

## Chapter 10

# Population and Community Platform Interventions

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## INTRODUCTION

Populationwide and community-level platforms are important for the delivery of mental, neurological, and substance use (MNS) interventions along the continuum of care. Certain interventions that promote mental health, prevent MNS disorders, and protect people are most appropriately delivered on a populationwide basis. Legislation, regulations, and public information campaigns are the common delivery channels of this platform.

Other interventions are best delivered by targeting a particular community setting or group in the community that shares a certain purpose. Community delivery channels include schools, workplaces, and neighborhoods and community groups.

Populationwide and community-level interventions often require coordinated efforts among different sectors, such as health, education, social development, labor, and criminal justice systems.

A third platform for delivering interventions—the health care system—is the subject of chapter 11 in this volume (Shidhaye, Lund, and Chisholm 2015).

## KEY FINDINGS

Populationwide and community-level platforms are important for promotion and prevention interventions; identification and case detection; and, to a lesser degree, treatment, care, and rehabilitation. The evidence

presented in this chapter for each platform and delivery channel is structured around the core elements of the continuum of care (table 10.1).

Prevention interventions strive to prevent the onset, duration, and recurrence of MNS disorders; promotion interventions foster the positive mental health and well-being of the general population. Fairly good evidence is available from high-income countries (HICs) for interventions across these platforms and along the continuum of care, but the evidence base from low- and middle-income countries (LMICs) is far less robust. The chapter includes evidence from HICs and LMICs; identified best practice and good practice strategies are based on the best available evidence from both.

## POPULATION-LEVEL PLATFORM

Populationwide interventions are rarely evaluated using the gold standard of randomized control trials (RCTs). More commonly used evaluation methods and approaches are quasi-experimental natural experiments, with before-and-after data obtained from archival analysis of official statistics or surveys, and comparisons with populations that have not been exposed to the intervention, where possible. Best-practice interventions were identified on the basis of existing quasi-experimental evidence from LMICs and evidence of cost-effectiveness (at least from HICs). Good-practice interventions were identified on the basis of emerging evidence in LMICs and assumptions that laws and regulations that are in

**Table 10.1** Matrix of Best-Practice and Good-Practice Interventions

Delivery platform	Promotion and primary prevention	Identification and case detection	Treatment, care, and rehabilitation
<i>Population</i>			
<ul style="list-style-type: none"> <li>Legislation and regulation</li> </ul>	<ul style="list-style-type: none"> <li>Laws and regulations to reduce demand for alcohol use: taxes</li> <li>Laws and regulations to reduce demand for alcohol use; enforcement of BAC limits, advertising bans, and minimum ages</li> <li>Laws and regulations to restrict access to means of self-harm and suicide</li> <li>Child protection laws</li> <li>Laws and regulations promoting healthy lifestyles, for example, tobacco control</li> <li>Laws and regulations to promote improved control of neurocysticercosis</li> </ul>		<ul style="list-style-type: none"> <li>Mental health laws and regulations that are in line with the best practice and human rights standards</li> </ul>
<ul style="list-style-type: none"> <li>Information and awareness</li> </ul>	<ul style="list-style-type: none"> <li>Mass public awareness campaigns</li> </ul>		
<i>Community</i>			
<ul style="list-style-type: none"> <li>Workplace</li> </ul>	<ul style="list-style-type: none"> <li>Integrating mental health promotion strategies, such as stress reduction and awareness of alcohol and drug misuse, into occupational health and safety policies</li> </ul>		
<ul style="list-style-type: none"> <li>Schools</li> </ul>	<ul style="list-style-type: none"> <li>Universal and targeted SEL programs for vulnerable children</li> <li>Awareness programs</li> </ul>	<ul style="list-style-type: none"> <li>Identification and case detection in schools of children with MNS disorders</li> </ul>	
<ul style="list-style-type: none"> <li>Neighborhood and community groups</li> </ul>	<ul style="list-style-type: none"> <li>Parenting programs during infancy</li> <li>Early childhood enrichment and preschool educational programs</li> <li>Parenting programs for children ages 2–14 years</li> </ul>	<ul style="list-style-type: none"> <li>Training of gatekeepers, including community health workers, police, and social workers, in identification of MNS disorders, including self-harm</li> </ul>	

*Note:* Interventions in red indicate best practice; Interventions in black indicate good practice. BAC = blood alcohol concentration; MNS = mental, neurological, and substance use; SEL = social and emotional learning.

line with human rights standards would be protective. Additional interventions were identified on the assumption that addressing the known determinants of MNS disorders should promote mental health and lead to a reduction in MNS disorders, but these interventions were not recommended as good practice, given the lack of evidence of their effectiveness. The thorough review in this volume of the available evidence of the most effective and cost-effective interventions for the respective disorders was used as the evidence base, supplemented by a desk review of the best evidence where necessary (see online annex table 10A.) For further information on the cost-effectiveness of the mental health interventions referenced in this chapter, see chapter 12 in this volume (Levin and Chisholm 2015).

