Promoting child and adolescent mental health in low and middle income countries

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Children and adolescents in low and middle income countries (LAMIC) constitute 35–50% of the population. Although the population in many such countries is predominantly rural, rapid urbanisation and social change is under way, with an increase in urban poverty and unemployment, which are risk factors for poor child and adolescent mental health (CAMH). There is a vast gap between CAMH needs (as measured through burden of disease estimates) and the availability of CAMH resources. The role of CAMH promotion and prevention can thus not be overestimated. However, the evidence base for affordable and effective interventions for promotion and prevention in LAMIC is limited. In this review, we briefly review the public health importance of CAM disorders in LAMIC and the specific issues related to risk and protective factors for these disorders. We describe a number of potential strategies for CAMH promotion which focus on building capacity in children and adolescents, in parents and families, in the school and health systems, and in the wider community, including structural interventions. Building capacity in CAMH must also focus on the detection and treatment of disorders for which the evidence base is somewhat stronger, and on wider public health strategies for prevention and promotion. In particular, capacity needs to be built across the health system, with particular foci on low-cost, universally available and accessible resources, and on empowerment of families and children. We also consider the role of formal teaching and training programmes, and the role for specialists in CAMH promotion. **Keywords:** Cross-cultural, developing countries children, mental health, prevalence, protective factors, public health, risk factors. **Abbreviations:** CAMD: child and adolescent mental disorders; CAMH: child and adolescent mental health; LAMIC: low and middle income countries.

Child and adolescent mental health (CAMH) can be defined as (World Health Organization, 2005, p. 7):

> … the capacity to achieve and maintain optimal psychological functioning and well being. It is directly related to the level reached and competence achieved in psychological and social functioning.

The first part of this definition views CAMH as a positive dimension seen as 'a resource … [that] is essential to subjective well-being and to our ability to perceive, comprehend and interpret our surroundings, to adapt to them or change them if necessary, and to communicate with each other and have successful social interactions' (Lehtinen et al., 2005, p. 46). Child and adolescent mental *ill-health*, on the other hand, is about the inability of a child to reach the optimum level of competence and functioning reflected in disorders, such as depression and learning disabilities. In this article for the Annual Research Review of the *Journal of Child Psychology and Psychiatry*, we consider the strategies for capacity building for CAMH promotion as well as for the prevention of CAM disorders (CAMD) from the perspective of low and middle income countries (LAMIC). We begin by briefly providing an overview of our knowledge of CAMH in LAMIC. While CAMH is a broad concept which goes well beyond the simple absence of a mental disorder, the burden of disorders (CAMD) is the primary indicator of mental health status which has been systematically studied in LAMIC. We consider the burden of CAMD from an epidemiological perspective, as well as how CAMD relate to social and public health development priorities in LAMIC. Next, we briefly consider risk and protective factors for CAMD, with a specific focus on the context of these factors in LAMIC. The final part of our review then describes the capacity building strategies for promoting CAMH. While we have attempted to collate evidence available from all LAMIC contexts, there is a specific emphasis on Africa and South Asia, which reflects the authors' experiences.

The significance of CAMH in LAMIC

The evidence base on the burden of CAMD in LAMIC is relatively small; mental health research in LAMIC contributes barely 3–6% of all published mental health research in the world (Patel & Sumathipala, 2001; Saxena, Paraje, Sharan, Karam, & Sadana, 2006), and research on CAMD represents only a small fraction of this research. This very small

evidence base on CAMD (and thus, by extension, on CAMH) is due to a number of factors: in particular, insufficient skilled human resources, low awareness and low priority, high service load, greater concern for child mortality than morbidity, and journal acceptance biases against LAMIC research. Still, despite these enormous challenges, epidemiological evidence is now available from a number of LAMIC which attest to the reliability of tools for the measurement of psychiatric symptoms and diagnoses, the existence of mental and developmental disorders, and the demonstration of their impact on health care seeking and other aspects of the lives of children and adolescents. Much of this evidence has been reviewed in another paper in this *Annual Review* issue (Belfer et al., this issue) and in a recent review of youth mental health for the Lancet Series on Adolescent Health (Patel, Flisher, Hetrick, & McGorry, in 2007b). Here we will only highlight key findings related to the prevalence and public health significance of CAMD.

Historically, the landmark World Health Organization studies on the burden of CAMD in LAMIC represent the first systematic attempt to measure and describe these conditions (Giel, 1982; Giel et al., 1981). Since then, a series of population- and school-based studies have built the evidence base on the prevalence and risk factors for CAMD. There is also, now, a small evidence base arising from longitudinal studies of CAMD. Table 1 summarises the findings of the prevalence of CMD from selected studies from LAMIC in recent years which used locally validated measures of mental disorder. These studies represent research from only a few countries and may not be representative of all countries or settings within countries. Furthermore, the studies differ considerably from each other in terms of, *inter alia*, instruments, informants, whether impairment was considered in assigning a diagnosis and the diagnostic system that was used. It is unclear whether the differences between studies are attributable to such methodological differences, as opposed to differences attributable to varying exposure to risk and protective factors for psychopathology. Although many studies report rates which are lower than those reported from the high income countries (HIC), CAMD may pose a significant burden on public health of LAMIC due to the larger populations and the higher proportion constituted by children and adolescents (up to 50% in some LAMIC), lack of resources and manpower, and lower recognition and priority allocation. Thus, the existing studies do clearly indicate a large burden of CAMD. There are even greater variations in the pattern of disorders seen in communities compared to clinics; for example, rates of severe intellectual disability are much higher in some developing countries than those in the western countries (Stein, Durkin, & Belmont, 1986); enuresis is the commonest disorder found in most community-based studies (Malhotra, Kohli, &

Table 1 Selected studies of the prevalence of child and adolescent mental disorders in low and middle income countries

Author (s), date	Place setting	N	Age range (years)	No. of Stages	Main instrument	Informant (s)	Diagnostic system	Presence of impairment criterion	Prevalence (%)
Hackett et al., 1999	India (Kerala)Community	1403	8–12	2	Rutter questionnaires	Adult	N/a	N/a	9.4
Mullick & Goodman, 2005	Bangladesh Community	922	5–10	2	DAWBA	Adult	ICD	Yes	15%
Fleitlich-Bilyk and Goodman, 2004	Brazil Urban schools	1700	4–17	2	DAWBA	Adult	DSM	Yes	6.9
Goodman et al., 2005	Brazil Rural community	1251	7–14	2	DAWBA	Adult	DSM	Yes	12.7
Tadesse et al., 1999	Ethiopia Rural community	3001	5–15	1	SRQ	Adult	N/a	N/a	17.7
Canino et al., 2004	Puerto Rican Community	1886	7–14	1	DISC	Adult and child	DSM	Yes	6.9
Robertson et al., 1999	South Africa Urban community	500	6–16	1	DISC	Adult and child	DSM	Yes	15.2
Pillai et al, submitted	India (Goa) Community	2048	12–16	1	DAWBA	Adult and child	DSM	Yes	1.8
Srinath et al., 2005	India (Bangalore) Community	2064	0–16	2	DISC	Adult and child	ICD	Yes	12.5
Malhotra et al., 2002	India (Chandigarh) School	963	4–11	3	Clinical assessment	Adult and child	ICD	Yes	6.33

Abbreviations: DAWBA = Development and well-being assessment; DISC = Diagnostic Interview Schedule for Children; DSM = Diagnostic and Statistical Manual; ICD = International Classification of Diseases; SRQ = Self report questionnaire.

Arun, 2002; Srinath et al., 2005; Giel et al., 1981); and epilepsy and somatisation are common in community and clinic-based studies (Lal & Sethi, 1977; Malhotra & Chaturvedi, 1984; Patel, Simbine, Soares, Weiss, & Wheeler, 2007d).

Like most mental disorders, symptoms of CAMD are distributed continuously in a population, there being no clear point of rarity between 'non-cases' and 'cases'. However, many children and adolescents who experience symptoms of poor mental health, but not meeting diagnostic criteria for disorder, are affected by their mental ill-health. Furthermore, the scope of CAMH incorporates community development issues which are the key to sustaining social and economic progress in the countries and go well beyond CAMD as defined by the major nosological systems. The Millennium Development Goals (MDGs) represent a development agenda which has been adopted by the global community and which commit to an expanded vision of development that vigorously promotes human development as the key to sustaining social and economic progress in all countries (Sachs & McArthur, 2005). While the attainment of all these goals is likely to have profound implications for health in general, and CAMH in particular, our concern here is whether addressing CAMH in itself may be a factor in attaining some of the MDGs. In this regard, we consider evidence which indicates that promoting mental health of children, adolescents and mothers may be associated with the attainment of Goals 2 (to achieve universal primary education), 4 and 5 (to reduce child mortality and improve maternal health respectively), and 6 (combat HIV/AIDS and other diseases).

