

# Opportunities and obstacles in child and adolescent mental health services in low- and middle-income countries: a review of the literature

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## ABSTRACT

Lower-income, less developed countries have few child and adolescent mental health professionals and a low availability of paediatric community mental health care. Child mental health professionals in low- and middle-income countries (LMICs) must therefore balance comprehensive tertiary care for the minority and provision of child and adolescent mental health services (CAMHS) within primary health care to serve the majority. This review aimed to identify the obstacles to, and opportunities for, providing CAMHS in LMICs. Articles from PsychInfo and PubMed, published up to November 2011, were retrieved using the search terms “child and adolescent”, “mental health services”, “child psychiatry”, “low- and middle-income countries”, “low-income countries” and “developing countries”. Articles were then retrieved from PubMed alone, using these search terms plus the individual country names of 154 LMICs. Fifty-four articles were retrieved from PsychInfo and 632 from PubMed. Searching PubMed with 154 LMIC names retrieved seven related articles. Inclusion criteria were (i) articles relating to CAMHS or child psychiatric services; (ii) subjects included in the articles were inhabitants of LMICs or developing countries; (iii) articles reported in English. After removal of duplicates, 22 articles remained. The contents of these articles were categorized and analysed by use of the six domains of the *World Health Organization assessment instrument for mental health systems* (WHO-AIMS), a tool developed to collect information on available resources within mental health systems. The provision of CAMHS in LMICs clearly needs a specific strategy to maximize the potential of limited resources. Mental health-policy and awareness campaigns are powerful measures to drive CAMHS. Training in CAMH for primary health-care professionals, and integration of CAMHS into existing primary health-care services, is essential in resource-constrained settings. A wide gap in research into CAMHS still needs to be filled. To overcome these challenges, the child mental health professional's role in LMICs must encompass both clinical and public-health-related activities.

**Key words:** child and adolescent, child psychiatry, low- and middle-income countries, mental health services

## BACKGROUND

Since 1977, the World Health Organization (WHO) has recommended promotion of child and adolescent mental health (CAMH). However, according to the *Atlas: child and adolescent mental health services*, published by WHO in 2005,<sup>1</sup> countries with the largest proportion of children and

adolescents are those that most lack specific CAMH policies, and lower-income, less developed countries have the fewest child and adolescent psychiatrists and other mental health professionals and the lowest availability of community mental health care. Because more than 50% of nations globally are categorized as low- and middle-income countries (LMICs), this is one of the most prevalent problems worldwide.

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Several overviews of child and adolescent mental health services (CAMHS) in LMICs have highlighted the shortage of CAMH professionals, and low accessibility and availability of CAMHS.<sup>2-5</sup> The few child psychiatrists in these countries also generally act as team leaders within the CAMHS and are faced with the difficult balance of providing comprehensive tertiary care for the minority and CAMHS within the primary health-care setting to serve the majority. Guidance is needed on how best to allocate time between clinical practice and on administration of limited resources for provision of community service. Through a search of practice reported in the published literature, this review aimed to identify the obstacles to, and opportunities for, providing CAMHS in LMICs.

## METHODOLOGY

Articles published up to November 2011 were retrieved from two search engines, PsychInfo and PubMed, using the search phrases: (i) “child and adolescent mental health service”/“child psychiatry” and (ii) “low-and middle-income countries”/“low-income countries”/“developing countries” in the title and abstract fields. Articles were then retrieved from PubMed alone, using these search terms plus the individual country names of 154 LMICs as defined by the World Bank 2011 classification.<sup>6</sup> All articles were imported to EndNote for criteria analysis. Inclusion criteria were: (i) articles relating to CAMHS or child psychiatric service; (ii) subjects included in the articles were inhabitants of LMICs or developing countries; (iii) articles reported in English. Exclusion criteria were: (i) unrelated articles, i.e. on adult mental health service, community mental health, interventional and other psychosocial issues not related to CAMHS; (ii) articles with subjects in developed or high-income countries, e.g. refugees or immigrants; (iii) commentaries and editorials. The full text of the articles meeting the criteria was retrieved, and content analysis and data extraction was carried out. The results were categorized to six domains according to the *World Health Organization assessment instrument for mental health systems* (WHO-AIMS) Version 2.2, 2005,<sup>7</sup> which is a tool developed to collect information on available resources within mental health systems. The six domains are (i) policy and legislative frameworks; (ii) mental health services; (iii) mental health in primary care; (iv) human resources; (v) public education and links with other sectors; and (vi) monitoring and research.

## RESULTS

A total of 54 articles were retrieved from PsychInfo and 632 articles from PubMed. Searching PubMed with the names of 154 LMICs retrieved seven related articles. After abstract screening, 21 and 31 relevant articles were identified in the PsychInfo and PubMed results, respectively. Removal of duplicates reduced the total number by 13. The remaining 39 full-text articles were assessed and 22 met the eligibility criteria.<sup>2,3,5,8-10,13,14,16-29</sup> For simplicity of synthesizing the results, one review article citing three relevant studies was considered as one article. A summary of these 22 articles is presented in Table 1.