### Legislation and Regulations for Promotion and Primary Prevention

#### Reducing Harmful Alcohol Use

The prevention of harmful alcohol use in adults provides benefits across diseases. It can help prevent the development of alcohol use disorder and unipolar depression, as well as other chronic diseases, such as cardiovascular disease, diabetes, and cirrhosis of the liver, and it can reduce the risk of contracting human immunodeficiency virus (HIV). It can also help with the prevention of accidental and intentional injuries or death (Rehm and others 2006).

Evidence from HICs and LMICs indicates that the most cost-effective strategy for reducing alcohol consumption is increased taxation or pricing of alcohol products, followed by bans on alcohol advertising,

restrictions on access to alcohol, and enforcement of drinking-and-driving legislation (see chapter 7 in this volume, Medina-Mora and others 2015; and chapter 12 in this volume, Levin and Chisholm 2015). However, raising taxes is less effective in countries with lower levels of alcohol consumption; other targeted interventions, such as enforcing drunk driving legislation and brief screening and intervention, are more effective. Regulations may also be less effective in countries where alcohol can be easily acquired through the unregulated or black market or home brews (Rehm and others 2006). The cost of scaling up these interventions has been estimated for LMICs; implementation of a package of population-based demand reduction measures amounts to no more than US\$0.25 per person (WHO 2011a).

### Restricting Access to Means of Suicide

Suicide is one of the leading causes of premature deaths worldwide. Globally, the ingestion of pesticides, hanging, and use of firearms are among the most common methods (WHO 2014). Regulations restricting access to common, regional-specific, lethal means of suicide—such as firearm control legislation, restrictions on pesticides, and detoxification of domestic gas—have been shown to decrease rates of suicide in HICs and LMICs (van der Feltz-Cornelis and others 2011). Means restrictions require an understanding of the common methods used in different sectors of societies and countries, as well as the cooperation of different sectors (WHO 2014). The impact of the introduction of pesticide regulations on the reduction of suicides in Sri Lanka provides a case study of how this strategy has been effectively applied in LMICs (box 10.1). Cost-effectiveness modelling of such a pesticide ban in the Indian context has been undertaken for this volume (Nigam and others 2015).

### Other Multisector Legislative and Regulatory Interventions

Other legislative and regulatory interventions to promote mental health and prevent the development of

MNS disorders in children and adults in LMICs are included here based on evidence of the determinants, as well as emerging but promising evidence of the effectiveness, of the recommended interventions in LMICs.

Prenatal development and infancy is a particularly vulnerable period for the development of a wide range of MNS disorders. Possible interventions are suggested, based on evidence of the determinants of healthy development and MNS disorders during this stage. The assumption is that addressing these determinants would lead to a reduction in MNS disorders (Petersen and others 2014). However, the following interventions are not recommended as good practice, given the lack of evidence of effectiveness in LMICs:

- Regulations to improve obstetric and perinatal care to prevent birth trauma, given its association with physical and mental disabilities, notably epilepsy (see chapter 5 in this volume, Thakur and others 2015)
- Regulations to strengthen prenatal and postnatal immunization programs to prevent infectious diseases, such as HIV, as well as rubella and toxoplasmosis, which can impact cognitive development
- Regulations to increase access to micronutrients for vulnerable populations, including salt iodization programs to prevent iodine deficiency, which is associated with mental retardation during early infancy
- Regulations to promote folic acid food fortification and selective protein supplementation programs to promote healthy cognitive development.

During childhood, maltreatment is a risk factor for the development of MNS disorders. Some promising evidence from LMICs indicates that the enactment of child protection laws for children living outside the family has health and safety benefits for these children (Fluke and others 2012), although further research to assess the benefits for children within their families of origin is indicated. Such laws are, nevertheless, considered as good practice. Emerging evidence indicates

#### Box 10.1

### Pesticide Regulations as an Intervention to Reduce Suicide: Sri Lanka

Self-poisoning with pesticide is the most common method of suicide in Sri Lanka, accounting for two-thirds of suicide deaths. The suicide rate in Sri Lanka reached a peak in 1995 at 47 deaths per 100,000 population. With the banning of all World Health

Organization toxicity Class 1 pesticides in 1995 and the banning of endosulfan, a Class II toxicity pesticide, in 1998, the suicide rate halved from 1996 to 2005, with a reduction of 19,769 suicides, compared with 1986–95 (Gunnel and others 2007).

the protective influence of conditional cash transfers against poor cognitive and behavioral outcomes in vulnerable children (Fernald and Gunnar 2009; Lund and others 2011). Further research is, however, required before recommendations can be made.