A key target for MDG 2 is to ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling. This goal will never be attained unless educational systems address the needs of children and adolescents with developmental and mental disorders. While much attention has been paid to pedagogical and socioeconomic determinants of child educational attainment, there has been little acknowledgement of the role of developmental and mental disorders and other CAMD in this regard. As mentioned above, brain damage and consequent neuropsychiatric morbidity, intellectual disability and epilepsy are more common in LAMIC than in high income countries, and this has a direct bearing on the educational attainment of children and its lifelong impact including secondary morbidity (Grantham-McGregor et al., 2007). Thus, in educational systems already challenged by inadequate resources, crowded classrooms and inconsistent quality, it is plausible to hypothesise that learning and emotional problems are important risk factors for dropout (Patel & De Souza, 2000). Studies specifically examining the causes of school failure have found that emotional and learning disorders are amongst the most important risk factors. For example, one study which screened 2,190 children in South Africa who had to repeat school entry grades showed that sensory deficits, a lack of educational preparation, starting school too young and very strict discipline leading to student anxiety were factors that contributed to failure (Frets-van Buuren, Letuma, & Daynes, 1990). A prospective cohort study in South Africa found that tobacco use predicted dropout between Grade 8 and Grade 12, after adjusting for a host of potential confounders (Flisher et al., under review). A Kenyan study showed that, of the 441 students referred to a psychological assessment clinic by primary schools for poor academic performance, learning disabilities and emotional problems were the commonest causes (Dhadphale & Ibrahim, 1984). A survey of 1,535 primary school children drawn from schools in Bangalore city found that 18% and 15% suffered from psychological disturbance and learning disability, respectively (Shenoy, Kapur, & Kaliaperumal, 1998). Learning problems were associated with a low quality of academic work, poor concentration, not carrying out tasks, low motivation and underachievement (Shenoy et al., 1998). In rural primary school children in India, 13% of those having an IQ of greater than 90 were found to have poor achievement in an arithmetic test and a teacher's assessment (Agarwal, Agarwal, Upadhyay, & Singh, 1991). This study suggested a high prevalence of specific learning disabilities in these children, none of which were recognised by the educators or health service providers. A study in rural India found that more than 80% of the 172 children in a group of dropouts suffered from learning disability as diagnosed by a psychological screening test (Pratinidhi, Kurulkar, Garad, & Dalal, 1999). A recent prospective study from Goa, India (Andrew et al., in preparation) of nearly 2,000 adolescents aged 12 to 14 years has found that baseline mental disorders, though rare, were independent risk factors for later school dropout. A case–control study from Brazil has reported a strong association between school dropout and conduct disorder after controlling for potential confounding factors, including IQ (Tramontina et al., 2001). A longitudinal study from South Africa found that girls who both perpetrated, and were victims of, bullying were more likely to drop out of high school than those who had not both perpetrated, and been a victim of, bullying (Townsend, Flisher, Chikobvu, Lombard, & King, in press). This was not the case for boys, nor for students who had been involved as either a perpetrator or a victim (but not both).

The improvement of maternal mental health has a potential to play an important role in attainment of MDGs 1, 4 and 5, which address child mortality, child under-nutrition and maternal health. Nearly a fifth of all pregnancies occur in women under the age of 19 years in LAMIC, and such pregnancies are associated with adverse health outcomes for mother and child (Mehra & Agrawal, 2004). Maternal

depression during pregnancy and following child-birth is associated with an increased risk of low birth-weight, cessation of breast-feeding, infant diarrhoeal episodes, infant under-nutrition and stunting over the first year of life (Patel, De Souza, & Rodrigues, 2003; Rahman, Iqbal, Bunn, Lovel, & Harrington). New evidence is emerging from other parts of the world confirming some of these findings and demonstrating new risk associations, for example between depression during pregnancy and premature birth in Ethiopia (Hanlon et al., personal communication). Data are emerging showing that suicide is now the leading cause of death in young women in Asia, and accounts for up to half of all deaths of adolescent and young adult women (Aaron et al., 2004; Phillips, Li, & Zhang, 2002; Prasad et al., 2006). Depression during motherhood in adolescence may contribute to both maternal mortality and morbidity. Thus, promoting the mental health of adolescent girls is likely to be an important public health intervention to improve maternal and child health in LAMIC.

Finally, MDG 6, which is explicitly concerned with controlling HIV/AIDS, has a number of indicators which are concerned with children and adolescents, for example improving the percentage of 15–24-year-olds with comprehensive correct knowledge of HIV/AIDS. There is a growing body of evidence from high and medium prevalence countries in LAMIC, such as South Africa and India, which show associations between psychosocial factors and HIV/AIDS (Collins, Holman, Freeman, & Patel, 2006). However, there is less research evidence on the associations between CAM disorders and HIV/AIDS. In a Brazilian study with adolescents seeking HIV testing, those who were seropositive had significantly higher scores in all dimensions of psychiatric symptomatology (Bassols, Santos, Rohde, & Pechansky, 2007). Furthermore, in multivariate analyses of positive HIV status on three composite variables (sex-risk, drug-risk, and psychiatric symptomatology), only psychiatric symptoms were associated with positive HIV status (Bassols et al., 2007). A study of school-going adolescents in Goa, India, reported that sexual risk behaviours were more common among adolescents with emotional disorders than their counterparts who did not suffer from such disorders. Furthermore, exposure to sexual or physical violence was an important risk factor for both these outcomes (Patel & Andrew, 2001). This study also showed that adolescents themselves perceived psychosocial factors, including poor educational achievement and relationships with parents, to be a more important priority than sexual health. This suggests that integrating these concerns in sexual health promotion programmes would make them more acceptable (Andrew, Patel, & Ramakrishna, 2003). In South Africa, early sexual intercourse is associated with a range of factors that are associated with mental health, such as alcohol and marijuana use (Flisher, Ziervogel, Chalton, Leger, & Robertson, 1996; Palen, Smith, Caldwell, Flisher, & Mpofu, 2006), and sexual risk behaviour such as early onset, multiple partnering and condom non-use has been shown to be associated with low self-esteem (Wild, Flisher, Bhana, & Lombard, 2004). Furthermore, exposure to partner violence predicts earlier commencement of intercourse (Mathews et al., submitted). Promoting CAMH may play a central role in reducing the burden of HIV/AIDS in children and adolescents, and in mediating the adverse impact of HIV/AIDS on these vulnerable groups.

Thus, CAMH promotion may be expected to lead to benefits not only in reducing the burden of CAMD in LAMIC, but also in contributing to the broader public health and human development goals for these countries. In the next section of the paper we consider some of the major risk and protective factors which influence CAMH, as the basis for reviewing CAMH promotion strategies and related capacity building in LAMIC.

Risk and protective factors

Much of child psychiatric epidemiology has focused on describing risk factors for CAMD. Much less research has focused on *protective* factors which decrease the probability of suffering mental health problems, and to the *promotive* factors which actively enhance positive psychological well-being (Patel & Goodman, 2007c). Understanding of these risk, protective and promotive factors is crucial in a discussion on promotion of CAMH. There is a substantial evidence base on risk, protective and promotive factors for CAMH and it is not our intention to review this for the purpose of this paper. Socioeconomic deprivation, family disruption and psychopathology, early childhood insults (physical and psychosocial), childhood temperamental difficulties, violence and intellectual impairment are all widely recognised risk factors; conversely, sensitive and authoritative parenting, decent educational opportunities, psychological autonomy and good physical health are widely recognised protective factors (Evans et al., 2005; Rutter & Silberg, 2002) (Box 1). Here, we focus on considering some key issues regarding the relevance of this evidence to LAMIC contexts. Are some risks already identified more common in LAMIC contexts? Are there contextual variations which heighten or diminish the impact of risk or protective factors? Are there risks or protective factors which are specific to particular social or cultural contexts?