## Obstacles to providing child and adolescent mental health services in low- and middle-income countries

### Domain 1: Policy and legislative frameworks

Mental health policy refers to an organized set of values, principles and objectives to improve mental health and reduce the burden of mental health disorders in a population.<sup>7</sup> The *Atlas: child and adolescent mental health resources*, published by WHO in 2005,<sup>1</sup> reported a survey of information on countries worldwide; 192 countries were contacted and 66 responded. Of the responding countries, fewer than one third had an institutional or governmental entity that had clear responsibility for CAMHS.<sup>30</sup> A 2010 overview of policy and legislative frameworks in four African countries – Ghana, South Africa, Uganda and Zambia – found that two had published or drafted policies but none had a recent national mental health plan to support implementation of CAMHS.<sup>16</sup> Current draft or new legislation in these countries addressed none or only a few of the six provisions in the WHO legislation checklist for the protection of minors, e.g. a recommendation for separate mental health facilities for children and adults in Ghana and a recommendation for provision of age-appropriate services in South Africa.<sup>20</sup>

### Domain 2: Mental health service

The challenge of poorly developed CAMHS in LMICs has been described for more than 40 years.<sup>3,5,8-10</sup> Despite this long-standing recognition, the gap between needs and the resources provided remains large.<sup>2</sup> For example, in a cross-sectional study of children and adolescents in a low-income urban area of Brazil over one year, only 14% of the children with mental health problems could access treatment.<sup>17</sup> Challenges in closing this treatment gap include: difficulty in accessing and using services, owing to low socioeconomic status;<sup>8,10</sup> stigma associated with mental disorder;<sup>5</sup> urban-based specialist provision of CAMHS in countries where most of the population is concentrated in rural areas; and few inpatient beds allocated for CAMH care.<sup>16</sup> In addition, CAMHS are inappropriately integrated with adult mental health services in many LMICs.<sup>13</sup>

### Domain 3: Mental health in primary care

Overloaded services, shortage of funds and personnel, and underrecognition of the importance of CAMH can lead to low motivation for primary health-care workers to provide CAMHS.<sup>21</sup> Child psychiatrists in LMICs are faced with the dilemma of choosing between developing services similar to those in high-income countries and improving provision of CAMHS in primary care.<sup>20</sup>

### Domain 4: Human resources

Shortage of mental health professionals is a major challenge for LMICs.<sup>5,27</sup>

**Table 1: Summary table of the literature on child and adolescent mental health service in low-and-middle income countries**

Reference number	Author	Study design	Year; location	Opportunities or suggestions	Obstacles or challenges
8	Benjet et al.	Adolescent mental health survey	2009; Mexico	<ul style="list-style-type: none"> <li>Adolescents from families with the lowest monthly income had lower odds of substance-use disorders.</li> <li>The level of education in Mexico has risen.</li> </ul>	<ul style="list-style-type: none"> <li>1 in 11, 1 in 5 and 1 in 10 of adolescents had experienced a severe, moderate or mild mental health disorder respectively, of whom only 13.7% had received treatment.</li> <li>A low level of parental education (primary school or less) was associated with lower odds of adolescents receiving treatment.</li> <li>There was a lack of use of general practitioners or paediatricians, who are key sources of care before receiving more specialized resources.</li> </ul>
9	Dogra et al.	Case-study	2005; India	<ul style="list-style-type: none"> <li>Feedback on CAMHS collaborative United Kingdom of Great Britain and Northern Ireland (UK)/India training course for medical students and non-medical and non-mental health staff was positive.</li> </ul>	<ul style="list-style-type: none"> <li>Considerable support would be needed for the impact of such training to have organizational or long-term impacts.</li> </ul>
10	Espinola-Nadurille et al.	Overview of country data	2010; Mexico	<ul style="list-style-type: none"> <li>Mexico is a signatory to the Universal Declaration of Human Rights (1948), the United Nations <i>Convention on the Rights of the Child</i> (1989), the <i>Caracas Declaration of Solidarity</i> (1990)<sup>12</sup> and other human rights instruments with specific provisions regarding mental health care. Federal and state governments are therefore obliged to provide adequate CAMHS. A national CAMH plan should be integrated with existing national health and mental health plans, and it should clearly assign responsibilities and areas of accountability within government.</li> </ul>	<ul style="list-style-type: none"> <li>CAMHS in Mexico are delivered through an underfunded, under-resourced and uncoordinated network of institutional providers isolated from the larger health-care system.</li> <li>There is poor access to service because 40% have no insurance.</li> <li>Most CAMHS were provided by specialists, with little care from non-specialist providers.</li> </ul>
13	Fisher and Cabral de Mello	Application of WHO 4S-Framework to findings of a systematic review of mental health problems in adolescents in resource-constrained settings	2011; 33 resource-constrained countries	<ul style="list-style-type: none"> <li>CAMH care should be integrated into the communities in which adolescents live, the institutions they attend and the organizations in which they participate, using cross-sectoral strategies.</li> </ul>	<ul style="list-style-type: none"> <li>There is an absence of evidence on effective CAMH interventions in resource-constrained settings.</li> </ul>