Other multisector laws and regulations to promote mental health and prevent MNS disorders in children and adults include the following:

- *Restricting access to illicit drugs through laws and regulations preventing their sale, possession, and use.* However, the evidence on the effectiveness of such interventions in LMICs remains insufficient for them to be recommended as good practice (see chapter 6 in this volume, Degenhardt and others 2015).
- *Legislation to reduce traumatic brain injury and the consequent risk of epilepsy, such as through mandatory use of helmets by motorcyclists.* Evidence as to the effectiveness of this strategy for reducing epilepsy in LMICs is still required before it can be recommended as good practice (see chapter 5 in this volume, Thakur and others 2015).
- *Regulations to improve control of neurocysticercosis* (a common cause of epilepsy in LMICs) through deworming of humans, vaccination of pigs, improved sanitation, better meat inspection, and improved pig farming. Promising evidence is emerging from Honduras that these interventions can reduce epilepsy in hyperendemic populations (Medina and others 2011), and they are recommended as good practice.
- *Legislation against domestic violence as possible intervention,* given that risk factors for common mental disorders in women include interpersonal violence (Patel and others 2010). Some limited evidence from HICs suggests that such legislation reduces the chances of family or intimate partner violence (Dugan 2003). However, evidence from LMICs is required before it can be recommended as good practice.
- *Regulations promoting healthy lifestyles, given that risk for dementia in later life includes cardiovascular conditions.* These interventions are recommended as good practice (see chapter 5 in this volume, Thakur and others 2015).

### **Protecting Persons with MNS Disorders**

The utility of national or state regulations and legislation and their effects on mental health promotion, prevention, treatment, care, and rehabilitation are more fully covered by policy guidelines than by evidence-based literature. The World Health Organization (WHO) and others have produced detailed guidance

on the formulation of national strategies, national laws, human rights provisions, primary care integration and treatment guideline formulation, information systems, and suicide prevention (Hess and others 2004; Pinfold and others 2003; Swartz and others 2010; Thornicroft 2000; Watson and others 2004; WHO 2008, 2011b, 2012, 2013a); these issues are closely related to the growing field of implementation science (Tansella and Thornicroft 2009).

The WHO QualityRights Project has a toolkit to help countries assess and implement strategies to meet key standards in inpatient and outpatient mental health and social care facilities. These strategies are in alignment with the International Convention on the Rights of Persons with Disabilities (WHO 2012).

The objectives of the WHO QualityRights Project are as follows:

- Improving the quality of care and human rights conditions in mental health and social care facilities
- Changing attitudes and building capacity in service users, families, and health workers to understand and promote human rights and recovery
- Promoting the involvement of people with mental disabilities in advocacy work
- Reforming national policies and legislation to be in alignment with best-practice and international human rights standards.

Even without an evidence base to support such an initiative, it is reasonable to assume that up-to-date mental health laws and regulations that are in line with human rights standards, as outlined by the WHO QualityRights Project, should be readily accepted as good practice.

### **Information and Awareness Campaigns for Promotion and Primary Prevention**

Information and public awareness campaigns employ broad strategies and messages to promote mental health literacy—defined as knowledge and beliefs about mental disorders to aid their recognition, management, and prevention (Jorm 2012)—as well as reduce stigma and discrimination. The campaigns disseminate information, for example, about signs and symptoms, locations where people may receive help, facts and figures about prevalence and risk factors, and evidence to combat stigmatizing beliefs. Multifaceted techniques to supplement traditional media outlets via lobbying of important stakeholder groups, facilitating grassroots activism, and mobilizing the public at popular events seem to be the most effective for encouraging prosocial behaviors,

such as stigma reduction and help-seeking (Thornicroft and others, 2015).