Although the lives of a far greater proportion of children in many LAMIC, as compared to HIC, are characterised by exposure to socioeconomic deprivation, family disruption, poor physical health and violence, there may also be a range of

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Box 1 Indicators of positive mental health for children and adolescents

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Indicators of positive mental health at the individual level

Individual indicators:	Sense of belonging
	Self-esteem
	Engagement
	Self-determination
	Control and quality of life
	Intellectual and emotional well-being
Family indicators:	Parental mental health
	Freedom from violence and abuse
	Family cohesion
	Parent–child attachment
	Monitoring activities of children and adolescents
	Providing safe and secure environments for children and adolescents
	Sensitivity to child's intellectual and temperamental individuality and uniqueness
	Opportunities for education, recreation and play
	Judicious use of authority

Organisational and community indicators of positive mental health
Presence of safe and supportive environments
Quality of social and learning environment
Extent to which staff at schools and day centres acknowledge and value the intellectual and temperamental individuality
  and uniqueness, skills and accomplishments of children and adolescents

Societal indicators of positive mental health
Access to essential requirements
    Clean water
    Adequate food
    Safe shelter

Equity and social participation for parents
    Educational participation
    Women's participation in the workforce
    Access to affordable quality childcare

Evidence of societal valuing and protection of children
    Universal provision of education and health care
    Legislation on children's rights and protection

Integrated and protective child and adolescent public policy and programmes

Strong legislative platform for child and adolescent mental health issues
Adequate resource allocation for child and adolescent mental health

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socio-cultural factors which serve as protective or promotive factors. Risk and protective/promotive factors may be grouped in different ways; in this paper we will group factors using a similar taxonomy to our grouping of interventions for CAMH promotion, i.e., factors arising from individual determinants; family determinants; and social/community-level determinants. We do recognise, though, that multiple factors operate and interact with one another. For example, in a recent prospective study of Brazilian schoolchildren aged 7 to 14 years, both dimensional and diagnostic measures of child psychopathology were independently associated with living in a dangerous area, a non-traditional family system, parental stress, harsh physical punishment, poor general health, low IQ, repeating a year at school, and male gender. Psychological difficulties were moderately persistent across time. Younger age, lower maternal education, and lower child's IQ predicted a worse prognosis even after adjusting for initial psychopathology (Goodman, Fleitlich-Bilyk, Patel, &

Goodman, 2007). Thus, our grouping is purely to provide a coherent structure to our presentation.

Individual determinants. Males and females differ in terms of prevalence rates of psychopathology: males are more likely to suffer from developmental disorders, disruptive behaviour disorders and schizophrenia, while females are more likely to suffer from anxiety and mood disorders. These sex differences are likely to be mainly attributable to differences in exposure to risk and protective factors. For example, girls are more likely to have reduced access to education, and be exposed to sexual abuse, child prostitution and child domestic labour (UNICEF, 2007). Other individual determinants which studies in LAMIC have shown to influence the risk for CAMD include temperament (Malhotra, Varma, & Verma, 1986) and cognitive impairment. Neurobiological risks due to perinatal insult, brain infections (e.g., cerebral malaria, HIV, TB meningitis), trauma (birth, accidental and violent), nutritional deficiencies and chronic physical health problems are commoner in

LAMIC. Such problems are risk factors for CAMD; part of their impact is mediated through cognitive impairment. Studies show that malaria has both short-term effects on cognitive function and longer-term effects on cognitive and language development among children (Institute of Medicine, 2001). The impairment is associated with the severity of the infection, cerebral malaria being particularly important (Idro, Carter, Fegan, Neville, & Newton, 2006; Kihara, Carter, & Newton, 2006). Similarly, seizure disorders in childhood, which are more common in many LAMIC (Patel et al., 2007c; Preux & Druet-Cabanac, 2005), are strongly associated with behaviour and emotional disorders (Datta et al., 2005).

Family determinants. Disruption in family functioning constitutes a significant risk factor for CAMH. Secure attachment, developmentally appropriate and sensitive parenting, and firm and consistent handling are related to better adjustment in children. Although there are cultural differences in parenting styles, there is little reason to question that factors such as parental warmth and authoritative parenting are the most adaptive parenting styles. There is consistent evidence that authoritative parenting is a robust protective factor for the development of psychopathology (Graham, 2004) and positive adjustment among adolescents (Steinberg, Mounts, Lamborn, & Dornbusch, 1991). In India, traditionally there is a strong family system, abiding faith in religion and belief in destiny (Malhotra, 1998). There are prescriptions for child rearing which is generally authoritative and hierarchical; children are encouraged to be obedient, less expressive, and follow decisions made by parents. Adults are expected to provide a loving, secure and protective environment and provide a window to the world. All conflicts are expected to be resolved within the family setting. These factors may contribute to resilience, although there is no research that addresses this issue. Other cross-cultural studies have demonstrated the positive impact of respect for elders, encouragement of educational achievement, strong family systems among Asian communities (Loo & Rapport, 1998; Nikapota, Cox, Sylva, & Rai, 1998). Disruptions in family functioning are more common among alternative family forms than among families headed by two biological parents (Emery & Kitzman, 1995); the Brazilian study cited earlier found the same association (Goodman et al., 2007). Hence it could be hypothesised that where socio-cultural attitudes encourage maintenance of a stable family, this could be a protective factor. A review of the mediating factors that determine outcome for children and adolescents following divorce (Hetherington, Bridges, & Insabell, 1998) concluded that, in general, outcomes for children following divorce were less favourable than for children from intact families. However, these differences were modest.

These issues are relevant for LAMIC where the socio-cultural impact of separation and divorce may include social discrimination and disruption of family networks.

Maternal depression, or separation of the infant from mother, affects development of attachment, cognitive and language development. As mentioned earlier, depression during the early postnatal period is an independent risk factor for childhood stunting, under-nutrition and development delay (Patel, Rahman, Jacob, & Hughes, 2004). The impact of parental mental illness on CAMH is due to disruptions of care-giving environment, social attitudes to mental illness, and possible genetic risk factors. A recent longitudinal study in the UK illustrates the possible links between genetic risk factors and environmental risk in maternal depression and conduct disorder in the children (Kim-Cohen, Moffitt, Taylor, Pawlby, & Caspi, 2005). Parental loss is a risk accepted universally but where alternative care is not appropriate the risk will increase. In LAMIC, extended family systems have traditionally offered a buffer to this risk factor; for example, grandmothers living in the homes of black families (Wilson, 1986) and Indian and other Asian families' help in child care. However, there are few studies regarding the role of grandparents (Lavers & Sonuga-Barke, 1997) and the impact of these aspects of family structure and parenting styles must be evaluated in their appropriate socio-cultural context. Furthermore, family systems are rapidly changing with urbanisation and the number of nuclear and non-traditional families is increasing. New challenges are posed by the decimation of families by AIDS, particularly in sub-Saharan Africa, leading to situations where young children are often left without any adult care-givers (Oleke, Blystad, & Rekdal, 2005).

There is evidence that abuse and corporal punishment are a risk factor for mental disorders (Omigbodun, 2004). Although there is some evidence indicating that these experiences may be more common in LAMIC (Krug, Mercy, Dahlberg, & Zwi, 2002), and that there is massive underreporting of abuse, it is also possible that some violent experiences (particularly in the context of parents and teachers) may have different social and cultural significance in terms of their risk for the development of mental disorders (Crouch & Behl, 2001; Gershoff, 2002). There are very few reports on child abuse, particularly child sexual abuse, from developing countries. In a study of school-based adolescents in India, 6% reported a lifetime experience of coercive sexual intercourse; other types of sexual harassment and abuse were commonly experienced and sexual abuse was strongly associated with educational failure, poor physical health and mental health (Patel & Andrew, 2001). In a study conducted among Grade 8 students in Cape Town, South Africa, of those who were in a relationship, 20.7% reported having perpetrated partner violence while

16.4% reported an intention to do so (Flisher, Myer, Marais, Lombard, & Reddy, 2007).

