

Unmet Need for Specialty Mental Health Services Among Children Across Europe

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Objective: The aim of this study was to examine the determinants of use of mental health services for children across Europe, with a specific focus on differences in the availability of mental health resources.

Methods: Data were drawn from the School Children Mental Health in Europe Project. Parent- and teacher-reported child mental health status was based on the Strengths and Difficulties Questionnaire. Sociodemographic characteristics of parents and children, as well as academic performance and use of mental health services in the previous 12 months, were collected. Countries were categorized as having high versus low mental health resources. The sample comprised 4,894 schoolchildren in seven countries.

Results: Across Europe, only 25.6% of children with a mental disorder had received mental health services in the previous 12 months, including 31.5% in high-resources countries

and 18.9% in low-resources countries ($p=.001$) ($N=4,867$). The presence of any mental disorder, maternal psychological distress, gender, living in a single-parent home, and low academic performance were determinants of service use. The effect of resources group on the likelihood of receiving services remained significant when the analyses controlled for all predictors (odds ratio=1.41, $p<.01$). Determinants differed between groups—maternal psychological distress was associated with service use in high-resources countries, and gender was associated with service use in low-resources countries.

Conclusions: The findings point to a substantial portion of unmet need across Europe and to major differences in access to care in low- versus high-resources countries. Efforts are needed to address unmet need among children with mental disorders, especially in low-resources countries.

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In the United States, only half of the children with mental health problems receive mental health services (1). In Europe, the proportion of children with unmet need is even greater. For instance, in the Netherlands, only 42.5% of the children with severe mental health problems receive mental health services (2). In Germany, this percentage is even lower—a large population study revealed that 18.6% of children with mental health problems sought help from mental health professionals (3). The surprisingly high level of unmet need found in countries that have well-developed health care systems raises concern. Moreover, it stimulates questions about the status of unmet need in less affluent European countries, where the mental health care system is not as developed and where mental health professionals are less available compared with wealthier member states (4).

The fact that a substantial portion of children with mental health problems do not receive mental health services, even in Europe's most affluent countries, is troublesome considering the long-term consequences of untreated mental health problems (5). It is therefore important to identify the

determinants that are associated with the use of mental health services in both affluent and less affluent countries.

Differences in service use by children from the same country can also be expected. Studies on service use in Europe have found that mental health services are used more often in lower socioeconomic groups (3,6–8). However, it can also be argued that the impact of socioeconomic status on service use depends on the organization of the health system (9). In other words, if a country has a well-developed health system that is accessible to persons of all income groups, the effect of socioeconomic status might diminish. In addition, the recognition by parents and teachers of mental health problems among children and the acknowledgment that the nature of the problem is related to mental health might further modulate access to care to appropriate services (10).

Finally, individual factors, such as parental psychological distress (11), parental education level, and marital status (7,11), have also been shown to be related to use of child mental health services, although the role of these individual factors has been disputed. In addition, several child-related

factors are correlated with the use of services, including gender (9) and age (3,8,9,12). Poor academic performance may be associated with greater specialty service use (8), and the type of problem behavior (externalizing or internalizing) may also influence parental help-seeking behaviors (9).

The objective of the study was to examine the determinants of use of specialty mental health services for children with mental health problems. First, the role of availability of mental health resources on the relationship between child mental health and service use was evaluated by comparing use of child mental health services in two groups of countries classified as having high versus low mental health resources. Second, the role of additional factors in use of child mental health services was examined; these factors included maternal education level, marital status, and psychological distress; child gender and age; academic performance; and type of mental health problem.

METHODS

Participants

Data were drawn from the School Children Mental Health in Europe Project, a cross-sectional survey conducted in the Netherlands, Italy, Germany, Lithuania, Bulgaria, Romania, and Turkey in 2010. Approximately 50 primary schools were randomly selected in each country. Classes within each school were randomly selected, and approximately six children were randomly selected from each class. At every school there were a total of 48 participating children, except in the Netherlands and Germany, where more children were approached. A detailed description of these procedures is presented elsewhere (13). Passive consent was used—parents of the selected children received a written informed consent form and were told to sign and return the form to school should they refuse to participate. Children were included if they were present on the day of the assessment, unless their parent actively refused to provide consent.

Among participating schools, an average of 63.4% of selected children participated, with a response rate ranging from 50.5% (Turkey) to 90.5% (the Netherlands). The response rate for West Germany was 53.9%; East Germany, 54.3%; Lithuania, 57.7%; Italy, 62.6%; Bulgaria, 64.1%; and Romania, 67.5%. Participating children's teachers were asked to complete a questionnaire regarding the child's mental health and to document the child's academic performance. Parents received a packet containing background questions about their sociodemographic characteristics and a questionnaire regarding their child's mental health status, which they were invited to return in a prepaid envelope. All countries received approval from relevant local ethical review boards. [A list of each country's ethical review boards is available as an online supplement to this article.]