Most information and awareness programs represent low-intensity interventions aimed at large numbers of people, often through print media, recordings, radio, television, cinema, mobile phones, and the Internet (Andreasen 2006; Clement and others 2013). Several examples of large-scale national efforts, and a growing evidence base, demonstrate their effectiveness in increasing knowledge about and recognition of MNS disorders (Jorm, Christensen, and Griffiths 2005), improving attitudes (Dunion and Gordom 2005; Evans-Lacko, Malcolm, and others 2013), and reducing discrimination in a cost-effective manner (Corker and others 2013; Evans-Lacko, Henderson, and others 2013; Henderson and others 2012; McCrone and others 2010; Thornicroft and others 2010; Thornicroft and others 2014). Although information and awareness programs often cover a broad range of MNS disorders, most focus on mental rather than neurological disorders. One RCT from Hong Kong SAR, China, however, showed that exposing individuals to information about dementia through vignettes led to a statistically significant reduction in stigma (Cheng and others 2011).

Several recent systematic reviews of the literature have examined the effectiveness of various types and components of anti-stigma interventions, including awareness programs aimed at the general public in HICs. A systematic review that focused on mass media strategies showed that such interventions may reduce prejudice, although fewer studies have investigated the effects of media strategies on discrimination (Clement and others 2013). A recent review by Corrigan and others (2012) examined anti-stigma approaches specific to mental illness and incorporated elements of education, protest, or contact. In-person contact interventions yielded the greatest effect in adults; education was most effective among adolescents. One challenge is to deliver these types of interventions on a mass scale to the public. Some evidence, using a pre-post research design, demonstrates the feasibility and effectiveness of achieving positive intergroup contact through large public events (Evans-Lacko and others 2012). Moreover, evidence supports the effectiveness of virtual contact via film or video; these types of interventions could be more cost-effective (Clement and others 2012), a finding that could be especially relevant for low-resource settings. For example, mobile phones and other technologies in LMICs might be explored as ways to increase access to information and awareness.

Evidence of the effectiveness of mass information programs in LMICs is limited. In 1996, the World Psychiatric Association initiated several national and

regional efforts through the Open the Doors program (<http://www.openthedoors.com/english/index.html>) to reduce stigma, specifically in relation to people with schizophrenia (Warner 2005); however, evaluation of the program in LMICs is lacking. General lessons emphasize involving patients and caregivers in the development and evaluation of anti-stigma work, establishing a local network of committed institutions and individuals, and addressing stigma within health care through incorporating anti-stigma efforts into MNS services (Sartorius 2010; Stuart 2008).

The experiences and consequences of stigma vary across countries and cultures. Development and evaluation of anti-stigma interventions that are tailored and locally developed in LMICs are needed (Thornicroft and others 2015; Yang and others 2007).

Online interventions may represent a low-cost method of reaching individuals in LMICs. Many websites provide information on MNS disorders, but few studies have performed evaluations. One intervention in LMICs looked at whether an anti-stigma computer program would improve knowledge and attitudes and reduce social distance among university students in the Russian Federation (Finkelstein, Lapshin, and Wasserman 2008). Students were randomized to one of three groups: a computer program group, a reading group, or a control group. Participants were evaluated at baseline, immediately following the intervention, and six months later. Immediately following the intervention, knowledge, attitudes, and social distance improved among students in the reading and computer program groups. At the six-month follow-up, the reading group showed some improvement in attitudes; all stigma outcomes were significant in the computer program group.

Based on sufficient evidence from HICs and emerging promising evidence from LMICs, mass public awareness campaigns and, to a lesser extent, more targeted programs are recommended as good practice. For stigma reduction, in particular, more research, generating evidence of the effectiveness of social contact among the adult population and education-focused interventions among adolescents is recommended for HICs and LMICs. In LMICs in particular, more information is needed about how best to tailor existing interventions to local cultures, using available resources, and how best to reach key stakeholders—both targets and instigators of stigma—in these settings.

## COMMUNITY-LEVEL PLATFORMS

Studies on interventions at the community-level platform in LMICs are limited; best-practice interventions were identified from the chapters on MNS disorders in



this volume (chapter 6 in this volume, Degenhardt and others 2015; chapter 8 in this volume, Scott and others 2015) and supplemented by a desk review of available systematic reviews and trials in LMICs. Many of these interventions have a prevention and promotion focus, and the Assessing Cost-Effectiveness (ACE) prevention framework (Carter and others 2000) was used to evaluate effectiveness. The ACE grading system provides a single framework for the evaluation of evidence on clinical, public health, and behavioral interventions.

- *Sufficient evidence.* There is evidence of effectiveness as demonstrated by at least one systematic review of RCTs, as well as several good-quality RCTs or several high-quality pseudo-RCTs using alternate allocation or another method, or non-RCTs with comparative groups to exclude chance.
- *Limited evidence.* The effect is probably not due to chance, but bias cannot be ruled out as a possible explanation for the effect. We have classified this evidence as *promising*.
- *Inconclusive evidence.* There is no evidence of systematic reviews or RCTs, although there may be a few poor-quality pseudo-randomized non-RCTs with comparative groups or cohort studies.