Social and community determinants. There is robust evidence on the associations of socioeconomic deprivation and CAMD in high income countries; many of the factors on the pathway from poverty and CAMD are individual and family determinants mentioned earlier. There is now a growing body of evidence demonstrating adverse effects of relative and absolute deprivation on CAMH in LAMIC (Felitlich & Goodman, 2001; Goodman et al., 2007; Hackett, Hackett, & Bhakta, 1999). Evidence thus far suggests that the greatest vulnerability to disorder arises when poverty is associated with food scarcity leading to under-nutrition, or where other factors such as family dysfunction, family violence, criminality, and high levels of neighbourhood danger coexist. These factors may be more common among urban as compared to the rural poor; thus, studies in Brazil show higher rates of CAMD amongst the urban poor, perhaps because the rural poor had greater social stability and support (Fleitlich-Bilyk & Goodman, 2004). Poverty also leads to a greater risk from other high-risk situations such as being a working child or being a child living on the street with all its attendant dangers (Campos et al., 1994; Lalor, 1999).

Children living in conflict zones may be at risk for mental disorders as a consequence of their experience of violence, owing to their exposure to the loss of their parents and homes, and to their conscription as child soldiers. There is a small, but growing, evidence base on the impact of conflict or war on CAMH, for example from the war-affected regions of Jammu and Kashmir (de Jong et al., 2006), Mozambique (Richman, 1993), and Sri Lanka (Somasundaram, 2004). Even in such extreme situations, however, protective factors may operate to promote CAMH. A study of 10–13-year-old Eritrean war orphans found that orphans reunified with extended families, or those who were placed in small group homes, had better adaptive skills and fewer signs and symptoms of emotional distress than institutional orphans (Wolff & Fesseha, 2005).

An additional variable which could heighten risk in LAMIC situations for children with specific disorders or disabilities may be the lack of supportive services for the affected child and family. Despite the burden of CAMD, studies which assessed help seeking for mental health problems routinely report very low rates (Belfer, 2004). The near complete absence of any CAMH services in most parts of the LAMIC means, *de facto,* that when help seeking takes place, it does so in the general health or mental health (if that is available) sectors – which are typically ill-equipped to deal with these disorders. Apart from scarce resources, beliefs about mental illness also influence help seeking. For example, in a study in Bangalore (Srinath et al., 2005), only 37.5% of the

families of children and adolescents with a mental disorder perceived that their children had any problem. A qualitative study from Goa, India, found that even parents of children with ADHD attending a child guidance centre rarely used biomedical labels or models to explain their child's behaviour problems (Wilcox, Washburn, & Patel, 2007). Socio-cultural values and attitudes related to help seeking could also protect the child – for example, by not labelling the child as being 'sick', or increase the risk – for example where a learning disabled child is hidden away and socially stigmatised, and risks the development of a secondary disorder.

CAMH promotion and prevention of CAMD in LAMIC

The aim of mental health *promotion* is to enhance positive mental health, whereas the aim of mental ill-health *prevention* is to reduce the probability that individuals will suffer from mental disorders (Lehtinen et al., 2005). Promoting resilience provides the dominant approach for mental health promotion, while reducing the impact of risk factors may be considered the dominant approach in prevention. There is thus considerable complementarity between these two approaches, but there are also differences. In mental health promotion, there is generally extensive multi-sectoral involvement. In mental disorder prevention, it is less likely that a range of sectors will be involved. Related to this is the range of effects of intervention which are generally more extensive in mental health promotion as compared to mental disorder prevention where the focus is on specific disorders or other outcomes of interest. The challenges that are encountered when attempting to evaluate the effects of interventions also differ. A particular challenge for promotional interventions is to operationalise and quantitatively assess mental well-being in a manner that defines well-being in a positive manner, is culturally valid, and goes beyond the absence of problems. A further challenge is that the intervention frequently takes place at a level that is distal from the level that the mental health effects are sought, and is therefore less likely to produce detectable effects on individuals than, say, an individual clinical intervention. However, this does not imply that the former intervention is not effective, since there may be small effects across a range of outcomes and hence a substantial effect on the well-being of a population (Rose, 1992).

Mental health prevention interventions can be divided into those that are universal (targeted at the general population of children and adolescents); selective (targeted at individuals or subgroups that are increased risk of developing a disorder); and indicated (targeted at high-risk children or adolescents that have evidence of an incipient disorder) (Mrasek, & Haggerty, 1994). There is very good

evidence of the efficacy, effectiveness and even cost-effectiveness of many such interventions in HIC. For example, behaviour management (Kellam, 1994), social skills training (Greenberg, 1995), multimodal schools programmes (Olweus et al., 1989; Tremblay, 1995), and prenatal or early childhood programmes (Webster-Stratton, Reid, & Kazdin, 2003) have been shown to be effective for conduct disorder and aggression; cognitive and problem-solving skills training (Shochet, 2001) and group interventions focusing on cognitive style (Clarke, 2001) for depression; symptom management training for anxiety (Dadds, 2007; Lowry-Webster, Barrett, & Dadds, 2007); increasing self-esteem and improving eating attitudes and behaviour for pathological eating behaviour (O'Dea & Abraham, 2000); school-based individual-level education combined with a number of extra-curricular interventions for alcohol misuse (Johnson, 1990); and low-dose medication and cognitive behaviour therapy for schizophrenia (McGorry et al., 2002). In many cases, these interventions have been applied in several settings, thus providing some promise that the findings are generalisable and scalable. A very small number of preventive and promotive interventions have been evaluated in LAMIC. A recent systematic review described the evidence-base for prevention programmes that foster mental health or prevent the occurrence of mental disorders in infants, children and adolescents (Flament et al., 2007). Of the 47 separate programmes reviewed, only one had been implemented in a LAMIC. Specifically, the Penn Prevention Programme, which targets depression and anxiety through cognitive behavioural techniques, has been implemented in China (Gillham & Reivich, 1999). Some other interventions for which evidence is available from LAMIC are described later. In the context of the limited evidence base in LAMIC, we propose that interventions which have been shown to be effective in some settings be considered for scaling up in LAMIC, with the appropriate modifications, and provided that steps are taken to evaluate their effectiveness in the new settings.

Capacity building for CAMH promotion and prevention

Building capacity in different sectors of the health system lies at the heart of promotion and prevention. Building capacity in CAMH must also focus on the detection and treatment of disorders for which the evidence base is somewhat stronger, and on wider public health strategies for prevention and promotion. In our view, the following are the key principles underlying capacity building in LAMIC:

Adopting a holistic mental health framework. In many countries mental health is conceptualised in terms of learning difficulties and emotional or behavioural disturbance. Whereas this may be the necessary focus for mental health services, developing an ethos related to a broad understanding of positive mental health or well-being, and not mere absence of disorder, is essential for cost-effective capacity building. Understanding this conceptual basis also allows for an ownership of the issue for a broad range of stakeholder groups at all levels from policy maker to the child and for the justification for the strategies proposed.

Linking capacity development with achievable goals. Resource development and capacity building has to relate to achievable goals and targets that are acceptable and make sense in terms of individual or national priorities. There needs to be a plan of implementation for these goals with achievable targets using feasible and affordable technologies, and sustainable resources. The methodologies need to be acceptable to the key stakeholders involved and have some evidence of effectiveness.

Building capacity at different levels of the health system. Affordable and sustainable mental health resources are a challenge in all societies. Both aspects need to consider potential coverage. A specialist high-cost service with a limited capacity to meet needs may not be affordable as a realistic CAMH intervention when scaled up to the population. Resources that are affordable and sustainable must inevitably involve low-cost community resources – parents, children and adolescents, primary health care workers, teachers, grass-root workers and volunteers.

We have considered capacity-building strategies based on these principles and, following the model for grouping risk and protective factors, categorised mental health promotion and prevention interventions into those which strengthen individuals, strengthen families, strengthen communities and systems, and reduce societal barriers to mental health (Funk, Gale, Grigg, Minoletti, & Yasamy, 2005). The evidence we present below was obtained through multiple sources: the experience of the authors; a recent review of youth mental health which involved two of the authors (Patel et al., 2007b); and a search of PubMed for child and adolescent mental health intervention studies in LAMIC. As others have found before us (Flament et al., 2007), the results were meagre, and pointed to a considerable variation in the quality and generalisability of the findings. The weakness of the evidence base has limited our ability to infer comparative strengths or limitations of specific interventions; however, we envisage that a combination of interventions, in various sectors, will act collectively and synergistically to promote CAMH.

