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Architecture and functioning of child and adolescent mental health services: a European 28-country survey

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Abstract

The WHO Child and Adolescent Mental Health Atlas published in 2005 reported that Child and Adolescent Mental Health Services (CAMHS) in Europe to differ substantially in their architecture and functioning. We aimed to evaluate in detail the current characteristics of CAMHS at national level across Europe, including legal aspects of adolescent care. We carried out an online mapping survey of all 28 EU countries, aimed at expert(s) in each country. We obtained data for all 28 countries. The characteristics and activities of CAMHS varied considerably between the 28 EU member states (i.e. availability of services, inpatient beds, and clinicians; organization and delivery of specific CAMHS services and treatments), as well as CAMHS funding sources and users access. Neurodevelopmental disorders were the most frequent diagnostic group for people seen at CAMHS (data available from only 46% (N=13) of the responding countries). 70% (N=20) of the 28 countries reported having an official national child and adolescent mental health policy, covering young people until their official age of transition to adulthood. The heterogeneity in resource allocation does not seem to match epidemiological burden. A marked improvement in the planning, monitoring, and delivery of mental health services for children and adolescents is needed.

Key words: *child and adolescent mental health services, youth mental health, Europe*

SEARCH STRATEGY (panel)

We searched PubMed from January 4, 2015 until January 15, 2015, using no language restrictions, for studies mapping the characteristics of CAMHS across European countries. Search terms were combined with MeSH terms: "Child and Adolescent Mental Health"[All Fields] AND "survey"[All Fields] AND "Europe"[All Fields], CAMHS[All Fields] AND ("europe"[MeSH Terms] OR "europe"[All Fields]) AND ("surveys and questionnaires"[MeSH Terms] OR ("surveys"[All Fields] AND "questionnaires"[All Fields])) OR "surveys and questionnaires"[All Fields] OR "survey"[All Fields]), "Child and Adolescent mental health"[All Fields] AND "service"[All Fields] AND "policy"[All Fields]. We excluded studies focusing on treatment of specific disorders, case studies, treatment methods, service user satisfaction, or clinical outcomes. To be included an article had to contain quantitative information on CAMHS-related policy or organization. We identified 11 papers on CAMHS organization and characteristics at a national level, three in Europe (Italy, England, Belgium) and eight outside Europe (Uganda, China, Cambodia, South Africa - two papers-, India, United States, Canada). We found no articles presenting or comparing CAMHS-related quantitative data at a European level.

INTRODUCTION

Transition to adulthood is the period of onset of most serious mental disorders that disable or kill in adult life. Three-quarters of adult mental disorders have an onset before the age of 25 years, and up to 50% before the age of 16 years.¹ Eight of the ten main causes of disability in young people aged 10–24 years are psychiatric and behavioural in nature.² Early intervention can reduce the severity and persistence of these disorders and lead to more favourable outcomes.^{3–5} Initiation of treatment is, however, often delayed until several years after onset, resulting in potentially avoidable disease burden.^{6,7}

Access to child and adolescent mental health services (CAMHS) remains difficult, owing to a large discrepancy between the number of young people needing help and the availability of resources, particularly in low-income and middle-income countries.⁸ As for general medical care, there is a clear distinction between services for children or adolescents and those for adults, with a nationally set age of transition. Profound conceptual, clinical, and ideological differences exist between CAMHS and adult mental health services,^{9,10} which impede continuity of care for young people.¹¹ McGorry has pointed out that this interface is “*the weakest link in a system where it should be most robust*”.¹² The most recent source of international data on country resources for CAMHS is the WHO Child and Adolescent Mental Health Atlas^{13,14}, published in 2005. This global initiative provided systematic information on 66 countries across five continents; in Europe, 25 countries were covered (including Iceland, Israel, Russian federation, Turkey and Uzbekistan). No subsequent studies have described CAMHS-related quantitative data at a European level.

The MILESTONE project aims to improve transitions for young people from CAMHS to adult mental health services across Europe (<http://www.milestone-transitionstudy.eu/>). As part of the project’s efforts to map the CAMHS-adult mental health services interface across European mental health services, we did a survey of CAMHS in all 28 European Union (EU) countries, investigating service configuration, characteristics, and activity.