**Best-practice interventions** were identified on the basis of two criteria:

- Evidence of their effectiveness based on sufficient evidence from LMICs, using the ACE framework, as well as their cost-effectiveness in HICs.
- Evidence of their feasibility in relation to cultural acceptability and capacity for scale-up in resource-constrained settings in LMICs.

**Good-practice interventions** were identified on the basis of sufficient evidence of their effectiveness in HICs and/or promising evidence of their effectiveness in LMICs, using the ACE framework.

## Workplaces

### Promotion and Primary Prevention

Workplace settings provide an ideal delivery channel for promotion and prevention interventions for adults. Evidence from HICs indicates that individual- and organization-level interventions improve and maintain mental health in the workplace. These interventions include screening and cognitive behavioral therapy (CBT) for pre-clinical symptoms of depression and anxiety to prevent the onset of these disorders (Nytro and others 2000; WHO 2000). However, the evidence base from LMICs is sparse.

Limited but promising evidence from LMICs of the effectiveness of primary prevention and promotion is provided by the SOLVE training package, developed by the International Labour Organization (Probst, Gold, and Caborn 2008). This training of trainers program provides human resource managers, trade unions, employers, and health professionals with the necessary knowledge and skills for integrating mental health promotion strategies, such as stress reduction and awareness of alcohol and drug misuse, into occupational health and safety policies and workplace action programs. The SOLVE program has been implemented in several countries, including China, India, Kenya, Malaysia, Namibia, the Philippines, South Africa, Sri Lanka, Swaziland, and Zambia. Preliminary evaluation of the original SOLVE program, with 268 participants in seven countries, using a pre-post test design, produced encouraging findings concerning knowledge gains following training (Probst, Gold, and Caborn 2008). However, more rigorous studies are needed to determine the long-term effectiveness and sustainability of this program across diverse workplace settings in LMICs. In view of the limited but promising evidence of the feasibility and impact of this program, such integrated mental health strategies in the workplace are considered as good practice.

### Identification and Case Detection

Evidence on the identification and case detection of MNS disorders in the workplace could only be sourced from HICs. An evaluation of the APPRAND program in France provided evidence on individuals on sick leave who were screened by company health physicians and identified as having anxiety and depressive disorders and who received an awareness-raising and referral intervention. Those individuals displayed higher remission and recovery rates, compared with individuals in other centers who were not screened and who did not receive the intervention (Godard and others 2006). Positive effects have also been reported for a mental health first aid course in Australia that included training in screening for mental disorders (Kitchener and Jorm 2004).

For neurological disorders, positive outcomes have been reported in the United States for migraine and headache management programs that have included screening questionnaires and educational initiatives. These interventions resulted in an increase in the number of participants seeking help from physicians, an improvement in headache symptoms, a reduction in absenteeism among those affected, and a reduction in the cost burden to employers (Page and others 2009; Schneider and others 1999). No evidence for screening for MNS disorders in the workplace could be sourced from LMICs, and these interventions are not yet recommended.

### **Treatment, Care, and Rehabilitation**

Interventions for the treatment, care, and rehabilitation of MNS disorders in the workplace have been effective in HICs. For people with common mental disorders, individual therapies rather than organizational interventions have been the most effective, in particular, CBT (BOHRF 2005; Hill and others 2007; Seymour 2010), either face to face or more questionably via computer software (Grime 2004; van der Klink and others 2001). To a lesser extent, exercise and relaxation interventions, such as aerobic or meditation sessions, have been beneficial (Graveling and others 2008). Independent case management by third-party specialists, such as labor experts or employment advisors, has shown a positive impact on people with common mental disorders when combined with psychological therapies, such as CBT (Seymour 2010). Multimodal interventions may be more effective than single interventions (BOHRF 2005). With respect to severe mental disorders (SMDs), sufficient evidence from HICs indicates the benefits of supported employment, for example, individual placement and support, in helping people obtain competitive employment (Crowther and others 2001; Dickson and Gough 2008; McDaid 2008).

For neurological disorders, a few studies have shown positive effects, although with mixed results, for educational and physical programs implemented in workplace settings in Finland and Italy to reduce headaches and neck and shoulder pain (Mongini and others 2012; Rota and others 2011; Sjögren and others 2005). Furthermore, an RCT in South Africa found that a workplace intervention consisting of workability assessments and workplace visits was able to facilitate return to work for stroke patients (Ntsiea 2013).