Reference number	Author	Study design	Year; location	Opportunities or suggestions	Obstacles or challenges
14	Hoven et al.	Cross-sectional community-based design	2008; 9 countries at differing levels of economic development (Armenia, Azerbaijan, Brazil, China, Egypt, Georgia, Israel, the Russian Federation and Uganda)	<ul style="list-style-type: none"> <li>A pilot study assessing changes in CAMH awareness following implementation of the "awareness manual" by a WPA-WHO-IACAPAP Program Awareness Task Force<sup>15</sup> was conducted in nine countries. The study reported a positive impact in six countries where follow-up data were collected.</li> <li>The next logical step would be to stimulate more permanent efforts.</li> </ul>	<ul style="list-style-type: none"> <li>Widespread stigma attached to CAMH disorders impinges upon the quality of life experienced by youths suffering from such problems, and serves as a barrier to prevention and treatment efforts.</li> </ul>
2	Kieling et al.	Literature review	2011; worldwide	<ul style="list-style-type: none"> <li>Sufficient evidence exists for establishing CAMHS in LMICs.</li> <li>CAMH research in LMICs is needed.</li> <li>Early intervention/prevention helps avoid adult mental health problems.</li> </ul>	<ul style="list-style-type: none"> <li>Mental health problems affect 10–20% of children and adolescents worldwide and account for a large portion of the global burden of disease.</li> <li>Only 10% of CAMH trials come from LMICs, where 90% of children reside.</li> <li>Development of services is hindered by lack of government policy, inadequate funding and a dearth of trained clinicians.</li> </ul>
16	Kleintjes et al.	Analysis of quantitative and qualitative data	2010; Ghana, Uganda, South Africa, Zambia	<ul style="list-style-type: none"> <li>All four countries have a national mental health policy.</li> <li>Mental health needs of children and adolescents were specifically mentioned only in the mental health policies of South Africa (1997) and Uganda (draft, 2000). The South Africa policy recommends key strategies, such as a safe and supportive environment, information, skill-building, counselling and access to appropriate health services.</li> </ul>	<ul style="list-style-type: none"> <li>CAMH-related legislation, policies, services, programmes and human resources are scarce.</li> <li>There is a low percentage of CAMH inpatient beds in all four countries.</li> <li>There is a lack of training of allied workers, e.g. teachers, in identification, management or referral of CAMH cases.</li> </ul>
17	Lund et al.	Model development	2009; South Africa	<ul style="list-style-type: none"> <li>The spreadsheet model presented can be used as an advocacy tool to engage with policy-makers to design CAMHS, and can be adapted for use in other countries.</li> </ul>	<ul style="list-style-type: none"> <li>There is a substantial shortfall between current service provision in South Africa and the modelled resources required.</li> </ul>

Reference number	Author	Study design	Year; location	Opportunities or suggestions	Obstacles or challenges
18	McKelvey et al.	Review article	1997; Viet Nam	<ul style="list-style-type: none"> <li>• A training course targeted at recognition and treatment of CAMH disorders by both western and traditional health workers in primary health care.</li> <li>• Joint collaboration between psychiatrists from developed and developing countries.</li> </ul>	<ul style="list-style-type: none"> <li>• Transportation limits accessibility to hospitals where the only psychiatrists practise.</li> <li>• Most Vietnamese individuals rely heavily on traditional healers.</li> <li>• Resources for prevention and treatment of CAMH disorders are extremely limited.</li> </ul>
19	Minde	Annotation	1976; developing countries	<ul style="list-style-type: none"> <li>• Children with general behavioural disorders, learning difficulties and antisocial behaviour should and can be treated by paramedical personnel in the community.</li> <li>• This requires knowledge of child development and specific behavioural problems to be incorporated into the training of medical and public-health assistants, as well as teachers.</li> </ul>	<ul style="list-style-type: none"> <li>• There is low awareness of CAMH needs and general inadequacy of service.</li> <li>• Help is sought from indigenous healers before CAMHS.</li> </ul>
20	Minde and Nikapota	Review article	1993; developing countries	<ul style="list-style-type: none"> <li>• Child psychiatrists in developing countries must be trained to function within not only a medical model but also a public-health model.</li> </ul>	<ul style="list-style-type: none"> <li>• Conflict between developing comparable services to those in the developed world and focusing on provision of primary mental health care.</li> </ul>
3	Morris et al.	Analysis of WHO-AIMS data <sup>7</sup>	2011; 42 LMICs	<ul style="list-style-type: none"> <li>• Collaboration between education and mental health sectors could promote prevention and include selective interventions with groups of children and adolescents with a higher risk for emotional or behavioural health problems, in addition to diagnosis and treatment of individuals with specific CAMH needs.</li> </ul>	<ul style="list-style-type: none"> <li>• The median 1-year-treated prevalence of CAMH issues is 159:100 000 population, compared with 664:100 000 in adults.</li> <li>• Minimal child and adolescent training exists for mental health professionals.</li> <li>• A limited numbers of schools have mental health professionals (1% with limited services; 63% reported 1–20% of schools provide prevention and promotion activities for mental health).</li> </ul>
21	Nikapota	Review article	1991; developing countries	<ul style="list-style-type: none"> <li>• Integration of CAMH into existing network such as the Integrated Management of Childhood Illness and the Mother and Child Health Programmes might benefit both CAMH outcomes and physical outcomes.</li> </ul>	<ul style="list-style-type: none"> <li>• Overloaded services, shortage of funds and personnel and underrecognition of the importance of CAMH leads to low motivation for primary health-care workers to provide CAMHS.</li> </ul>