METHODS

Survey sample

We identified child psychiatrists and representatives of national child-psychiatry associations within each of the 28 EU member states with the help of WHO Regional Office in Copenhagen and the coordinator of the WHO Child Atlas project.¹⁴ In eight countries (Belgium, Croatia, France, Germany, Ireland, Italy, the Netherlands, United Kingdom), the survey was completed by the MILESTONE Principal Investigator or by a member of his or her team. Full affiliations of country respondents are presented in the appendix. Individuals were invited to participate by email: if no reply was obtained after three approaches, or we received a negative answer, we invited another expert. The choice of the alternative expert was based on suggestions either provided by individuals previously approached or by Dr. Matt Muijen, Dr. Myron Belfer and the MILESTONE PIs (SS, TF, AM, FMN, DPO, US, ST).

Assessment instruments

We adapted the European Service Mapping Schedule¹⁵ to create the European CAMHS Mapping Questionnaire (ECM-Q): this was designed to aid description and classification of mental health services and to allow the measurement of service use; it integrates many of the domains used in the WHO CAMHS Atlas.¹⁴ The ECM-Q was finalized (appendix 2) after multiple revisions following internal review within the MILESTONE team, as well as taking into account the advice of external experts.

A dedicated web domain was developed in collaboration with an Italian software company (Kema SNC).

CAMHS was defined as a specialist, community based, multidisciplinary, mental health service delivering medical and psychosocial interventions for children and adolescents with mental health problems and disorders, or neuropsychiatric or developmental disorders within a specified catchment area with one Director or Consultant.

Young people were defined as under 18 years or under the age of majority in the country in question.

Data collection and analysis

Each respondent was sent login credentials to complete the online questionnaires. Missing or potentially ambiguous responses were identified by GS and GdG, and each respondent was sent a detailed list of queries. Respondents were sent up to three email reminders to

complete all sections of the questionnaire or clarify the figures provided. If we were still unable to obtain a response, we used data from the original submission.

Total population and the percentage of young people below the national legal age of majority were derived from Eurostat databases¹⁶, collected by GS and GdG.

Data were collated in Microsoft Excel 2013, imported into Stata13 (StataCorp. 2013. *Stata Statistical Software: Release 13*. College Station, TX: StataCorp LP) for cleaning and analysis, and analyzed and presented by JW and JG using appropriate descriptive methods.

Role of the funding source

The European Commission (FP7 program) had no involvement in the writing of the manuscript or in the decision to submit it for publication

RESULTS

Data were collected between October 1st 2014 and March 31st 2015, followed by quality control (from May 1st 2015 to September 30th 2015). We approached a total of 34 individuals, and obtained responses from one respondent in all 28 EU countries. Each country respondents was free to ask collaboration to other national colleagues for survey completion (names are included in the appendix). Over 95% of survey items were completed. For six countries (Estonia, Finland, Malta, Romania, Slovenia, Sweden) the original completed questionnaires had missing ($n = 20/28$) or ambiguous ($n = 11/28$) data and no answer was received to our requests for clarification.

The information was obtained from official national statistics or service reports (64% of countries, $N=18/28$), but also consultation with colleagues or experts (39% $N =11/28$), personal knowledge of the field (36%, $N=10/28$), and web searches (4%, $N=1/28$). 16 countries out of 28 (57%) were able to provide references (eg, publications, websites, national reports) containing information about the organization of CAMHS or the epidemiology of child and adolescent mental health disorders in their country (see ECM-Q, Q 10, appendix 2).

Provision of CAMHS

Young people comprise about a fifth (average: 19%) of the general European population: Bulgaria, Germany and Malta have the smallest proportion of young people (16%) and the Republic of Ireland has the largest (25%) (table 1). Age of majority is 18 for almost all

countries (89%, N=25/28), with the sole exception of Cyprus (17 years) and Malta and France (16 years).

The number of public CAMHS varies considerably across countries, from 2 each in Malta and Luxembourg to 939 in the UK (table 1, figure 1). The number of public CAMHS relative to the target population ranged from 12.9 per 100.000 young people (Finland) to 0.5 (Bulgaria). We did not collect information on how a service is delineated, so a service might be made up of many teams and work across a diverse range of settings.