Overall, evidence from LMICs for the treatment, care, and rehabilitation of MNS disorders in the workplace is insufficient for recommendations to be made. Further research is recommended on the effectiveness of training in first-level management of acute symptoms, particularly CBT, for anxiety or depression (possibly combined with independent case management); supported employment for people with SMDs; and educational, physical, and return-to-work interventions for neurological disorders.

### **Schools**

#### **Promotion and Primary Prevention**

**Information and Awareness.** Examples of robust evaluations of broad information and awareness interventions addressing MNS literacy are more available in HICs (Pinfold and others 2003; Swartz and others 2010; Watson and others 2004). In LMICs, only one

study that was performed in rural secondary schools in Pakistan could be sourced. The intervention, led by health care professionals, involved a short training course for teachers, with a co-constructed educational program of lectures and several participatory activities. The study used an RCT evaluation and assessed changes in knowledge and attitudes four months after the start of the program. Improvements were noted among schoolchildren, parents, friends, and neighbors. In the control group, there were improvements only among schoolchildren and their friends (Rahman and others 1998).

For neurological disorders, only studies in HICs could be sourced. Hip Hop Stroke is an example of an information and awareness program for children (ages 8 to 12 years) from schools in a high-risk stroke neighborhood in the United States. Following the program, the children showed improved knowledge of stroke symptoms and behavioral intent to call 911 (Williams and others 2012). Given that promising evidence is emerging on the positive impact of information and awareness interventions in schools in LMICs, these programs are recommended as good practice. Further research on the impact of such interventions in schools is needed.

**Social and Emotional Learning Interventions.** Studies from HICs and LMICs indicate that life skills programs to build socioemotional competencies in children and adolescents (social and emotional learning [SEL] programs) can improve social and emotional functioning and academic performance in exposed children. The programs also reduce risk behavior, when combined with reproductive and sexual health and substance use education. Systematic reviews from HICs show that universal SEL interventions in primary and post-primary schools promote children's social and emotional functioning and academic performance in the long term (Durlak and others 2011; Lister-Sharp and others 1999; NICE 2009; Tennant and others 2007; Weare and Nind 2011; Wells, Barlow, and Stewart-Brown 2003).

In relation to substance abuse in particular, school-based interventions that target social skills more broadly in younger children have been found to have a greater positive effect than in high school-age children (see chapter 6 in this volume, Degenhardt and others 2015). Evidence from HICs also indicates that interventions that employ a whole-school approach are most effective and have helped to reduce bullying. In the whole-school approach, SEL is supported by a school ethos and a physical and social environment that is health-enabling and involves staff, students, parents, the school environment, and the local community. Bullying has been identified as a risk factor for the development of psychiatric disorders

in bullies and their victims (see chapter 8 in this volume, Scott and others 2015).

A systematic review (Barry and others 2013) and other studies (De Villiers and van den Berg 2012; Mueller and others 2011; Smith and others 2008; Srikala and Kishore 2010) provide sufficient evidence of the beneficial effects of universal SEL programs in LMICs. These interventions can be feasibly delivered by teachers and school counselors through the integration of SEL into life orientation curricula, as demonstrated by the HealthWise program in South Africa (Smith and others 2008) (box 10.2). However, the quality of implementation and contextual issues can affect the impact of SEL interventions; teacher training, support, and supervision are needed, as is attention to the school environment (Caldwell and others 2012), suggesting that integration into a whole-school approach is preferred.

For high-risk children, targeted and indicated interventions that promote coping skills, resilience, and cognitive skills training have helped prevent the onset of anxiety, depression, and suicide in HICs (Clarke and others 1995; Jaycox and others 1994; Shucksmith and others 2007). Several RCTs of targeted interventions for vulnerable children have been conducted in LMICs (Fazel and others 2014). Some classroom-based interventions (CBIs) for vulnerable children, especially those orphaned by HIV or living in areas of conflict, have improved general psychological health and coping (Ager and others 2011; Jordans and others 2010; Khamis, Macy, and Coigne 2004; Qouta and others 2012). However, these effects are contingent on individual variables, such

as age and gender, as well as contextual variables, such as conflict, displacement, and family functioning (Tol and others 2014), and may be better suited for children with less severe risks and difficulties (Fazel and others 2014). Box 10.3 describes a case study of the impact of a classroom, community, and camp-based intervention for children in economies at war and with complex emergencies. The intervention was taken to scale in the West Bank and Gaza (Khamis, Macy, and Coigne 2004).