The total sample comprised data for 8,439 children, 7,321 teachers, and 6,031 parents. Overall, data from both parent and teacher reports were available for 5,670 children (13). Children were between the ages of six and 12 years old, with a mean age of 8.7 ± 1.4 . Because most of the parent respondents were female (81.8% of the total sample), only children

whose mother completed the questionnaire were included in this study, given that gender is known to influence some of the measures that were used. In 4% of the cases, the questionnaire was completed by a stepmother, a grandmother, or a female foster parent. As a result, the final sample included data for 4,894 children, and data on service use was documented for a total of 4,867 children.

Countries were classified as having high or low mental health resources on the basis of the number of mental health specialists per 100,000 inhabitants, as summarized in Table 1 (4,14–19). Western European countries in general appeared to spend more financial resources on mental health services (20). However, Lithuania had more psychiatrists, child psychiatrists, and psychologists per capita compared with other Eastern European countries, an indication of a more developed mental health system (21). As a result, Lithuania was classified in the high-resources group along with the Netherlands, Italy, and Germany. Low-resources countries included Bulgaria, Romania, and Turkey.

Measures

Child mental health status. The child's mental health was measured with the Strengths and Difficulties Questionnaire (SDQ) (21,22). Both the parent and child's teacher completed the SDQ. The SDQ contains 25 items divided into five subscales (hyperactivity/inattention, internalizing problems, conduct problems, peer problems, and prosocial behaviors). The SDQ is a widely used instrument that has demonstrated satisfactory reliability with good internal consistency (mean Cronbach $\alpha = .73$), cross-informant correlation (mean = .34), and retest stability after four to six months (mean = .62) (21).

In this study, the diagnostic algorithms provided by the instrument's authors, which combine informants and impact scores (<http://www.sdqinfo.org/c4.html>), were used to define unlikely, possible, or probable cases of internalizing or emotional disorders and externalizing disorders (conduct disorders and hyperactivity disorders) (23). Each of these variables was then recoded to represent the absence (unlikely or possible) or presence (probable) of each class of disorders.

Use of mental health services. Respondents indicated whether the child attended a visit in the previous 12 months to each of the following types of health professionals: general practitioners, pediatricians, psychiatrists, child psychiatrists, psychologists, psychotherapists, and social workers. Use of mental health services was defined as at least one visit in the previous 12 months to any mental health professional (psychologist, child psychiatrist, psychotherapist, and social worker). Visits to a general practitioner or pediatrician were excluded, given that the reason for the visit was not collected.

Determinants of service use. The determinants of use included maternal education level (high school or less, high school graduate, college or more, or other), marital status (single or in a relationship), and psychological distress; gender and age of the child; and academic performance

reported by a teacher (average to high academic performance or low academic performance).

Maternal psychological distress in the previous four weeks was assessed using the five-item mental health subscale of the 36-Item Short-Form Health Survey (SF-36) (24). This widely used instrument has been validated in numerous languages (25). Respondents are asked, "How much time during the past four weeks: Have you been a very nervous person? Have you felt so down in the dumps nothing could cheer you up? Have you felt calm and peaceful? Have felt downhearted and depressed? Have you been a happy person?"

Possible responses range from all of the time to none of the time. Answers are recoded to obtain a score of 0 to 100. For European countries, a cut point of 52 has been established to determine the presence of psychological distress (26). The SF-36 has good construct validity, high internal consistency, and high test-retest reliability and is strongly correlated with the 12-Item General Health Questionnaire (27,28).

Data Analysis

Using chi-square tests, descriptive analyses were conducted to examine which factors were associated with use of mental health services. The factors included in the analyses were child mental health, gender, age, and academic performance; and maternal psychological distress, marital status, and education level. Odds ratios were also determined, using the logit procedure. Logistic regressions were performed in the overall sample by using the variables that were significantly associated with service use in the univariate analyses ($p \leq .10$). These regressions were repeated to include interactions with mental health resources group. Next, a logistic regression was conducted separately for countries with high and low resources by using the same variables. Finally, logistic regression analyses, controlling for all predictors mentioned in the tables, were performed separately for each type of probable mental disorder. An alpha level of .05 was used for all statistical analyses. Data analysis was conducted with Stata SE, version 13.1.