There is marked heterogeneity in terms of inpatient beds from less than 2 beds per 100 000 young people in Portugal and Sweden to over 50 beds per 100 000 young people in Germany and the Netherlands (table 1, figure 2).

The number of child and adolescent psychiatrists per 100,000 young people varies from 1.9 in Bulgaria to 36 in Finland (table 1). The number of child and adolescent psychologists is generally higher than that of psychiatrists (except for Croatia, Czech Republic, Ireland, Portugal, and Slovakia).

Most countries (25/28) have a juvenile justice system that in 64% (N=16/28) countries enables connections with specialized or dedicated forensic child and adolescent mental health services. Specialized educational services for young people are available in most countries : for mental retardation in 89% (N=24/28) of countries, for learning disabilities in 86% (N=24/28), for physical and mental disabilities in 82% (N=23/28), for language and speech delay in 75% (N=21/28), and for behavioural problems in 64% (N=18/28). Only 57% (N=16/28) countries had specialized services for deaf or blind children (appendix 3).

Regarding the availability of specific facilities providing community outpatient child and adolescent mental health care, from 59 to 79% of countries (N=16/27 -22/28) thought that the provision of public, or state-funded, group homes, respite care placements, day patients' programmes, outpatient clinics, and health/primary health clinics was insufficient in their country. Private specialist services and foster care placements (of different types) are available in only half (respectively 48% and 54%, N= 13/27 and 15/28) of the responding countries. In Croatia, the Netherlands and Poland, outpatient care is also provided by non-governmental organizations (NGOs), by dedicated centres for youth and family (offering parenting support), or through community services (delivering assertive community treatment).

Half of the (14/28) responding countries reported that CAMHS offer language interpreters for patients unable to speak the national language, either for diagnostic assessment (50%, N=14/28) or for care delivery (43%, N=12/28). 39 % of countries (N=11) reported having such services available only in limited geographical areas, while 4 countries reported having none for diagnostic assessment (14%) or for care delivery (18%).

CAMHS opening hours vary considerably across the EU, ranging from two hours per day in Estonia to 12 hours per day in Romania, from Monday to Friday, with a mean of approximately 8 hours per day (Mean=7.76, SD=1.8). Mobile emergency (24 hours a day) CAMHS teams are available in less than half of the countries (43%, N=12/28) or active only in limited areas (36%, N=10/28).

Collaboration with other services

Less than half (43%, N=12/28) of the countries had a national protocol or agreement between schools and health services for facilitating appropriate and timely referrals to CAMHS for children with suspected learning disabilities. 13/28 countries (46%) had no such protocols and in Belgium coverage was restricted to a few communities or areas. Most countries (63%, N=18/28) confirmed the availability, in most or all areas, of specific protocols for the referral of severe cases of abuse or neglect to mental health care providers by other community services (eg, schools, social services, other public and private agencies). Similarly, 70% of responding countries (N=19/27) had regular relationships between CAMHS and child safeguarding services in most or all areas. In terms of referral procedures, 16/28 countries (57%) reported the existence of official guidelines for referring patients from primary to secondary or tertiary care.

Respondents from most countries indicated that there is at least one service user association (86%, N=24/28) and one family or caregivers' association (96%, N=27/28) operating (or in existence). The degree of involvement of such organizations in the past two years in the formulation or implementation of mental health policies at national level (ie, participation in meetings dedicated to this purpose) differed considerably across countries, ranging from "rarely" (18% for users and 11 % for family associations, N=5-3/28) and "not routinely" (39% for users, n=11/28, and 46% for family associations, N=13/28), to "frequently" (29%, N=8/28). In 14% of cases (N=4/28), the question did not apply, either because of the absence of national associations or due to the lack of specific national policies.

CAMHS activity data

A periodic activity report of CAMHS is obligatory in 86% (N=24/28) of countries (only Croatia, Germany, Luxembourg and Spain reported having no such requirement). Activity data were not available for 32% (N=9/28) of the responding countries, mainly due to the lack of national registries (presently available in 18 countries), or lack of access to such sources of information.