Reference number	Author	Study design	Year; location	Opportunities or suggestions	Obstacles or challenges
22	Omigbodun	Narrative review	2008; resource-poor countries	<p>Development of child mental health service in resource-poor countries may be supported by:</p> <ul style="list-style-type: none"> <li>• provision of adequate advocacy tools to highlight the burden</li> <li>• poverty alleviation</li> <li>• health-awareness programmes</li> <li>• enforcement of legislation</li> <li>• regionally centred training</li> <li>• partnerships with professionals in developed countries.</li> </ul>	<ul style="list-style-type: none"> <li>• Many CAMH problems remain invisible to policy-makers.</li> <li>• Absence of CAMH policies to guide services development.</li> <li>• Overburdened CAMH professionals.</li> <li>• Belief systems about mental illness that prompt the use of traditional healers.</li> </ul>
5	Patel et al.	Literature review	2007; worldwide	<ul style="list-style-type: none"> <li>• There are examples of successful preventive interventions in LMICs, such as an intervention to combat youth substance abuse in China.</li> <li>• Infant developmental stimulation had a positive effect on mental health outcomes in late adolescence.</li> <li>• Policies must address strengthening capacity for addressing youth mental health disorders in various settings.</li> <li>• Youth mental health interventions should be integrated with all existing youth programmes.</li> <li>• Simple youth-friendly measures are suggested, such as psychosocial support, self-help strategies, and education for mild, self-limiting disorder in non-clinical settings and community-based channels.</li> </ul>	<ul style="list-style-type: none"> <li>• Most mental health needs in young people are unmet.</li> <li>• Key challenges include the shortage of mental health professionals, the fairly low capacity and motivation of non-specialists to provide CAMHS to youths, and the stigma associated with CAMH disorders.</li> <li>• There is a scarcity of mental health specialists and poor awareness of CAMH disorders and their associated stigma.</li> <li>• Worldwide, the clinical and public-health evidence base, particularly for childhood-onset disorders, is weak.</li> </ul>
23	Patel et al.	Literature review	2008; LMICs	<ul style="list-style-type: none"> <li>• Building capacity in CAMH must also focus on the detection and treatment of disorders for which the evidence base is somewhat stronger.</li> <li>• Capacity needs to be built across the health system, with particular foci on low-cost, universally available and accessible resources, and empowerment of families and children.</li> </ul>	<ul style="list-style-type: none"> <li>• There is a vast gap between CAMH needs and the availability of CAMH resources.</li> <li>• There is greater variation in the pattern of disorders seen in communities than in clinics.</li> <li>• There is a small evidence base on CAMH, owing to insufficient skilled human resources, low awareness and low priority, high service load, greater concern for child mortality than morbidity, and journal acceptance biases against LMIC research.</li> </ul>

Reference number	Author	Study design	Year; location	Opportunities or suggestions	Obstacles or challenges
24	Paula et al.	Cross-sectional study	2007; Brazil	<ul style="list-style-type: none"> <li>Greater investment in improving the quality of CAMH records in public services would provide valuable data, for example to discriminate between new and returning patients, and thus aid planning of preventive and interventional activities.</li> </ul>	<ul style="list-style-type: none"> <li>CAMH problems are frequent in the studied community.</li> <li>The public service structure is insufficient to cope with this burden of disease.</li> <li>The service-delivery capacity was only 14% of the estimated demand over a 1-year period.</li> </ul>
25	Petersen et al.	Narrative review	2010; South Africa	<ul style="list-style-type: none"> <li>Trained and supported community-based workers can produce good outcomes, and development of human resources remains key in providing CAMHS.</li> <li>Particular successes in early-childhood policy development and implementation relate to introduction of child-support grants and food supplementation/promotion of household food security.</li> <li>Evidence-based interventions exist for all three developmental phases: early childhood, middle childhood and adolescence.</li> <li>School-based life-skills programmes have been delivered within the education sector.</li> </ul>	<ul style="list-style-type: none"> <li>There is a lack of evidence-based CAMH promotion and interventions in many areas.</li> <li>Policy about CAMH in middle childhood is unclear and the quality of basic general education is poor.</li> </ul>
26	Rahman et al.	Annotation on service planning	2000; developing countries	<ul style="list-style-type: none"> <li>Three methods of needs assessment for CAMHS are described and seven criteria for setting priorities.</li> <li>Models of service are outlined: community and primary health-care models; school-based mental health programmes; and public-health and preventive models.</li> <li>The importance of local culture and belief systems and working with the community is emphasized.</li> </ul>	<ul style="list-style-type: none"> <li>Scarcity of trained community mental health professionals, who often work in isolation.</li> <li>Belief that CAMH problems can be managed only by highly trained specialists.</li> </ul>
27	Syed et al.	Case-study of referrals to a new child mental health clinic	2007; Pakistan	<ul style="list-style-type: none"> <li>Deliver CAMHS through the existing network of primary health-care services, especially for rural populations.</li> <li>There are potential benefits of involving faith healers in CAMHS provision.</li> <li>Build a network for referrers, by encouraging CAMH professionals who are currently working individually, to communicate and work together.</li> </ul>	<ul style="list-style-type: none"> <li>Risk and protective factors for CAMH disorders can differ between developed and developing countries.</li> <li>Shortage of trained and specialist mental health professionals.</li> <li>Lack of collaboration.</li> </ul>