RESULTS

Descriptive Statistics

Across Europe, only 25.6% of children with a mental disorder had received mental health services in the previous

TABLE 1. Countries with high and low mental health resources, as indicated by number of psychiatrists, child psychiatrists, and psychologists per 100,000 inhabitants

Level of resources	Source	GPs ^a	Psychiatrists	Child psychiatrists	Psychologists
High					
Germany	Samele et al., 2013 (15); Margraf, 2014 (16) (for psychologists)	65.9	15.2	5.0	56.2
Italy	Samele et al., 2013 (15)	75.8	7.8	3.1	68.3
The Netherlands	Samele et al., 2013 (15); Boer, 2013 (17)	73.0	18.8	2.7	100.0
Lithuania	Braddick et al., 2009 (4); Samele et al., 2013 (15)	74.0	17.8	3.2	7.7
Low					
Bulgaria	Braddick et al., 2009 (4); Samele et al., 2013 (15)	63.2	6.7	.3	.9
Romania	Braddick et al., 2009 (4); Samele et al., 2013 (15)	67.7	6.4	1.2	4.5
Turkey	Tatar et al., 2011 (32); Ministry of Health, 2006 (18); and World Health Organization, 2010 (19)	56.2	1.0	.3	1.0

^a Source: World Health Organization/Europe (14). GPs, general practitioners

12 months, including 31.5% in high-resources countries and 18.9% in low-resources countries ($p = .001$). Table 2 presents characteristics of the sample for all variables used in this study as well as the proportion of children associated with each characteristic who used mental health services in the past 12 months. Overall, 7.5% of children received services from a mental health professional in the previous 12 months, including 8.4% of children in the high-resources countries and 6.5% of children in the low-resources countries. The proportion of children who received services varied significantly by most parent and child characteristics variables. However, the presence of a disorder was a main predictor of the use of services.

Predictors of Mental Health Service Use Across Europe

In a logistic regression (Table 3), the availability of mental health resources predicted the use of mental health care, indicating that greater availability of mental health services was associated with higher odds of use of these services when the analyses were adjusted for key determinants. The presence of any probable mental disorder was the strongest predictor of mental health service use (odds ratio=4.61). Single-parent homes were associated with increased use of services, as were maternal psychological distress, child male gender, and poor academic performance. However, with the exception of the presence of any probable diagnosis, predictors of service use in high- and low-resources countries were not identical.

Examining specific probable disorders did not strongly modify the observed effects. However, ADHD had a significant effect on use of services in the high-resources countries,

TABLE 2. Unadjusted odds of using mental health services in the previous 12 months among 4,867 children from seven countries with high or low mental health resources, by children's sociodemographic and clinical characteristics

Characteristic	N	%	Use of mental health services		p	OR	95% CI	p
			N	%				
Country's mental health resources					.009			
High resources	2,582	55.0	218	8.4		1.33	1.08–1.65	.010
Low resources (reference)	2,285	45.0	148	6.5				
Total	4,867		366	7.5				
Parent characteristic								
Maternal education level					.476			
High school or less (reference)	571	13.3	39	6.9				.479
High school graduate	1,590	37.1	116	7.3		1.07	.73–1.56	
College or more	1,633	38.1	122	7.5		1.09	.75–1.59	
Other	492	11.5	27	5.5		.78	.47–1.30	
Marital status					.001			
Single	701	14.8	85	12.1		1.96	1.51–2.53	.001
In a relationship (reference)	4,029	85.1	265	6.6				
Maternal psychological distress					.001			
Yes	825	17.7	110	13.3		2.26	1.78–2.87	.001
No (reference)	3,832	82.3	244	6.4				
Child characteristic								
Gender					.001			
Boy	2,446	50.3	229	9.4		1.72	1.38–2.14	.001
Girl (reference)	2,421	49.7	137	5.7				
Age					.550			
5.0–8.7 years	2,237	53.9	162	7.2		1.07	.86–1.32	.550
8.8–13.0 years (reference)	2,612	46.1	201	7.7				
Academic performance					.001			
Low	689	14.7	105	15.2		2.77	2.17–3.53	.001
Average or high (reference)	3,998	85.3	267	6.1				
Any disorder ^a					.001			
Yes	557	11.4	142	25.6 ^b		6.28	4.97–7.93	.001
No (reference)	4,309	88.5	223	5.2				
Conduct disorder					.001			
Yes	377	7.8	97	25.9		5.50	4.23–7.15	.001
No (reference)	4,483	92.2	267	6.0				
Emotional disorder					.001			
Yes	158	3.2	38	24.0		4.22	2.88–6.19	.001
No (reference)	4,702	96.7	326	7.0				
Hyperactivity					.001			
Yes	96	2.0	38	39.5		8.87	5.80–13.55	.001
No (reference)	4,767	98.0	326	6.9				

^a Includes conduct disorder, emotional disorder, or hyperactivity^b The percentage of children with a disorder who used mental health services was higher in high-resources countries (31.5%) compared with low-resources countries (18.9%) ($p=.001$).

which was not found in the low-resources group, although the ADHD \times resources group interaction was not significant (Table 4).