The percentage of young people treated in CAMHS in the past 12 months (figure 3) was 3-6% in 7 of 19 countries, 1-3% in 11 countries, and less than 1% in one country (Slovakia). According to the answers provided only by 36% of countries (N=10/28), the proportions of males being slightly higher (Mean 58%, DS=6%) than that of females (42%, DS=6%).

The number of recorded new cases, for the last year available was provided by 13/28 (46%) countries, and generally ranged between 0·2% and 2% of the young population.

Less than half of the countries (46%, N=13) could provide complete data for every diagnostic category, DSM-5 or ICD-10 based, and one of them (Czech Republic) could provide no breakdown of ICD-10 categories F80-F98. In all the countries, neurodevelopmental disorders are the most frequent diagnostic group for those receiving treatment from CAMHS. Information was not provided in sufficient detail to allow comparison between countries regarding specific developmental disorders. For some countries, more details can be found in the appendix 4-5).

Policy and legislation in child mental health and child rights

70% (N=20) of the 28 countries had an official national child and adolescent mental health policy, covering young people until their transition age. The age ranges mentioned in the policies for each country are listed in appendix 6. In two countries, the policy had been adapted in order to extend its coverage to a few years after the official transition age (Finland: 23 years; Germany: 21 years); such flexibility allows young patients to stay in services a few years longer after 18 years boundary if the treating clinician considers this more appropriate (i.e. eating disorder services). The key components of the policies include regulations on the types of health care provided and on the competency of care providers (covered by 63% of countries, N=17/27 replies), guidelines regarding access to services (59%, N=16/27), specific written standards of service provision (48%, N=13/27) and other matters, such as rights regarding consent and privacy (7%, N=2/27). Many sectors were reported to be involved in the development of policies about child and

adolescent mental health, including mental health (64%, N=18), primary care (54%, N=15), child protection (50%, N=14), health and social welfare (36%, N=10), human rights (29%, N=8), and other social services (7%, N=2).

All 28 EU countries have specific laws to protect children from abuse and exploitation. The majority of countries had formal procedures for informed consent (96%, N=27/28), confidentiality of health care services and records (N= 93%, N=26/28), and prescriptions of medications (n= 82%, N=23/28). Specific laws pertaining to the participation of children in experimental trials exist in 89% of the countries (N=25/28).

National expected minimal standards of care for mental health professionals working in CAMHS were reported for at least two thirds of surveyed countries; 86% (N=24/28) reported that such standards exist for psychiatrists, 75% (N=21/28) for psychologists, and 68% (N=19/28) for nurses. Standards of care include professional certification and maintenance of competency, in-service training, clinical supervision, and clinical practice guidelines. Standardized assessment of mental health services occurs in 68% (N=19/28) of the 28 countries: measures assessed include patients' satisfaction (43%, N=12/28), clinical outcomes (36%, N=10/28), families' satisfaction (32%, N=9/28), and other national requirements (32%, N=9/28), such as national accreditation of service providers, sentinel reporting systems, standards set by health insurance (ie, minimum number of staff, minimum staff qualifications).

Health financing

CAMHS across the EU receive funding through different channels (table 2). The most common source is government taxes (25/28 countries, 89%): in ten countries, this accounts for the majority (80-100%) of funding. Two other important sources of funding are service user families (68%, N=19/28) and social insurance, (61%, N=17/28) of countries. In about half of the countries, private insurance (57%, N=16/28) and NGOs (46%, N=13/28) play an important role in funding; international grants fund services in 6/28 (21%) countries. In Croatia, additional funding is provided by local communities. In all countries, families with a child or an adolescent with a disabling mental disorder receive subsidies or free government ancillary benefits in the form of exemption of all medical care costs. Other such subsidies or benefits include: access to specialized education programmes (96% of countries, N=27/28); provision of a disability pension (82%, N=23/28); access to institutional care (89%, N=25/28); provision of respite or practical help for caregivers

(71%, N=20/28), and provision of training or education for parents (61%, N=17/28). In 4/28 countries (14%), benefits include domiciliary care, rehabilitation courses for individuals and families, and financial assistance for parents or caregivers.