Reference number	Author	Study design	Year; location	Opportunities or suggestions	Obstacles or challenges
28	Tan et al.	Comparative analysis of country data	2008; Hong Kong, Malaysia, Singapore	<p>In Malaysia:</p> <ul style="list-style-type: none"> <li>efforts have been made to decentralize mental health promotion by training personnel in the existing health system, such as paediatricians and family medicine practitioners;</li> <li>there are ongoing mental health activities to increase public awareness of CAMH problems and promote good coping styles, particularly in schools.</li> </ul>	<ul style="list-style-type: none"> <li>In Malaysia, CAMHS are still focused in urban areas and treatment is usually via one practitioner rather than via a multidisciplinary team.</li> <li>All three societies had a lack of access to treatment, owing to a dearth of CAMHS and child psychiatrists.</li> </ul>
29	Tareen et al.	Cross-sectional community-based design	2009; UK and Pakistan	<ul style="list-style-type: none"> <li>Pilot a collaborative project between a volunteer from the UK Royal College of Psychiatrists and Pakistan, to establish a CAMHS model in a rural area, including tertiary CAMHS separated from adult mental health service, promoting CAMH via classroom management and behaviour management at school.</li> <li>Provide public information via electronic media such as television.</li> </ul>	<ul style="list-style-type: none"> <li>There is a large unmet need to train the workforce and develop services that are feasible and sustainable.</li> <li>Unmet treatment needs may be greatest for children with intellectual disability, epilepsy and depression.</li> </ul>

CAMH: child and adolescent mental health; CAMHS: child and adolescent mental health services; IACAPAP: International Association for Child and Adolescent Psychiatry and Allied Professions; LMIC: low- and middle-income country; WHO: World Health Organization; WHO-AIMS: *World Health Organization assessment instrument for mental health systems*;<sup>7</sup> WPA: World Psychiatric Association.



Lund and colleagues developed a spreadsheet model to calculate the human resources and costs required to improve the poor coverage of CAMHS in South Africa.<sup>17</sup> They calculated that, per 100 000 population (of which 43 170 would be aged under 20 years), the minimum coverage of full-time staff would need to be 5.8 in primary health-care facilities; 0.6 in general hospital outpatient departments; 0.1 in general hospital inpatient facilities; 1.1 in specialist CAMHS outpatient departments; 0.6 in specialist CAMHS inpatient facilities; 0.5 in specialist CAMHS day services; and 0.8 in regional CAMHS teams. These minimum requirements were substantially less than were being provided.<sup>17</sup> Compounding staff shortages, most mental health professionals are required to work in adult mental health services and therefore have less time for CAMHS. Low capacity and motivation for non-specialists to provide CAMHS is another key challenge for LMICs.<sup>5</sup> Minimal CAMH training in primary care also means that the availability of staff who are skilled in early identification and management of uncomplicated CAMH cases is limited.<sup>3,16</sup>

### Domain 5: Public education and links with other sectors

Misperceptions about CAMH, and limited CAMHS awareness, is common among the public, policy-makers and also health professionals worldwide.<sup>5,14</sup> This lack of awareness of CAMH problems in LMICs means that CAMH needs may be overlooked or neglected in primary care; in certain settings, this situation increases the likelihood that patients or their families will seek help from indigenous healers before accessing CAMHS.<sup>19,27</sup>

Lack of coordination of CAMHS with other child-care sectors occurs among LMICs. In a study of 42 LMICs, most (63%) had only a few schools (1–20%) providing CAMH-promotion and prevention activities and only 1% of schools in these LMICs had one or more mental health professional on their staff.<sup>3</sup> In addition, children and adolescents in LMICs tend to finish schooling earlier than their counterparts in high-income countries; thus, a large proportion of adolescents living in LMICs cannot benefit from school-based services.<sup>8</sup>

### Domain 6: Monitoring and research

Because of resource constraints, LMICs may have poorly organized CAMH records,<sup>24</sup> as well as cases that are undetected, undocumented or lost to follow-up;<sup>22</sup> this situation hinders the ability to evaluate services and leads to underestimates of the prevalence of CAMH disorders. The scarcity of epidemiological evidence unavoidably affects CAMH policy and planning. In particular, Patel et al. have highlighted that the “small evidence base on CAMH is due to insufficient skilled human resources, low awareness and low priority, high workload, greater concern for child mortality than morbidity, and journal acceptance biases against LMIC research”.<sup>23</sup> Interestingly, no published articles about the effectiveness of CAMHS provision were found in this review, which may reflect the early stage of CAMHS research in LMICs.