Strengthening individuals and families

Parenting and preschool educational interventions. The importance of play and stimulation for early childhood development has been, for several years, an integral part of the Early Child Development programme of UNICEF. Public health programmes on childhood development are beginning to focus on interventions which promote maternal mental health and appropriate parenting during infancy and early childhood as a means to improve child outcomes. Two recent reviews have described the effectiveness of interventions aimed at improving cognitive stimulation and nutritional supplementation on child development outcomes (Engle et al., 2007; World Health Organization, 1999). Several programmes targeting malnutrition and promoting psychosocial development have been implemented in developing countries. Notable ones include: the Integrated Child Development Scheme (ICDS) in India, the PANDAI (Child Development and Mother's Care) Project in Indonesia, the PRONOEI programme in Peru, the PROAPE programme in Brazil, the Integrated Programme for Child and Family Development in Thailand, and the Hogares Comunitarios de Bienestar programme in Colombia. All of these programmes target children under 7 years of age, and are implemented mainly through low-cost, basic health workers (often women) recruited from the local community. The ingredients of the programmes include nutritional supplementation, preschool education and appropriate child-care facilities, immunisation and education and support for mothers. A number are being implemented on a large scale; the ICDS in India, for example, is being put into operation across the country and has reached more than 17 million children since its inception in 1975. Most programme evaluations demonstrate the beneficial impact of these interventions on child cognitive development; in addition, benefits are also noted on skills such as sociability, self-esteem and motivation (World Health Organization, 1999).

Apart from programme evaluations, there are is also a growing body of controlled trial evidence in support of parenting and parent–child interventions. In South Africa, preliminary data suggests that a community-based counselling and support intervention may have positive outcomes for infant mental health (Cooper, Tomlinson, Molteno, Swartz, & Murray, 2002), and a randomised controlled trial based on these promising findings is currently under way. The long-term studies on the effect of early child psychosocial stimulation in Jamaica provide the most compelling evidence in support of interventions aimed at building parental capacity. In 1986–7, the researchers identified a group of 129 children aged 9–24 months in Kingston, Jamaica, who were from very poor families and were suffering from growth stunting. They were randomly allocated to one of four groups: control, supplementation, stimulation, and both supplementation and stimulation. The supplementation comprised 1 kg of milk-based formula each week. The stimulation comprised weekly visits to the home by trained community health workers. The aim was to enhance the interactions between the mothers and their children. This was achieved by demonstrating play techniques, involving the mothers in play with the children, and encouraging the mothers to talk to their children, praise them and give positive reinforcement. Toys and picture books were left in the homes, and mothers were encouraged to play with their children on a daily basis. In 2003, the researchers interviewed 103 participants, 80% of those who commenced the trial. They found that the children (now young adolescents) who had received stimulation in infancy were less anxious, had fewer symptoms of depression, better self-esteem, and fewer attention problems than their non-stimulated counterparts. Furthermore, participants who had received stimulation were less likely to have been suspended from school or expelled than those who had not received stimulation (Walker, Chang, Powell, & Grantham-McGregor, 2005; Walker, Chang, Powell, Simonoff, & Grantham-McGregor, 2006). An Indian study involved a 6-year follow-up of children, recruited through a survey, who were at risk for mental disorders (Malhotra, 2006). An intervention was offered that consisted of parental advice and counselling focusing on recognition of the child's temperamental and cognitive individuality, use of appropriate parenting strategies, and understanding of normal developmental changes. This intervention contributed to lowering the incidence of mental disorder to 10/1000/yr in contrast to children in a control group (18/1000/yr) who did not receive any intervention.

The key findings of these evaluations and trials are that parenting, nutritional and educational interventions improve psychosocial development in disadvantaged populations, and that interventions which combine both nutritional and psychosocial components (such as promoting mother–infant interaction) and those which are implemented as early as possible and for the longest duration have the greatest impact; and that impact is evident for many years after the intervention. We believe the evidence base in support of these interventions is robust enough for scaling up in routine early child-care programmes. Developing the appropriate training programmes requires familiarity with the local context and day-to-day tasks of parenting. This inevitably means initial exploratory work to familiarise trainers with these routines and task structures, and an appropriate review of the literature. For example, from the Indian context, stages of child development are described in Ayurvedic paediatrics with corresponding prescriptions for child care practices that are sensitive to age, gender and cul-

tural contexts and socialisation processes promoting healthy development (Kapur, 2003). Despite rapid changes due to globalisation, these beliefs still constitute an important part of the Indian ethos. There is need to study and evaluate the role these beliefs and practices play in child development and can be used for promotive or preventive interventions. Thus, for example, trainers need to know how mothers usually structure their child's day so that introducing responsive reciprocal interactions and stimulating play activities may be suggested in ways that are feasible and acceptable.

Building capacity in children and adolescents. Capacity building in children and adolescents will include provision of adequate education, promotion of good physical health, development of creativity and life skills. Life skills training refer to the interactive process of teaching competencies through a set of structured activities, such as role play, games and debates (Flisher, 2005). There is an iterative loop in the process of acquiring life skills that involves demonstration and practice, self-assessment, supportive and constructive feedback, and follow-up practice sessions. Life skills include 'decision-making, problem-solving, creative and critical thinking, effective communication, interpersonal relations, self awareness, the ability to communicate with empathy, coping with emotions, stress management, conflict resolution, the ability to act assertively in responding to problems, the capacity to pursue goal-directed behaviour, and the ability to evaluate the effectiveness of one's actions and pursue other options if necessary' (Flisher 2005). A high level of proficiency in life skills will promote the development of sound mental health (Elias & Weissberg, 2000). In addition to these generic life skills, there are specific life skills for particular mental health challenges, such as the skills that are necessary for being able to refuse to use a substance that one has been offered. There is evidence, mostly from developed countries so far, that life skills education is effective in the prevention of substance abuse, adolescent pregnancy, bullying, and improved academic performance and school attendance, and the promotion of mental well-being and healthy behaviours (World Health Organization, 1997). In a controlled study from India, with 122 normal and 117 emotionally disturbed adolescents, a standard package of life skills training enhanced psychosocial competence in all and symptomatic improvement in about 80% of adolescents with internalising disorders (Goyal, 2006).Although life skills can be developed in a range of settings, including the health system and residential facilities, the most significant is the school system, which will receive further attention below. Zippy's Friends is one such example of a school-based intervention aimed at building life skills of primary school children which has been rolled out in some LAMIC

(Box 2) (Mishara & Ystgaard, 2006). There are a number of advantages to situating such interventions in the school setting, particularly in LAMIC: relatively larger proportions of young people attend school as opposed to have contact with other settings such as health facilities; cost-effectiveness since existing resources (including human resources) can be mobilised; evaluation activities are relatively easy to carry out since there are fewer barriers in locating study participants; and the school is an important agent for the socialisation of young people in that it shapes relationships and behaviour, which implies that the necessary context is present in which mental issues can be addressed (Flisher, Brown, & Mukoma, 2002).

Strengthening communities and systems

Although we may assume that strong community networks are vital ingredients in promoting CAMH – consider the evidence that living in areas with reduced community networks and cohesion, as indicated by high levels of social breakdown and violence, is a risk factor for CAMD – we were unable to identify a single evaluation of the impact of interventions strengthening community networks of CAMH in LAMIC. We were able to identify some evidence for school, NGO and health-system-based programmes which are described below.

School systems. Education equips children and adolescents with the core abilities to access resources, to assert their rights, and to serve as agents of change for several social and family problems. A core priority, and one which is by no means guaranteed in many LAMIC, is to provide opportunities for universal education through neighbourhood schools at a low cost. The next step is to strengthen this school system through the implementation of health-promoting schools. According to the World Health Organization (1992, p. 2), a health-promoting school is defined as:

> A place where all members of the school community work together to provide students with integrated and positive experiences and structures which promote and protect their health. This includes both the formal and informal curricula in health, the creation of a safe and healthy school environment, the provision of a safe and healthy school environment, the provision of appropriate health services and the involvement of the family and wider community in efforts to promote health.

The rationale for strengthening school systems through a health-promoting schools approach as a means of promoting mental health is that there is considerable co-variation between mental health and other risk behaviours, and interventions should ideally target these in an integrated manner. Furthermore, many risk and protective factors for the adverse outcomes are located in the school context.