Data collection and quality assurance

Systems for collecting epidemiological data on child and adolescent mental health disorders exist in at least half of the surveyed countries, but only 10/28 (36%) could provide references for English language publications reporting detailed national data (eg, prevalence and incidence studies, service utilization studies, suicide rate studies, psychotropic drug utilization studies). 67% (N=18/27) of the countries reported the existence of a national data collection system for child and adolescent mental health disorders, but only 3% of countries (N=6/27) indicated that there is regular monitoring of treatment outcomes.

Care for special populations

In several countries, specific subgroups of children and adolescents have poor access to specialized mental health services dedicated to them: for example, only 37% (N=10/27 replies) provide access for refugees, 26% (N=7/27) for orphans or victims of natural or man-made disasters, 22% (N=6/27) for seriously emotionally disturbed children, 15% (N=4/27) for minority groups, 11% (N=3/27) for runaway or homeless children, and 7% (N=2/27) for indigenous people. 33% (9/27) of countries have no special services designed to meet the specific needs of these subgroups and only 26%, (N=7/27) indicated having highly specialized services for fostered, forensic, or disabled children, children with autism or children who misuse substances.

Pharmacological and psychosocial treatments

For most countries, all types of psychotropic medication most commonly used in CAMHS were available within their primary health care system (data from Malta and Estonia were missing): psychostimulants in 88% (N=23/26), and second-generation antidepressants, antipsychotics and anxiolytics or sedatives in 92% (24/26), first-generation antipsychotics in 88% of countries (N=23/26), and mood stabilizers (eg, sodium valproate, lithium, carbamazepine, lamotrigine, and oxcarbazepine) in 85% (N=22/26), although in Denmark these medications are not available in primary care settings (prescriptions are authorized only if made by a child and adolescent psychiatrist).

The most commonly available psychosocial treatments in CAMHS are family psycho-education (88%, N=23/26), cognitive-behavioural therapy, learning assistance or educational support, and speech and language training (81%, N=21/26) (data missing for Malta and Estonia) (figure 4). Training or guidance for parents is available in 77% (N=20/26) of the countries.

DISCUSSION

In this first survey of CAMHS facilities in European countries since the WHO Child and Adolescent Mental Health Atlas report,^{14,17} we show a marked heterogeneity in terms of: (i) service distribution (beds, professionals, opening hours, dedicated facilities or educational services), (ii) CAMHS financing (public vs private sources), and (iii) users access (including new cases). Despite the overall (86%) mandatory requirement of periodic CAMHS activity reports, data on service activities were available only from 19/28 countries, furtherly reduced to 13/28 for diagnostic group information, with neurodevelopmental disorders indicated as most frequent.

Services and resources distribution

We find variability in the numbers of child and adolescent psychiatrists per 100 000 young people. Between-country differences in service availability (table 1) appear to be more marked than those in prevalence rates of child/adolescent mental disorders¹⁸⁻¹⁹, suggesting that resource distribution does not match epidemiological prevalence estimates of child and adolescent mental disorders. Such differences are likely to be dependent on policy issues, distribution of financial resources, social, cultural and ethical attitudes, and the general architecture of mental health care in each country. For instance, the very low number of inpatient beds for children and adolescents in Italy reflects the very small number of psychiatric beds in general,^{20,21} after the law leading to the closure of all mental hospitals and to a radical decrease in the provision of inpatient and residential care. Other countries, such as Germany, have a high number of inpatient beds across all types of psychiatric care (child and adolescent, adult, psychogeriatric, forensic).²² Some countries have other services such as intensive home treatment teams, psychotherapeutic facilities, or Flexible Assertive Community Teams,²³ delivering almost comparable care in an outreach fashion.

Marked differences were also observed in funding sources: in some countries all CAMHS activities are entirely publicly funded (i.e. Croatia, Italy, Spain), while in others, like Poland, a high proportion of CAMHS activity is funded through private sources. In eighteen countries, at least three quarters of CAMHS funding is provided by the government or social insurance.