DISCUSSION

This study sought to identify the factors associated with use of specialty mental health services among children in European countries with high or low mental health resources. A greater proportion of children living in a country characterized by high mental health resources received specialized help for a mental health problem compared with children in countries with low resources. Furthermore, the presence of a probable disorder was more strongly

associated with receiving services in countries with greater resources.

In this study, only 25.6% of children with a probable mental disorder received any services in the previous 12 months. Importantly, any service use was construed as any visit with a psychiatrist, psychologist, therapist, or social worker. The study did not document the number of visits nor did it collect data on the use of psychotropic medication. Therefore, access to services is likely to be overestimated, considering that one visit is not sufficient to appropriately treat a child's mental disorder. That being said, a substantial level of unmet need for mental health services has been reported in a number of regions around the world (1–3). Unmet need may be related to stigmatization and taboos surrounding mental health problems, particularly in European countries with low mental health resources. Parents in these countries may be reluctant to seek help from a professional because of a fear of social judgment (4,29). This possibility opens clear avenues for targeted communication efforts and information campaigns for these populations.

In addition, increasing mental health resources may significantly decrease unmet need for services.

The lack of mental health resources remains a major contributor to the low percentage of children with minimal access to specialty mental health care. There are substantial between-country differences in resources among European Union (EU) member states. Recent articles underlined the difficulties faced by countries that were part of the Soviet Union or the Soviet-led Eastern Bloc, such as Bulgaria (30) and Romania (31), in trying to design mental health plans. These countries have been working on these plans with the support of the World Health Organization and non-governmental organizations (NGOs) since 2000–2001. Since joining the EU in 2007, these countries have implemented

TABLE 3. Predictors of use of mental health services by 4,387 children from countries with high and low mental health resources^a

Predictor	High resources (N=2,379)			Low resources (N=2,008)			Total (N=4,387)			High vs. low mental health resources		
	AOR ^b	p	95% CI	AOR ^b	p	95% CI	AOR ^b	p	95% CI	AOR ^b	p	95% CI
Any disorder (reference: none)	5.61	.001	3.95–7.97	3.38	.001	2.15–5.30	4.61	.001	3.50–6.07	1.71	.042	1.01–2.87
Single parent marital status (reference: in a relationship)	1.35	.113	.93–1.94	1.57	.060	.98–2.50	1.44	.012	1.08–1.92	.95	.869	.52–1.72
Maternal psychological distress (reference: none)	1.96	.001	1.39–2.77	1.30	.228	.85–2.00	1.65	.001	1.26–2.16	1.63	.075	.95–2.80
Male (reference: female)	1.35	.063	.98–1.85	1.60	.018	1.08–2.37	1.45	.003	1.13–1.85	.90	.689	.55–1.48
Low academic performance (reference: average or high)	1.43	.056	.99–2.07	1.45	.121	.91–2.32	1.41	.019	1.06–1.89	1.25	.432	.72–2.17
Countries with high mental health resources (reference: low resources)							1.41	.005	1.11–1.79			

^a Use of mental health services was defined as any visit with a mental health professional in the previous 12 months.

^b Adjusted odds ratios (AORs) are adjusted for all variables presented in the table in a logistic regression. Data were missing for some of the variables adjusted for in the model.

laws to protect the human rights of psychiatric patients and have made efforts to establish outpatient care and reduce long inpatient stays, albeit with only limited results.

In Turkey the situation is also dire (32); all of these countries are highly dependent on NGOs that are not sustainable; thus the mental health care organization is fragile, understaffed, and underfunded. However, Lithuania, a former Soviet country that joined the EU in 2004, is more advanced. It has been able to develop child psychiatric care, thanks in part to support from Nordic countries, and is now considered a country with high mental health resources, which illustrates the possibilities for improvement among EU countries that have fallen behind.

After adjustment for other determinants, analysis of the overall sample showed that boys were more likely than girls to receive mental health services, a finding that is in line with existing literature (8,9,12). Furthermore, in the total sample, having a single parent and maternal psychological distress were associated with more frequent use of mental health services (7,11). It has been suggested that maternal psychological distress may cause the mother both to experience and to report the child's behavior as more problematic compared with mothers without psychological distress and may directly affect the child's behavior (33). In contrast with

previous findings, however, use of mental health services did not increase with age. The latter result could be explained by the fact that this study focused on young children between the ages of six and 12, providing a limited range for studying the effects of age.