Box 2 Zippy's Friends

Class group from Brazil

Children from the Stepping Stones kindergarten in Goa, India

Zippy's Friends is a school-based programme that helps young children to develop coping and social skills. It is now running in primary schools and kindergartens in 11 countries, and has already been delivered to more than 100,000 children. The programme grew from the work of the Samaritan befriending movement, which aims to prevent suicide by providing a free and confidential listening service to people who are in crisis or despair. Zippy's Friends usually runs for a school year, and teachers are specially trained to teach it. The programme is built around a set of stories about Zippy the stick insect and his friends, a group of young children, who have to confront familiar but difficult issues – friendship, communications, feeling lonely, bullying, dealing with change and loss, and making a new start. The stories are supported by games and activities. The programme does not tell children what to do in different situations, but rather helps them to generate and evaluate coping strategies for themselves. Zippy's Friends is now running in five low or middle income countries – Brazil, China, India, Lithuania and Poland – as well as in Canada, Denmark, England, Iceland, Norway and the USA. A study of more than 600 children in Denmark and Lithuania showed that skills of cooperation, self-control, assertion and empathy all increased in the groups receiving this programme, compared to the control groups (Mishara & Ystgaard, 2006). The number of coping skills used significantly increased, with an increase in 'positive' skills and a decrease in unhelpful strategies. The programme was equally effective with boys and girls. A subsequent study of 346 children in Lithuania showed that those who took part in Zippy's Friends in the final year of kindergarten handled the transition to primary school much more successfully than those who did not. Although the programme is owned by Partnership for Children, a UK-based charity, its implementation in different countries is handed over to local partner agencies, which may be national or local government departments, non-governmental agencies, universities or teacher training colleges. One factor that has slowed the programme's expansion is the requirement that all teachers must be specially trained to run it. This increases costs, which in a few cases has proved to be an insurmountable problem. On the other hand, training protects the programme's integrity and increases its effectiveness. It also broadens the impact, by helping to change teachers' attitudes and practice. This has been particularly true in countries where the educational system has been more traditional. A study of 309 teachers who had taught Zippy's Friends in six different countries showed that 95% of them felt the programme had helped them to appreciate the importance of listening to children's views, and 89 per cent felt they had become better teachers. (http://www.partnershipsforchildren.org)

Even though mental health is an outcome of a health-promoting schools initiative, the existing evaluations of health-promoting schools (none of which were conducted in LAMIC) have not addressed mental health, apart from substance use (Mukoma & Flisher, 2004).

Sexual risk behaviours are one of the highest public health priorities for adolescent health in

LAMIC. A number of interventions have aimed to decrease the extent of sexual risk behaviour among adolescents in LAMIC, especially in sub-Saharan Africa (Kaaya, Mukoma, Flisher, & Klepp, 2002; Mukoma, Flisher, Klepp, Flisher, & Kaaya, 2007). These interventions have generally had positive effects on knowledge and attitudes about HIV/AIDS, and in some cases have resulted in behaviour changes. CHAMP is a community-collaborative developmentally-timed intervention that focuses on preventing HIV infection in adolescents through promoting resiliency in uninfected pre-adolescent youth (prior to commencing sexual activity) and their families (Bhana et al., 2004). The intervention is entirely consistent with a mental health promotion approach in that it intervenes at multiple levels and adopts a competency-based approach. The intervention was modified for application in a very poor rural community in South Africa through an ethnography of the dynamics of HIV spread at the site, focus groups with key informants and piloting. The intervention employs adult education principles, including a cartoon-based narrative, to deliver its content. A pilot study involving a non-randomised control trial among 124 families concluded that the intervention had a favourable effect on the adults in terms of AIDS knowledge; engaging in talk about hard-to-talk-about topics such as alcohol and drugs; network support; and moving away from manipulative and passive aggressive communication styles to more assertive styles. A randomised controlled trial is currently in progress to assess the effects on both the families and adolescents in a rigorous manner. Such programmes are relevant for the prevention of mental disorders as early sexual intercourse, unwanted pregnancy and HIV infection and other sexually transmitted infections can exert negative effects on mental health (Collins et al., 2006).

Developing non-governmental organisations. Non-governmental organisations in many developing countries are now playing a key role in promoting health and preventing disease. Many of the CAMH promotion case studies presented in this article are being implemented by, or in collaboration with, NGOs. Some international NGOs, such as Save the Children, have integrated CAMH perspectives in their programmes, particularly in post-conflict and emergency situations. One international NGO, the International Medical Corps, trained a child psychiatrist and developed a rolling programme of training using specialist trainers from overseas to train general psychiatrists in Kosovo (Jones, Rrustemi, Shahini, & Uka, 2003). A recent book has documented 17 mental-health-related NGO programmes being implemented in India (Patel & Thara, 2003). Many NGOs are seeking to integrate CAMH within a broader child health agenda; some are now specifically focusing on CAMH. Sangath is one such NGO which has implemented a range of early child development, school-based and community-based youth mental health promotion programmes with a focus on building capacity in existing health system resources (http://www.sangath.com). Its programme to address learning disabilities is described in Box 3.

Two NGO examples of building services using available community resources in conflict affected populations come from northern Sri Lanka and Cambodia. In both situations specialist resources were made available to serve as advocates and key resource persons. In northern Sri Lanka resources were drawn from a voluntary group of counsellors who worked with statutory services to provide

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Box 3 Paying Attention to Learning!

Goa is one of India's smallest states with a population of 1.3 million. Child development professionals in Sangath, a community-based NGO, observed that a third of all children being referred to its child guidance clinic were for reasons related to learning difficulties. The majority also had behavioural disturbances as a consequence of these difficulties. Sangath established a learning centre for these children that provided assessment and remedial services, under its Paying Attention to Learning project. A total of 246 children received services at the centre over a three-year period, comprising 167 (67.9%) boys. About half the children came from a non-English-speaking family (121, 49.2%). They exhibited a poor exposure to learning and knowledge and/or poor socioeconomic backgrounds. A detailed assessment of 91 children showed that school failure was reported in just over half (52.7%). Over 90% of these children had difficulties in spelling, reading and mathematics as well as poor concentration and had behaviour problems. Thus, undetected learning disabilities were a major factor in CAMH problems and school dropout, and remediation was needed to address these disabilities and their consequent behavioural problems. Remedial work, mainly in phonological awareness, language development and reading, led to some improvement in these children. After a period of running a remediation service in the child guidance clinic, the programme chose to relocate this service in schools to improve adherence and sustainability. Currently, the programme runs Learning Resource rooms in four mainstream schools with teachers trained in addressing learning difficulties and caters to around 100 children in these schools. These children have showed a dramatic improvement not only in their knowledge and achievement levels (for example, in end of year exam grades) but also in their self-esteem and classroom behaviour, for example in taking an initiative to answer in the class, interest in writing the exam paper, participation in assigned tasks and interaction with the teachers. The programme is now being scaled up and its sustainability being secured through networking with the local government, who have included learning disability in their Special Needs scheme and expressed a commitment to fund resource room teachers for these 4 schools beyond the project period, and to emulate this in as many schools as possible; and granted permission for accommodation during examinations for children attending the resource rooms. Sangath's learning programme has been supported by the Sir Dorabji Tata Trust. (http://www.sangath.com)

mental health services in a population with a high degree of trauma (Somasundaram, 2004). In Cambodia, Caritas, an international NGO, focused specifically on child mental health services and built up a service in one district, led by a specialist trained in the UK who then trained a network of other workers and carried out activities for raising awareness.

The health system. Despite the burden of CAMD that was described above, CAM health services are severely underdeveloped in LAMIC. There are large variations between World Health Organization regions in terms of whether countries have a mental health policy or plan (World Health Organization, 2005a, 2005b). While 78% of countries in the high-income category have a CAMH policy, not a single country in the low-income category has one. With a stark absence of specialist manpower in the LAMIC, it makes sense to follow the recommendations that mental health services should be developed in the community and that mental health interventions should be integrated into general health services (World Health Organization, 2001). While there has been partial success with the implementation of these recommendations for adults, there has been hardly any movement in this regard for CAMH services. Integration will require the training, and continuing supervision and support, of GPs and paediatricians in the detection and treatment of CAMD. Apart from improving the management of CAMD, these strategies are also likely to impact on CAMH promotion (Funk et al., 2005). Earlier, we highlighted the important contribution of poor physical health on CAMH; improvement of general health and incorporation of mental health into general health is likely to be a single most significant health sector strategy for the LAMIC.