The need to use private resources (private insurance or paid directly by patient/family) to obtain access to mental healthcare may have, in our opinion, important societal implications for at least two reasons. First, having to pay for care may affect the socioeconomic wellbeing of patients' families, by reducing their expenditure capacity on other essential goods and services. Secondly, accessing care only through private, and costly, pathways, may discourage families from seeking clinical support as soon as their child may need it, thereby removing any opportunities for early intervention.

Several respondents to this survey noted that the provision of specific types of community child and adolescent mental health care in their own countries is insufficient to meet the needs of specific clinical groups requiring this type of care (e.g. respite care placements, day patients' programmes, and outpatient clinics). This data input indicates to service commissioners in these countries that they might consider the applicability of models of care delivered in other EU countries, as to whether they might improve health outcomes in their own.

Current and future needs of care for neurodevelopmental disorders

We found that most child and adolescent mental health care in the 28 European countries surveyed is targeted on children and adolescents with neurodevelopmental disorders; in countries where subcategories were specified, autistic spectrum disorders (ASD) accounted for most of this diagnostic category. In many countries, adult mental health services do not treat adults with autism. This may be in part because the evidence base supporting effective treatments and services for adults with ASD is sparse²⁴ or because adult mental health professionals do require relevant training²⁵. Such individuals, as they become adults, may not find any suitable mental health service for their care needs;²⁶ the exception being those who have psychiatric comorbidities. Clinical training and services policies should be reviewed to ensure that adult mental health professionals have the competencies required to treat adults with neurodevelopmental disorders and that adequate care is provided by adult mental health services.

European figures on CAMHS activities: problems and perspectives

The percentage of young people under the age of majority assisted by CAMHS varies substantially between different countries: although the high Italian proportion of CAMHS users can be explained by the specific combination of areas of assessment and treatment offered in CAMHS (child and adolescent mental disorders as well as child and adolescent neurological diseases), the high proportion of CAMHS users in Lithuania, the Netherlands and Slovenia does not seem to be justified neither by CAMHS availability, nor by differences in transition age (18 years for all three countries).

In one third of sampled countries, respondents noted that the specific needs of children under certain special circumstances, e.g. refugee and asylum seeking children, children from minority ethnic backgrounds or those 'looked after' by government or local authorities (i.e. children 'in care'), were not met adequately. These responses can often be confirmed by other literature^{27,28,29}. This has important socio-political implications, given the recent increase in migration across the EU. Services should meet the specific clinical needs of new types of users: this includes being prepared to overcome linguistic barriers and offering specific and prompt assistance for those coming from war-torn regions.

Finally, while governments support families with children affected by mental health disorders, mostly through financial channels (e.g. exemption of medical care costs) and access to specialized educational programs is overall guaranteed, parental training or practical support are not considered a universal benefit. Training courses for parents are not available in about a fourth of surveyed countries (23%; N=6). Considering the economic contribution of service user families and private insurances, families play an important role in the continuity of young patients' healthcare. Governments should therefore consider how they might further support families and minimize any burden on them since this may result in better care for young patients, with a consequent saving on the public purse.

All this underlines how the organization of services and the distribution of resources are often not based on users' perspectives and needs, as it should be.³⁰ Quality of care, as well as its continuity, needs full consideration of service users viewpoints as part of a process that involves multidisciplinary teams of clinicians, service users, and other stakeholders.³¹ A combination of basic and clinical research might provide crucial insights to the mechanisms for improvement.³² Contact with CAMHS can favorably change the long term

course of depression,³³ highlighting the need for timely referral and a good compliance with services.

Changes since 2005 WHO ATLAS

Although differences in country coverage and methodology make it difficult to compare our data with those of the WHO ATLAS report from 2005, we can draw some conclusions. The highest availability of child and adolescent psychiatrists has increased from 18.9 to 36 per 100,000 young people. CAMHS funding is now more reliant on governmental and public resources than 10 years ago, when in many countries services were mostly funded by private financing and international grants. National standards of training exist for child psychiatrists, despite existing country variability.