Economic analyses from HICs indicate that SEL interventions in schools are cost-effective, resulting in savings from better health outcomes, as well as reduced expenditures in the criminal justice system (McCabe 2007).

The cost of implementing school-based SEL interventions in LMICs has not yet been estimated. An attempt is made in chapter 12 in this volume (Levin and Chisholm 2015) on the basis of a psychosocial intervention to prevent depression in adolescents ages 12 to 16 years in Mauritius (Rivet-Duval, Heriot, and Hunt 2011). The findings suggest that school-based SEL interventions represent a low-cost strategy to promote adolescent mental health. Universal and targeted school-based SEL interventions are considered as best-practice interventions for LMICs.

### Identification and Case Detection

Many MNS disorders have their onset during childhood and adolescence, and these early difficulties are likely to be present in the school context. Teachers have a critical role in identifying emerging problems and taking

#### Box 10.2

### The HealthWise Program in South Africa

HealthWise combines leisure, life skills, and sexuality education into a 12-lesson program for students in grade eight, with six booster sessions in grade nine delivered by teachers during life orientation, with the aim of reducing health risk behaviors. The lessons cover socio-emotional skills building, such as decision making, self-awareness, and anxiety and anger management, as well as the positive use of free time and attitudes, knowledge, and skills building to reduce substance use and sexual risk behaviors.

An efficacy trial involving 2,383 participants from a low-income community in Cape Town

demonstrated that HealthWise had a moderately positive effect on alcohol use. It was also effective in increasing awareness of condom availability and perceived condom self-efficacy. The program is being expanded to 56 schools in the Cape Town area to assess the effects of fidelity issues, namely, enhanced teacher training; enhanced teacher support, structure, and supervision; and enhanced school environment on outcomes.

*Source:* Caldwell and others 2012.



### Box 10.3

#### Classroom, Community, and Camp–Based Intervention in the West Bank and Gaza

Classroom, community, and camp–based intervention provides structured expressive-behavioral group activities over 15 sessions to reduce traumatic stress reactions and strengthen children’s resiliency to cope with the stress of ongoing violence and trauma. The program was delivered by trained school counselors and other social workers to more than 100,000 children in the West Bank and Gaza. A randomized control trial involving 664 children ages 6–16 years found that the program improved psychological functioning and coping in young boys

and girls (ages 6–11 years), as well as in adolescent girls (ages 12–16 years), enabling them to function as other children would in relation to family, school, and peers. However, this effect was not the case with adolescent boys (ages 12–16 years), who demonstrated an increased tendency to use avoidance of cognitions and feelings as a defense mechanism, which may relate to their greater exposure to violence.

*Source:* Khamis, Macy, and Coignez 2004.

### Box 10.4

#### Teacher Training Program, Brazil

An exploratory study in São Paulo, Brazil, tested the effectiveness of an educational strategy to build teachers’ capacity to identify students with possible mental health problems and subsequently make appropriate referrals. Teacher training involved two two-hour sessions that included a lecture followed by theoretical and practical exercises. Teachers were evaluated on their ability to identify and refer students with mental health problems in a hypothetical vignette scenario. When assessing responses specifically among teachers who did

not initially respond correctly to the vignettes, researchers found at least 50 percent had learned to identify and make referrals of problematic cases following the training, and 60 percent learned to identify normal adolescent behaviors. The study suggests that brief training can increase teachers’ capacity to identify mental health problems and make appropriate referrals, especially among those who initially struggled to do so.

*Source:* Vieira and others 2014.

appropriate action. RCTs from HICs provide evidence for training in indicated screening of developmental and behavioral disorders in schools. Programs such as Mental Health First Aid for High School Teachers have been tested using a cluster RCT (Jorm and others 2010).

Data from LMICs are limited. However, evidence supports the feasibility and reliability of identifying and assessing MNS disorders in primary and secondary school students (Becker and others 2010a, 2010b; Opoliner and others 2013; Vieira and others 2014) (box 10.4). In Haiti, a 2.5 day training program for secondary school teachers focused on recognizing, responding to, and referring students at risk for MNS disorders following the earthquake in 2010.

The intervention was associated with improvements in knowledge, attitudes, and recognition of MNS disorders (Eustache, Becker, and Wozo 2014). In Chandigarh city, India, a one-off educational intervention package improved teachers’ knowledge, attitudes, and skills regarding epilepsy immediately after the intervention, and at the three-month follow-up. However, it was noted that further workshops would likely be required for long-term benefit (Goel and others 2014).