Building specialist capacity. The role of the CAMH specialist has to make sense within the existing service structure. Developing a service structure that mimics those used in more resource-rich situations is not feasible in LAMIC (nor, do we think, is this service structure necessary or ideal); developing widely based community and primary health-care-based capacity is the only feasible, acceptable and affordable approach (Saxena & Maulik, 2003; Somasundaram & van de Put, 2006). In this context, specialist professionals, who are both expensive and in extreme short supply, have diverse roles, notably: advocacy, research and consultation with other professionals within a stepped care service structure and, most important of all, building capacity in different sectors. The diverse nature of the specialist role can lead to tensions for an individual clinician between what may be personally preferred and what appear to be the demands of the job (Nikapota, 1991). It is important that the role be defined within individual service structures, and needs for the role accommodated in higher specialist training and in job descriptions. Too often this is not done, with the result that the very important roles in advocacy, training, and consultation occur as a matter of personal interest rather than as an integral part of the role. Where such a diverse role is accepted, it is also necessary for service planners to ensure that performance of the role is facilitated. For example, many clinicians in LAMIC are expected to supplement income through private practice. It is practically difficult for the specialist clinician to then devote significant amounts of time for research and training when income supplementation is based on individual specialist clinical expertise.

It is rarely possible to assume that the specialist will be drawn from one or another discipline. In the UK, for example, there are consultant-level specialist CAMH staff from psychiatry, psychology, psychotherapy, social work and nursing. Training of paediatricians to become part of CAMHS specialist staff is under discussion at the respective Royal Colleges. Paediatrics, rather that psychiatry or psychology, may be the preferred medical specialty in LAMIC for training in CAMH if only because these specialists may be more numerous, more widely distributed in LAMIC, and more acceptable to families for consulting regarding CAMH problems. Such capacity building has been promoted as the logical next step for service development in Brazil (Celia, 1998). Many LAMIC are now developing formal training programmes in clinical child psychiatry or child mental health. In South Africa, for example, the University of Cape Town offers a two-year full-time training programme for qualified psychiatrists to enable them to qualify as sub-specialists in child and adolescent psychiatry. They complete a Certificate in Child Psychiatry of the Colleges of Medicine of South Africa and an MPhil degree in Child and Adolescent Psychiatry at the University of Cape Town. Thailand, Chile and Brazil have implemented formal training in child psychiatry for psychiatrists, paediatricians and psychologists. In India, postgraduate courses in child psychiatry in tertiary medical institutes are under active consideration. But, it is equally fair to say that the vast majority of LAMIC have no programmes for specialist CAMH training. Although some HIC have developed courses for building CAMH specialist capacity in LAMIC (Box 4), this option is still expensive and needs to be tailored to the socio-cultural realities of the respective countries. Distance learning programmes in respective countries may be a more feasible option in the future.

An important function of child and adolescent specialists is to conduct research. Much of the research on child development and psychopathology has a dominant Western perspective. Although there is now epidemiological data from a number of LAMIC, more is required regarding psychopathological processes, differing patterns of symptom presentation and perceptions of disorder, and the role of cultural factors in vulnerability, risk, and resilience.

Box 4 The Diploma in Child and Adolescent Psychiatry and Masters in Child and Adolescent Mental Health of the Institute of Psychiatry, London

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This course was developed specifically for clinicians from LAMIC and was established in 1987 at the Institute of Psychiatry, UK. The course accepts psychiatrists, psychologists or paediatricians. The multidisciplinary nature of the course relates to the course aims, which are to increase knowledge and skills across relevant professional groups. Whereas components of the course include generic teaching on child development and child psychiatry, there is an overarching focus on cultural diversity, service planning and teaching skills. Whereas initially the primary focus was on clinical skills, the recently developed Masters course also highlights research methodology (for further information, visit http://www.iop.kcl.ac.uk and follow links to courses). Since its inception, a total of 54 LAMIC professionals have been trained (16 from East Asia; 15 from South Asia; 9 from the Middle East; 3 from Africa; 2 from the Caribbean; and 9 from Latin America). All but one have returned to LAMIC and are taking lead roles in service development for mental health and in research.

Another major research agenda is investigating cost-effective interventions. Capacity building for research will necessitate collaborations between centres of excellence, particularly those which focus on public health, in both developed and developing countries. Major new programmes to strengthen public health education in LAMIC – such as the Public Health Foundation of India (Reddy, 2006) – will provide opportunities to build research capacity for mental health.

Building non-specialist capacity. Non-specialist health workers form the backbone of any service for people with mental disorders. Integrating child mental health tasks in primary health care should begin at the antenatal level; the validity of this approach has been accepted even in developed countries with relatively stronger CAMH services. The case for LAMIC is even more compelling (Minde & Nikapota, 1993). Integrating some mental health tasks in primary care has been attempted in a number of countries – for example in Chile, India, Thailand, Sri Lanka – but with varying degrees of success and little formal evaluation of the activities and outcomes (Patel et al., 2007a); there is virtually no evidence at all specifically for CAMH outcomes. A key principle of task oriented training is that they are integrated with other mother- and child-related activities. It is critical to select interventions which are relevant and appropriate for the context. For example, where community or country situations are primarily focusing on reducing child mortality as a priority, mental health tasks may be those which coincide with interventions aimed to reduce child mortality; for example, to reduce developmental delay due to severe malnutrition or reduce lead poisoning or prevent thyroid deficiency in infancy, promote immunisation and appropriate family planning. It has been argued that these may be the main aims for CAMH in LAMIC (Hackett et al., 1999). When the tasks include identification and management of vulnerable, high-risk or disadvantaged groups, consideration has to be given to how this identification is best done, what interventions may be feasibly and effectively carried out within a primary care level and what support structures are available for this work. There is currently a methodology available for use in primary care (Ani & Garralda, 2005) but these methodologies will require adaptation according to the educational and knowledge level of local primary care resources. A national programme for building primary care capacity in Sri Lanka is described in Box 5.

Box 5 Building capacity on CAMH in Sri Lanka

An appreciation of child mental health needs led to advocacy, awareness raising and national policy development for child mental health in Sri Lanka which, in turn, led to a series of targeted inputs at the primary health care level. The initial impetus arose from the profile of clinic attendees at a newly opened child psychiatric clinic in the capital, Colombo. It was clear that many of the problems could have been dealt with at a primary/child level. The aim of the inputs was to increase knowledge and skills regarding child mental health within primary health care with a view to facilitating promotion of child mental health. Inputs included: parent education on development, early childhood stimulation, and monitoring of developmental achievement. Advocacy among policy-makers focused on child care priorities such as nutrition and education, emphasising the importance of child mental health initiatives in meeting these targets (De Silva et al., 1988; Nikapota, 1990). The training curriculum for health workers was based on the WHO-SEARO Training Packages on child mental health for primary care workers – health workers, teachers, child care workers, physicians (World Health Organization, 1982). The content was reviewed regularly with examples from the field added as appropriate. In addition, observational data from five sites in the country on parenting and routine care of children provided information on practices which were promotive for development and these examples were incorporated into the training content. Child mental health is now regarded as an integral part of child health by primary care staff. Awareness among parents about developmental milestones and the importance of early childhood stimulation has increased. Based upon a stepped care approach, training inputs were developed for community health care physicians, paediatricians and psychiatrists. Subsequently, training was adapted in response to mental health needs following civil conflict in the country. A problem-solving approach was used as the basis for the content of training for identifying interventions (Samerasighe & Nikapota, 1992). The recent tsunami has led to a further emphasis on mental health needs and policy directions as advocated by the World Health Organization (van Ommeren, Saxena, & Saraceno, 2005).

