provides the opportunity to detect psychopathology development at an early stage when symptoms are still at a sub-threshold level and therefore to take preventive measures. To our knowledge, Pediatric departments in our country do not have the required facilities and staff to provide schooling services to children.

Earlier studies on family adjustment and functioning showed that, mothers are especially prone to depression in families of chronically ill children (Timko et al. 1992, Manuel 2001, Yeh 2002, Ashkani et al. 2004). Furthermore, parents presented with more psychiatric symptoms than their children, which was attributed to their understanding of the risks of their children's illnesses and their treatments (Stuber 1996). Children's symptoms such as pain or disability, low socioeconomic level, insufficient support received from the spouse, the utilization of avoidant coping strategies are some of the variables that have been found have a negative impact on family functioning and parent mental health (Timko et al. 1992, Rao et al. 2004). Maternal perceptions and beliefs about the ill-

ness should be assessed in order to understand the severity of stress they are subject to (Knapp and Harris 1998a). For example in Persia and India, parents tended to perceive their children's chronic illness as fate and believed that help would come from God alone. Studies also showed that there parental symptoms of somatization and depression were correlated with fatalism (Ashkani et al. 2004, Rao et al. 2004). In order to be able to care for their children well, parents themselves should be supported with culturally sensitive education programs (Boling 2005). Studies in our country have also shown that children's chronic illness is a psychological risk factor for parents as well (Baysal 1993, Yavaş et al.1994). In the study sample, the rate of major depression in mothers was found to be 29.5 %. This finding has limited generalizability because psychiatric assessment did not encompass all mothers and the study lacked a comparison group. Nevertheless, this finding indicated to the fact that mothers of ill children should be considered as a clinical group which deserves routine psychological assessment and psychosocial support.

The present study showed that 3/4th of consultation requests were for psychiatric diagnosis and for cognitive development assessment. Eighty six children (%39), did not receive an Axis-I diagnosis and half of these children were found to be mentally retarded. Cognitive developmental delay was found to have a negative effect on children's understanding of their illness and their responsibilities with respect to treatment (Steiner and Shaw 2000). Therefore, children's cognitive capacities should be taken into consideration when information about their illness and treatment procedures are to be given.

Major depression was the most common Axis-I disorder in the sample. According to the stress-diathesis model, depression in chronically ill children has been defined as the result of interactions between children's cognitive vulnerability factors such as negative attribution style and low self-esteem, characteristics of the illness and environmental stressors (Burke and Elliott 1999). In the present study, 82.1% of depressed children were referred for the verification of suspected psychopathology. In a previous study however, pediatricians correctly identified 84% of the healthy children, but only 17% of the children with psychiatric problems (Costello et al. 1988) which brings the question to mind, whether there were other children with psychopathology who had not been identified by pediatricians and therefore had not been referred for psychiatric consultation. The diagnosis of childhood depression is a relatively new phenomenon and its treatment with psychotropic medication is still under debate. It is difficult to diagnose depression in children with chronic illnesses due to the fact that depression symptoms such as fatigue, insomnia, anorexia/weight loss and difficulty concentrating are also symptoms of the illness itself. Depression has also been reported to increase the health care costs of such patients (Rauch and Jellinek 2002, Steiner and Shaw 2000, Szigethy et al. 2002). As seen in the present study, high rates of depression and anxiety disorders in chronically ill children indicates to the fact that medical-surgical and psychiatric comorbidity is an occurrence which should not be disregarded.

It is important that the referring clinician prepares the child and parents for psychiatric consultation. For many parents psychiatric consultation may stir certain prejudices. Parents have been reported to feel that they were labeled as "inadequate parents" or their children as "abnormal" (Steiner and Shaw 2000) when they learned that a psychiatric consultation was necessary. One third of mothers of the referred children in the present study were uninformed about the consultation request and the reasons behind it. Parents who were prepared were found to assume a more trusting and cooperative approach towards the consultation process.

Furthermore, the findings of our study revealed that in 64% of the cases, the consultant was not accompanied or introduced to the child and parent by a member of the referring team. Consequently, the results of the psychiatric assessment and the treatment plan can be delivered to the referring clinician in written form only. We believe that the lack of personal contact between the referring team and the consultant reduces the efficiency of interdisciplinary collaboration and negatively affects children's treatment.

CONCLUSION

Our findings indicate a high rate of psychiatric morbidity in children referred for psychiatric consultation, and their mothers, which led us to consider the possibility of psychopathology in non-referred cases as well. Therefore, we understand that the institution of a comprehensive consultation-liaison unit which comprises a sufficient number of multidisciplinary mental health professionals (child psychiatrists, psychologists, social workers) is vital in our hospital setting.

A second critical issue is the implementation of educational services in medical-surgical inpatient services for children who miss school due to long term hospitalizations.

As a third measure, the need for psychiatric consultation should be clarified for the child and the accompanying parent(s) in order to attain their full collaboration. Finally, there should be personal contact between refer-

ring and consulting clinicians to ensure complete understanding of the requirements and intervention procedures involving the consultation.

A limitation of the present study was that the study sample was drawn from a university hospital setting where advanced inpatient treatments for mostly chronic illnesses were performed during long hospitalization periods. Furthermore only selected patients were referred for consultation, therefore the study findings cannot be generalized to all sick children and their mothers.

Future investigations which compensate for these limitations should also focus on the risk and protective factors regarding psychiatric morbidity in sick children and their parents. Research in this area should also have a wider scope to include family dynamics and community variables in the context of our own culture.

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