Importantly, in stratified analyses examining the predictors of access to care in high- versus low-resources countries, significant differences were found. In low-resources countries, maternal psychological distress was not related to a child's likelihood of receiving care. That contrasts with the finding that maternal psychological distress was a predictor of care in high-resources countries. This finding may point to the fact that different factors are implicated in maternal psychological distress in low- versus high-resources countries. In countries with lower resources, the factors that contribute to maternal psychological distress, such as poverty, may keep the focus on basic needs rather than on the child's mental health status (34,35).

Several limitations should be acknowledged when interpreting the findings. First, the assessment of mental health services was a dichotomous variable indicating the presence of any visit with a mental health professional and did not reflect minimally adequate treatment. Additional studies are needed in European countries with low and high resources

TABLE 4. Odds of use of mental health services by 4,387 children from countries with high and low mental health resources, by category of disorder^a

Disorder	High resources (N=2,379)			Low resources (N=2,008)			Total (N=4,387)			High vs. low mental health resources		
	AOR	p	95% CI	AOR	p	95% CI	AOR	p	95% CI	AOR	p	95% CI
ADHD (reference: no ADHD)	5.81	.001	3.30–10.24	1.8	.319	.56–5.77	4.56	.001	2.78–7.48	3.21	.070	1.66–4.31
Conduct disorder (reference: no conduct disorder)	4.43	.001	2.85–6.28	2.70	.001	1.63–4.47	3.56	.001	2.61–4.85	1.61	.114	.89–2.88
Emotional disorder (reference: no emotional disorder)	3.72	.001	2.15–6.44	2.96	.001	1.52–5.74	3.29	.001	2.16–5.00	1.42	.422	.61–3.31

^a The analyses controlled for marital status, maternal psychological distress, and child gender and academic performance in each resources group and in the total group. Data were missing for some of the variables adjusted for in the model. Use of mental health services was defined as any visit with a mental health professional in the previous 12 months.

to better understand the actual care that is provided to children in terms of the number of visits, the type of provider, and the use of psychotropic medication. Furthermore, the study did not comprise visits to a general practitioner or pediatrician, who may be de facto providers of mental health care for children.

Second, assessment of child mental health was based on parent and teacher reports rather than on clinical evaluation. Third, the study did not include all relevant predictors of child service use. For example, there may be important differences in low- and high-resources countries regarding parents' conceptualizations of whether child symptomatology is a reflection of mental disorders, differences in help-seeking attitudes, and stigma associated with mental disorders and mental health treatment. Fourth, high- and low-resources countries were classified on the basis of information that we were able to find in the literature. It may be that the estimates of mental health professionals do not fully reflect the availability of resources. Questions about the comparability of results that use SDQ indicators to identify cases of mental disorders have recently been raised in a cross-national study comparing five- to 16-year-old children in considerably diverse population samples from Yemen, Brazil, Great Britain, Norway, India, and Russia (36). However, in that study, the comparison used various indices based on the SDQ total difficulties score and did not use the diagnostic algorithms used in this study. A recent publication examining the prevalence of mental disorders across Europe suggested that it may be appropriate to use the SDQ as an indicator of the probable presence of externalizing disorders. The study found that identification rates for these disorders was acceptable, although the SDQ was only moderately able to detect internalizing disorders (37). In addition, the results may not generalize to children who do not attend school at all or to children who attend specialized schools because of learning difficulties, mental health problems, or other impairments. Last, a larger sample might have yielded more precise estimates of the associations observed.

CONCLUSIONS

This study reported rates of use of mental health services among children ages six to 12 across countries in Europe with low or high mental health resources. The findings point to a substantial portion of unmet need across Europe and to major differences in access to care between the two groups of countries. Furthermore, the determinants of access to care differed between high- and low-resources countries. Overall, the results suggest that important efforts are needed to address a serious level of unmet need among children with mental disorders, especially in countries with low mental health resources. In addition, research in this area is needed to evaluate access to specialty services among European adolescents and to understand how children from racial and ethnic minority groups access care in their local areas.

Recent political events have led to major changes in a number of European nations due to a massive flow of refugee populations, of whom a large portion are youths. Future European studies should pay particular attention to these displaced youths, who are likely to be at particularly high risk for mental health problems and for whom specialized mental health services may be particularly difficult to obtain.

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