Similarities between the two surveys highlight elements that have not been adequately addressed over the past 10 years:

- paucity of systematic data collection for the assessment of CAMHS outcomes;
- lack of national epidemiological survey data;
- enduring service system gaps (i.e. considering the inter-sectoral nature of child and adolescent mental health service provision and the crucial importance of health-based CAMHS' collaboration with other services);
- although at least one NGO related to child and adolescent mental health is present in each country, active involvement of NGOs in ongoing country level programmes is often scarce;
- need for enhanced systematic data gathering and policy improvement to overcome mismatched resource allocation.

Limitations

Although we obtained replies from all 28 EU countries, not all questionnaires were completed fully, information on activity data was particularly lacking, with one third of countries not supplying this information.

Caution is needed in interpreting these data, since information might have been provided only on professional or local experience, and which might be inconsistent with national profile. We tried to minimize such potential lack of uniformity and reliability by using a specific definition of CAMHS and by seeking supplementary clarifications from the respondents. Additional strategies could have included: cross-checking the new

information with already available information, using a more comprehensive glossary of terms and, gathering multiple responses for each country. However, for 15/28 countries information was provided by a team of respondents (belonging to the same academic or clinical group).

The scarcity of standardized and valid data makes it difficult to interpret between-country differences or overall estimates (especially regarding activity data). Another complicating factor is that in some countries (eg, the UK or the Netherlands) services have been going through large-scale reorganization.

CONCLUSION

This paper provides important information for the evaluation and planning of European CAMHS. Differences have been highlighted. We do not suggest that a uniform service should be imposed on all country context, however, the data presented might highlight options that might improve services in countries that have not tried them. The survey highlights areas of concern: (i) poor service planning, discrepancies in resources across countries, and the lack of standardized outcome assessments for service provision or performance; (ii) scarce or variable involvement of service users and their families; (iii) scarcity of interdisciplinary CAMHS/adult mental health services. Clearer national policies are needed for service delivery and structure, and for standardized tools to assess the delivery, take up, and effectiveness of treatment. Young people's needs should be central to service provision, which requires improved understanding of their treatment experiences and their satisfaction with services. Professional training should be revised to bridge the gap between professional and service-related cultures.

All these considerations highlight the need for standardized national data collection systems,³⁴ using clearly identified and shared terminology, to form a holistic view of children's and adolescents' health and wellbeing and mental health services. Addressing youth mental health needs in the most efficient and cost-effective way is part of the essential ongoing investment in adolescent health and wellbeing.³⁵ This challenge implies an unprecedented reconfiguration of current service provision, as well as a harmonization of data collection systems.

Author contributions

GS and GdG wrote the manuscript; JW and JG supervised data quality control and analysis; SS, GD, TF, SG, AM, FMN, LOH, DPO, MP, PS, US, CS, ST, HT, KDC, VB and FV provided substantial contribution to the conception of the work, revising it critically for important intellectual content, approved the final version and agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

The corresponding author confirms that she had full access to all data in the study and had final responsibility for the decision to submit for publication.

Declaration of interest

The Authors declare that there is no conflict of interest in the submitted work.

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Table 1**Demographics and the capacity of CAMHS per 100,000 young people under the age of 18, or legal transition boundary (TB)**