## Opportunities for providing child and adolescent mental health services in low- and middle-income countries

Few published reports on successful strategies were found. The opportunities described below were synthesized from evidence of success and recommendations in the articles reviewed.

### Domain 1: Policy and legislative frameworks

Based on their systematic review of the available evidence, in 2011 Fisher and Cabral de Mello outlined how CAMH policies, strategies and services in resource-constrained countries can be strengthened. They concluded that, in the absence of evidence for effective interventions in these settings, a broad public-policy response should encompass direct strategies for prevention, early detection, intervention and treatment; health-service and health-workforce development; social inclusion of marginalized groups of adolescents; parent, public and primary, secondary and tertiary education; and school-health policies to promote emotional well-being and prevent mental health problems.<sup>13</sup>

The key strategies of the South Africa CAMHS policy were provision of a safe and supportive environment, skill building, counselling, and access to appropriate health services.<sup>16</sup> By use of their spreadsheet model to calculate the human resources and costs required to scale up CAMHS in South Africa, Lund and colleagues estimated that full and minimum CAMHS coverage would cost US\$ 21.50 and US\$ 5.99 per child or adolescent per year, respectively.<sup>17</sup> In Sri Lanka, data collection to demonstrate the presence of treatable child mental health problems was used to persuade policy-makers to include CAMHS in primary care.<sup>26</sup>

Most LMICs have ratified the United Nations *Convention on the Rights of the Child*, in which mental health is addressed from a broad perspective, from emotional well-being to the right to good-quality health care.<sup>11</sup> Nevertheless, there is no evidence of any correlation between ratification of the Convention and a country's development of CAMHS.<sup>1</sup> India was the second country in Asia, after the Philippines, to establish a National Commission for Children to protect children's rights. In Malaysia, a Ministry of Development of Women, Children and Family has been set up to handle children's and women's needs. The Child Act of 2001, the Woman and Girl Protection Act 1973, and the Juvenile Court Act 1974 have enhanced the statutory protection and rights of children in this country.<sup>28</sup>

### Domain 2: Mental health service

In certain resource-poor locations, a large proportion of CAMH care is provided outside the health sector, such as in education, juvenile justice or child welfare services.<sup>8,10,24</sup> In an overview of establishing a CAMHS in Pakistan, Syed et al. noted the potential for delivery of CAMHS via the existing primary-care system, especially in rural areas, and the need

to encourage CAMH professionals who work individually to form a network for referrers; they also noted the potential benefits of involving faith healers in, rather than alienating them from, CAMHS provision.<sup>27</sup> Paula et al. noted that greater investment in improving patient records in CAMHS could allow more efficient use of limited resources by, for example, allowing cases to be identified as new or returning.<sup>24</sup>

A review of CAMH in South Africa cited evidence-based community-level interventions from three relevant studies for three phases of development – early and middle childhood and adolescence.<sup>25</sup> For early childhood, one randomized controlled trial reported the effectiveness of a mother–child stimulation programme using trained community-based workers.<sup>31</sup> For middle childhood, a randomized controlled trial provided evidence for the utility of a family-strengthening programme using trained community-based workers.<sup>32</sup> With regard to adolescence, a systematic review of community-level mental health promotion that focused on life-skills education provided evidence for a positive impact on adolescents’ knowledge, attitudes and communication, although the impact on actual behaviour change was limited.<sup>33</sup>

Collaboration between mental health and educational sectors creates opportunities to improve CAMHS. Prevention-focused activities can create healthy school environments,<sup>34</sup> and integration of mental health services into schools can allow selective interventions with groups of children and adolescents at higher risk of mental health problems, as well as diagnosis and treatment.<sup>3</sup>

### Domain 3: Mental health in primary care

Several authors stressed the untapped potential of CAMHS delivery through existing paediatric or primary health-care services, especially for rural populations.<sup>1,21,27</sup> Kieling and colleagues noted that integration of child mental health care with other paediatric and primary-care services, such as the Integrated Management of Childhood Illness and Mother and Child Health Programmes, might benefit both mental health outcomes and physical outcomes for children and adolescents.<sup>2</sup> In 1976, Minde noted that children with general behavioural disorders should and could be managed by appropriately trained paramedical personnel, such as community health workers and teachers.<sup>19</sup> In their overview of CAMHS planning for developing LMICs, Rahman and colleagues noted that a model whereby mental health care was integrated into the primary-care network and supported by specialists emphasized prevention and promotion and encouraged community involvement; they also noted that such a model required changes in the roles and training of both primary-care and mental health professionals.<sup>26</sup>