Removing societal barriers to mental health

Advocacy and awareness raising in the community. The primary objective of awareness raising is to advocate the concept of optimal mental health and psychosocial development. Equally important is relating mental health to wider development priorities and goals as we have discussed earlier in this paper. Awareness raising can also extend to factors contributing to increased or decreased risk for CAMH problems. Gender issues, for example, need to be raised here in relation to the nurturing of girls within families and mothers. The vulnerability of women and children is particularly great in post-conflict or disaster contexts (Somasundaram & van de Put, 2006). Maternal mental health is a major determinant of poor CAMH; advocating for the reduction of risk factors associated with maternal depression, such as gender-based violence, may constitute powerful strategies for prevention of mental health problems across generations. Violence reduction programmes are being implemented in many developing countries. Such programmes work at several levels, including sensitisation of health workers so that they are confident and comfortable when asking about abuse, integration of education about violence into existing health programmes and communication strategies (such as TV soap operas), legal reforms to ensure the rights of abused women, raising the cost to abusers by imposing a range of legal penalties, provision for the needs of victims and reaching out to male perpetrators (Heise, Ellsberg, & Gottemoeller, 1999). Some approaches which focus on strengthening intimate relationships, one of the commonest contexts for violence, include parenting training, mentoring and marriage counselling. Some of these, such as the Stepping Stones programme, have been shown in qualitative evaluations in African and Asian settings to have helped men communicate and given them new respect for women (World Health Organization, 2002).

A number of different methodologies have been used for awareness raising at the level of populations. The mass media has been used to target large sections of a population, assuming groups are literate or have access to TV and radio. Such mass media interventions are most likely to be successful if children and adolescents have a central role in their design and implementation; they are based on rigorous theories about the relationships between messaging and mental health outcomes; they follow multi-media approaches in which several different media deliver consistent and mutually reinforcing messages; and they are combined with personal communication (Selikow, Flisher, Mathews, & Ketye, 2006). Posters and flip charts were developed to support a primary health-care-based child mental health programme in Sri Lanka emphasising the importance of parent–child interaction and responsive stimulation for early child development (De Silva, Nikapota, & Vidayasagara, 1988; Nikapota, 1990). This included ensuring that that there was congruence between messages illustrating physical health with mental health needs. For example, illustrations of good feeding practice had to include the mother looking at and talking to a child while feeding. A recent innovative way of raising awareness in Chile used children's drawings to heighten awareness of abuse (Frenz & Videla, 2005). Increasing knowledge and awareness of relevant issues must be given in ways that are appropriate to context, and link to common beliefs and attitudes about children and adolescents and their behaviour in the target audience. For example, from the experience of one author (AN), advocacy among senior health administrators first required clarification that CAMH issues were very different to issues relating to mental illnesses in adults such as schizophrenia (De Silva et al., 1988). Songs, soap operas, and plays are popular methods for building community awareness and promotional messages to raise awareness can be included in primary health care or school-based activities. An example of a soap-opera is *Tsha Tsha*, an educational television programme in South Africa, complemented by radio programmes, that aims to encourage self-efficacy among young people while at the same time challenging structures that undermine agency (Selikow et al., 2006). As Kelly et al. (2005) state (pp. 10–11):

> *Tsha Tsha* focuses on the development of self efficacy amongst the drama's characters. People who possess self efficacy are effective in the world; they respond to challenges, and can deal effectively with a situation, because they have some level of self control over it. Self efficacy develops out of the ability to develop confidence through solving difficult problems. … People with low self efficacy become victims of their circumstances: they tend to blame their problems on the world at large, avoid challenges, and have low aspirations. … While they [the youth] live in a world defined by others, they are especially powerful creators of their own worlds.

Children and adolescents can themselves be agents of change in building community awareness about mental health. An intervention to promote mental health literacy was implemented and evaluated at two schools in Pakistan in a controlled trial (Rahman, Mubbashar, Gater, & Goldberg, 1998). The goal was to increase knowledge of risks to mental health, and how to cope with such risks in a positive manner. It was found that the intervention succeeded in increasing mental health literacy, both in the students and their families and neighbours. Such school-based interventions may also have the potential to promote mental health among the students who received the intervention and the communities in which their schools are situated.

Reducing structural barriers to mental health. In the section on risk and protective factors, we drew

attention to factors which serve as risk factors for mental ill-health in children and adolescents, such as gender inequalities, lack of educational opportunities, conflict and displacement, and poverty. Clearly, removing these structural barriers must be part of a comprehensive approach to mental health promotion. However, many of the interventions that address these factors are not based in the mental health (or health) sectors. Indeed, the expertise of mental health professionals is generally not directly relevant for such interventions. However, mental health professionals can contribute to these interventions in three main ways. First, they can conduct research that aims to uncover the mechanisms for the relationships between these risk factors and mental ill-health. This knowledge can inform the development of interventions. For example, there are many postulated mechanisms for the relationship between poverty and mental ill-health, for example that poverty reduces access to health care and educational opportunities, and is associated with exposure to high levels of stress in daily life (Flisher et al., 2007). By elucidating the mechanisms, one may point the way to interventions that are most likely to sever the link between poverty and mental ill-health. Second, child and adolescent mental health professionals can advocate among policy makers and planners around the links between the structural barriers and mental ill-health. This may contribute to increased attention to addressing the barriers. Third, they can contribute to the evaluation of interventions that aim to promote mental health through addressing the barriers. Even though such evaluations are extremely rare, even in high income countries, there are grounds for believing that these interventions may have the desired effect. For example, the introduction of a casino in a reservation of native Americans resulted in a subset of the population experiencing a rapid increase in personal wealth. Among the children in such families, this increase was associated with a marked reduction in the prevalence of behavioural disorders (Costello, Compton, Keeler, & Angold, 2003). Similar studies are urgently required in LAMIC to investigate the effect of poverty relief interventions on the mental health of children and adolescents. Studies of the cost of untreated CAMD and cost benefit analyses of interventions would be crucial for making the case for greater resource allocation to CAMH in LAMIC.

Conclusions

There are very few evaluated CAMH promotion or prevention interventions in LAMIC. Indeed, there are very few evaluated CAMH interventions of any kind (including clinical interventions) in LAMIC, where the bulk of the very scarce CAMH resources are allocated entirely to the provision of direct clinical services. We believe that highest priority in such a scenario must be given to increased resources to develop, implement and evaluate CAMH promotive and preventive interventions. The simplest approach may be to modify existing interventions that have been developed and evaluated in HIC, as occurred with the CHAMP initiative described earlier (Bhana et al., 2004) and the HEALTHWISE interventions (Caldwell et al., 2004).

In the absence of LAMIC evidence, there is no reason to think that preventive and promotive interventions which have been shown to be effective in high income countries would not also be effective in LAMIC. While we accept that some interventions are context specific – economic interventions, for example, may have differential effectiveness depending on the socioeconomic situation in which they are implemented – many of the interventions mentioned above unarguably have positive effects, which are not confined to the mental health, or health, sector. The challenge is to aim for a mix of programmes so that the advantages of both preventive and promotive approaches can be harnessed. Capacity needs to be built across the education and health systems, with a particular focus on low-cost, universally available resources and on empowerment of families and children. There are likely to be a number of barriers to scaling up effective interventions for mental disorders (Saraceno et al., in press) which requires renewed attention to politics, leadership, planning, advocacy, and participation.

Despite the higher prevalence of a number of risk factors for CAMD in LAMIC, a number of epidemiological studies show a lower prevalence of CAMD in these countries. Clearly, there are powerful protective factors which operate in such societies – the role of the extended family and religious faith, for example – and a key research imperative is to describe these before the tides of globalisation wash them away (Patel & Goodman, 2007c). Finally, we must acknowledge that the interventions most likely to promote CAMH are those that are set up with no specific mental health goal, such as interventions aimed at empowering women. There is much in life that we accept as being good for communities, from the way our political systems are organised (democracy is better than autocracy) to social development programmes (education is better than illiteracy; peace is preferable to war; women and men are equal) or the way health care is organised (universal health coverage is better than care based on how much a person can pay). None of these macro 'interventions' or policies is based on 'evidence' as defined by health researchers and policy-makers. They are all based on principles of human values which, to some extent, are more universal than specific definitions of mental health or mental illness. We believe that the best action for promotion of CAMH in LAMIC will result from our acknowledgement that human development and CAMH are inextricably linked. The strategies most likely to

promote mental health are likely to be those found within existing human development initiatives that combat the core social and economic inequities which are ultimately the basis of much human suffering in our world. Thus, a major source of children's suffering in LAMIC today are the consequences of economic policies which fuel unplanned urbanisation, breakdown of social networks and rising inequality; in a close second place, conflict and terror stalk the lives of the young. In a brave new world, advocates of CAMH promotion in LAMIC will need to ultimately build capacity amongst those who influence the course of these socio-political juggernauts in addition to focusing on picking up the pieces of broken minds and bodies they leave in their wake.

Acknowledgements

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