COUNTRY	Total population (100,000) ^a	% of population under the age of TB (18) ^a	No. public CAMHS	No. paediatric beds per 100,000 YP	No. inpatient beds in child/adolescent psychiatric units	No. CAMHS per 100,000 YP	No. child and adolescent psychiatrists per 100,000 YP	No. child and adolescent psychologists per 100,000 YP
Austria	84.0	18	11	21.0	317	0.7	6.0	*
Belgium	110.0	20	53	29.0	650	2.4	11.1	*
Bulgaria	73.6	16	6	4.0	48	0.5	1.9	1.7
Croatia	42.8	19	10	8.8	70	1.3	6.3	3.1
Cyprus [†]	8.4	19	8	5.1	8	5.1	8.3	32.0
Czech Rep	104.4	17	14	34.6	628	0.8	6.8	4.4
Denmark	55.6	22	13	18.5	224	1.1	10.3	22.4
Estonia	12.9	18	5	21.0	50	2.1	16.8	25.2
Finland	53.8	20	140	32.3	350	12.9	36.0	36.9
France [‡]	649.3	20	383	16.4	2,107	3.0	9.1	*
Germany	802.2	16	537	64.0	8,400	4.1	8.0	32.9
Greece	108.2	17	45	3.2	60	2.4	16.3	*
Hungary	99.4	18	55	7.7	139	3.1	3.4	8.4
Ireland	45.7	25	60	5.2	60	5.2	5.2	5.1
Italy	594.3	17	210	3.2	324	2.1	20.0	*
Latvia	20.7	17	19	39.0	140	5.3	11.2	*
Lithuania	30.4	19	5	31.5	180	0.9	14.0	21.0
Luxemburg	5.1	21	2	32.6	35	1.9	21.4	65.3
Malta [‡]	4.2	16	2	18.0	12	3.0	3.0	*
Netherlands	166.6	21	113	56.6	1981	3.2	10.7	*
Poland	380.4	19	178	18.2	1300	2.5	3.5	*
Portugal	105.6	18	34	1.3	24	1.8	5.4	4.7
Romania	201.2	19	*	17.9	688	*	3.1	*
Slovakia	54.0	19	37	21.5	220	3.6	3.6	2.7
Slovenia	20.5	17	34	13.1	46	9.7	6.0	15.4
Spain	468.2	18	201	2.4	204	2.4	*	*
Sweden	94.8	20	20	1.2	157	1.0	23.4	104.2
UK	631.8	21	939	9.4	1264	7.0	4.5	*

^a EUROSTAT data * denotes data missing from ECM-Q survey [†] Legal TB at 17 years [‡] Legal TB at 16 years

Table 2
Sources of CAMHS funding

COUNTRY	Patient/Family		Private Insurance		Government funding		Social insurance		International grants		Non-governmental organizations		Other	
	YES/NO	% of total	YES/NO	% of total	YES/NO	% of total	YES/NO	% of total	YES/NO	% of total	YES/NO	% of total	YES/NO	% of total
Austria	YES	*	YES	*	YES	*	YES	*	YES	*	YES	*	YES	*
Belgium	YES	20	YES	*	YES	80		0		0	YES	*		
Bulgaria	YES	*					YES	*	YES	*	YES	*		
Croatia	YES	*	YES	*			YES	100			YES	*		
Cyprus	YES	*	YES	*	YES	*								
Czech Rep	YES	1			YES	93	YES	1	YES	1			YES	4
Denmark		0	YES	1	YES	99								
Estonia		0	YES	10	YES	80					YES	10		
Finland	YES	5	YES	5	YES	75	YES	15						
France	YES	10	YES	10	YES	50	YES	40						
Germany		0	YES	20	YES	5	YES	70					YES	5
Greece	YES	*	YES	*	YES	*	YES	*	YES	*	YES	*	YES	*
Hungary		0			YES	100								
Ireland	YES	*	YES	*	YES	*	YES	*					YES	*
Italy	YES	0	YES	0	YES	100	YES	0	YES	0	YES	0		
Latvia	YES	*			YES	100					YES	*		
Lituania	YES	4			YES	45	YES	45	YES	2	YES	4		
Luxemburg	YES	15	YES	3	YES	*	YES	85			YES	2		
Malta					YES	100								
Netherlands	YES	*	YES	10	YES	30	YES	50					YES	10
Poland	YES	50	YES	*	YES	50					YES	*		
Portugal	YES	*	YES	20	YES	100					YES	*		
Romania	YES	*			YES	*	YES	*	YES	*	YES	*		
Slovakia		0			YES	100								
Slovenia		0			YES	*	YES	*						
Spain		0					YES	100						
Sweden		0		0	YES	*	YES	*		0		0		
UK	YES	*			YES	*								

* Indicates proportion was unknown

FIGURES CAPTIONS

Figure 1: Distribution (no.) of CAMHS per 100,000 YP in EU countries (or Europe)

Figure 2: Distribution (no.) of inpatient beds per 100,000 YP in EU countries

Figure 3: Percentages of all young people (YP) below the transition boundary age treated in CAMHS in the past 12 months

Figure 4: Availability of treatment methods in CAMHS in EU countries*

*Data excludes Malta and Estonia