### Domain 4: Human resources

“Task-shifting” is one method proposed to make better use of the limited numbers of trained mental health professionals in LMICs. It involves delegating certain tasks to professionals

with less training, or to non-professionals. In addition, enhanced collaboration with referring paediatricians and family physicians has been proposed. However, the efficacy and impact of these strategies remain unknown.<sup>3,27,28</sup> Several authors have emphasized the need for improved training of mental health and primary-care professionals and community-based workers as key to delivering CAMHS in LMICs.<sup>3,25</sup> Minde and Nikapota noted the need for training in child psychiatry in LMICs to encompass not only the clinical but also the public-health aspects of CAMHS.<sup>20</sup> Evidence from South Africa indicates that trained and supported community-based workers can produce good outcomes in CAMH.<sup>25</sup> Recommended components of training curricula include child development; interviewing children and their families; recognition of psychosocial factors; behavioural abnormalities; recognition of child psychiatric disorders; and evidence-based care strategies that will aid accurate professional interpretation of the child’s manifesting symptoms, and help the parents to effectively respond to the child’s emotional needs.<sup>3,9,19</sup> In Viet Nam, McKelvey et al. noted the potential value of training courses for both conventional and traditional practitioners at the primary health-care level in targeting the recognition and treatment of CAMH disorders.<sup>18</sup>

Partnerships between psychiatrists from developed and developing countries should benefit both CAMHS and research in CAMH.<sup>18,29</sup> A collaborative training and train-the-trainer course by professionals from the United Kingdom of Great Britain and Northern Ireland and from India, for medical students, non-medical and non-mental-health staff at an Indian institution was generally well received, but the authors noted that considerable support would be needed for such activities to have a sustainable effect.<sup>9</sup>

### Domain 5: Public education and links with other sectors

In 2004, a joint taskforce of the World Psychiatric Association, World Health Organization and International Association for Child and Adolescent Psychiatry and Allied Professions (WPA-WHO-IACAPAP) created an “awareness manual” for use in child mental health-awareness campaigns.<sup>14,15</sup> The manual was designed such that it could be adapted to suit local needs at the least cost. Use of the manual was piloted in students, parents and teachers in Armenia, Azerbaijan, Brazil, China, Egypt, Georgia, Israel, the Russian Federation and Uganda. In six of these countries, follow-up data were collected and showed that the campaigns had resulted in increased knowledge and understanding of CAMH in all locations, despite variation in cultures, campaign methods and the level of economic development. The results indicated that low-cost awareness campaigns can be effective, flexible and feasible and warrant refinement, expansion and further application and evaluation.<sup>14</sup>

Growing numbers of LMICs have specific education and awareness campaigns. In a survey of 42 LMICs reported by Morris et al. in 2011, 38 countries had mental health-education and awareness activities targeted at children and adolescents, and 29 countries had awareness campaigns on mental health aimed at teachers.<sup>3</sup>

Many authors in the literature surveyed emphasized the critical importance of collaboration between CAMHS and other child-care sectors such as education, child health and social welfare.<sup>3,8,24,27</sup> Local women's and youth unions in Viet Nam supplement the work of primary health-care providers to provide psychosocial treatment for children and adolescents with substance-use and conduct disorders.<sup>18</sup>

### Domain 6: Monitoring and research

The establishment of the WHO-AIMS in 2005 provided an important tool for service assessment.<sup>7</sup> It provides essential information to strengthen mental health systems and allow monitoring of progress among countries.<sup>7</sup> Periodic review of services and the community's needs before making appropriate modifications should be conducted routinely, as the needs of CAMHS evolve over time.<sup>26</sup> Rahman and colleagues discussed the three broad methods used to analyse CAMH needs – epidemiology of mental health problems and their risk factors; comparative need assessment; and corporate need analysis. The latter involves synthesis of views on the mental health needs of children from those agencies involved in their care and seems a reasonable approach in resource-poor countries.<sup>26</sup>

CAMHS research in and for LMICs remains weak. The research gaps include estimates of CAMHS needs by determination of the prevalence of CAMH disorders in primary health-care settings; community-based prevalence studies; evaluations of community attitudes towards CAMH disorders; identification of parents' views on appropriate CAMHS; determination of pathways of service accessibility; development of effective CAMH screening instruments for use by non-medical personnel; and randomized controlled trials of psychosocial treatment and the cost-effectiveness of interventions in LMICs.<sup>2,18</sup> Improvements to the quality of mental health-care records should be made to serve as a basis for research and particularly treatment planning in the future.<sup>24</sup>

## DISCUSSION

A surprising finding from the review is that the current situation of CAMHS in LMICs is quite similar to that of 40 years ago. Evidence is scarce and much of the evidence base comes from reviews of limited data or expert opinions rather than objective measures of interventions.

Regarding domain 1 of the WHO-AIMS,<sup>7</sup> on policy and legislative frameworks, policy can clearly be a powerful instrument to drive CAMHS in LMICs, where it exists. CAMH legislation existed in some LMICs but this did not necessarily imply implementation. Many adults with mental health problems develop their symptoms before the age of 15 years and CAMH disorders may result in a long-lasting effect throughout life.<sup>2</sup> Appropriate advocacy must ensure that this information is shared with policy-makers, to enable greater legislative underpinning of CAMHS in LMICs.

Domains 2 and 3 of the WHO-AIMS<sup>7</sup> relate to mental health service and mental health in primary care. CAMHS originated in developed countries, began at tertiary level then expanded into primary health care, to cover the majority of children.<sup>22</sup> By applying lessons learnt from the evolution of CAMHS in high-income countries, there is an opportunity to develop CAMHS in LMICs in the opposite direction, i.e. by promoting CAMHS in primary health care. Although the work reviewed concurred that this is the best solution, there was also acknowledgement, especially in low-income countries, that the priorities of community and primary health-care personnel are usually communicable or life-threatening diseases rather than CAMHS. Training community-based workers for CAMHS may simply increase the workload of an already-stretched workforce, which may reduce cooperation with CAMHS initiatives. Nevertheless, integrating CAMHS into existing routine work in primary health care has been the most-explored option to date, and a sustained effort to integrate CAMH into the public-health system at the local level should ultimately establish sustainable service into that community.

Human resources are addressed in domain 4. The median number of psychiatrists in LMICs is 172 times less than in high-income countries and thus task-shifting is an obvious strategy to increase CAMHS human resources.<sup>4</sup> Personnel in primary health care are an existing network of individuals who are familiar with the community, so in theory may be good providers of CAMHS for the child and adolescent populations. Questions about which tasks should be shifted, who should manage and oversee the task-shifting, and how to motivate other professionals to take on these responsibilities, are still unanswered.

Domain 5 focuses on public education and links with other sectors. Uniting the CAMH workforce in different sectors will create a synergistic effect, which is necessary for establishing CAMHS in resource-poor countries. In decentralized settings, local authorities have become more relevant to CAMHS provision. CAMHS will be unsustainable in any community where the local authorities do not involve all sectors. Since promoting the needs of children and adolescents often lies outside health sectors, intersectoral linkages and empowerment of non-health sectors that interact with children will enable promotion of CAMH, early detection of CAMH problems, and development of an effective service network. Strengthening the capacities of non-specialist workers, e.g. child-care workers, teachers and social workers, would be helpful in improving child mental health and well-being, especially in areas where specialists are scarce. The education sector is an important agent that should increase engagement in CAMHS.

Another barrier in LMICs is the relationship between poverty and child psychopathology, as highlighted, for example, in the Great Smoky Mountain Study in the United States of America.<sup>35</sup> In this natural longitudinal experiment, families that moved out of poverty experienced a reduction in their children's conduct and oppositional disorder but not their anxiety and depression. The findings suggest that children's symptoms, particularly



those of oppositional and deviant behaviour, were affected by economic constraints on parents' ability to devote scarce time to supervising their children.<sup>35</sup>

Monitoring and research are the subject of domain 6. Sharing resources among countries to conduct a regional epidemiological survey would potentially be a cost-effective option for LMICs and regional results may be more generalizable than national data.

Child mental health professionals have a dilemma when deciding what to do first. Their training may focus on academic issues of treatment and rehabilitation in highly specialized areas and may rarely cover the skills required for administration of CAMHS. This reinforces the model whereby CAMH is seen as a tertiary-care specialty rather than an integral part of primary health care. However, developing excellent services in urban-based clinics while the majority of patients live in rural areas is not an equitable way to provide CAMHS and may lead to hospital clinics being overcrowded with patients, many of whose mental health difficulties could and should have been managed in the community. Although many child mental health professionals realize the importance of CAMHS in primary health care, resource and time constraints will limit their abilities to manage this problem. Nevertheless, it is the responsibility of mental health practitioners to convince policy-makers and funders about the nature of CAMH in child development, through the media and publication of research and surveys.<sup>36</sup>

Many LMICs are non-English-speaking countries, so elimination of non-English language publications is a major limitation of this review. Researchers from these countries are likely to have more difficulties publishing their work in English, which leads to publication bias. It is likely that there is considerable information in the local languages of these researchers that could not be included in this review.

## Conclusion

The provision of CAMHS in LMICs needs a specific strategy to maximize the potential of limited resources. Mental health-policy and awareness campaigns are powerful measures to drive CAMHS. Training in CAMH for primary health-care professionals, and integration of CAMHS into existing primary health-care service is required in resource-constrained settings. A wide gap in research into CAMHS still needs to be filled. To overcome these challenges, child psychiatrists in LMICs need a perspective that includes both medical and public-health-related factors, as well as an ability to seize the opportunities that exist among the many obstacles.

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