Given sufficient evidence from HICs, as well as emerging promising evidence from LMICs, the identification and case detection in schools of children with MNS disorders are recommended as good practice. Further research adapting and developing, validating,

and piloting screening tools that are culturally sensitive, user friendly, and easy to administer in LMICs is proposed.

### **Treatment, Care, and Rehabilitation**

There is sufficient evidence of the effective treatment and management of some MNS disorders in schools in HICs. A meta-analysis that examined the effectiveness of various types of school-based CBT for young people with anxiety and depression showed significant reductions in symptoms overall (Mychailyszyn and others 2012). School-based interventions for attention-deficit hyperactivity disorder (ADHD) have been found to be promising in younger children but less so for adolescents; these interventions lack robust long-term program effectiveness data, as well as cost-effectiveness data (Kutcher and Wei 2012). Effective ADHD interventions that improve academic and behavioral outcomes involve contingency management, academic intervention, and cognitive-behavioral interventions (DuPaul, Eckert, and Vilaro 2012). For neurological disorders, a classroom-based headache prevention program in Germany found a small but significant reduction in reported tension-type headaches seven months following the intervention (Albers and others 2015).

Evidence from HICs also indicates that children with emotional and behavioral disorders benefit from classroom environments that are predictable and consistent, with clear structures and rules; such settings are associated with improved classroom and peer behavior and enhanced learning (Simpson, Peterson, and Smith 2011). A classroom strategy focused on punishment is likely to increase aggression and other behavioral problems (Kennedy and Jolivet 2008). Some research indicates the benefits of academic supports; however, there are significant limitations in the current evidence base, as many of these studies used single-subject designs and lacked measures of fidelity, that is, whether the intervention was implemented as intended; most did not include minorities (Mooney and others 2003). Interventions that use direct instruction, peer tutoring, and behaviorally based procedures—such as time delay prompting, trial and error, and differential reinforcement—hold promise (Rivera, Al-Otaiba, and Koorland 2006).

Evidence from LMICs for treatment, care, and rehabilitation for children with MNS disorders is limited and equivocal. An RCT of a universal school-based intervention for reducing depressive symptoms was conducted in Chile. It used CBT techniques delivered by non-specialists and comprised 11 one-hour weekly sessions and two booster classroom sessions. Although it was a universal intervention, the study analyzed subgroups of

young people with high depression scores. The analysis showed no clinically significant difference between the intervention and control groups and no evidence of effect modification by severity of symptoms (Araya and others 2013).

A few CBI trials have incorporated cognitive behavioral techniques and creative expressive elements to help children with depressive, anxiety, and post-traumatic stress disorder (PTSD) symptoms in complex emergencies in LMICs (Jordans and others 2010; Tol and others 2008; Tol and others 2012; Tol and others 2014). The emerging evidence on the effectiveness of treatment of PTSD and depressive symptoms is inconsistent; CBI has more consistent prevention benefits, particularly when the risks are less severe. Accordingly, CBI cannot be recommended for treatment of these conditions in conflict-affected children (Fazel and others 2014). Given the equivocal evidence from LMICs, further research generating positive outcomes for treatment, care, and rehabilitation for children with MNS disorders in schools is required before recommendations can be made.

## **Neighborhood and Community Groups**

### **Primary Prevention and Promotion**

An array of primary prevention and promotion interventions is delivered at the neighborhood level or through community groups. These interventions include programs on early childhood enrichment and preschool educational programs, community-based parenting, and gender and economic empowerment interventions.

**Early Childhood Enrichment and Preschool Educational Programs.** Robust evidence from HICs demonstrates the effectiveness and cost-effectiveness of early childhood enrichment and preschool educational programs on social and emotional well-being, cognitive skills, problem behaviors, and school readiness (Anderson and others 2003; Nelson, Westhues, and MacLeod 2003; Tennant and others 2007). There is also evidence of long-term effects on school attainment, social gains, and occupational status in HICs (Schweinart and others 2005).

The evidence from LMICs is promising (Aboud 2006; Cueto and others 2009; Kagitcibasi, Sunar, and Bekman 2001; Kagitcibasi and others 2009). Evidence of the long-term benefits of early childhood enrichment and preschool educational programs is provided by the Turkish early childhood enrichment project. Long-term follow-up of a cohort of 131 participants found that children who received a home-based educational intervention, preschool education, or both, achieved higher educational attainment and occupational status

and obtained employment earlier than those participants who received neither (Kagiticibasi and others 2009). These interventions are therefore considered to represent good practice.

**Parenting Interventions.** There is sufficient evidence from LMICs of the effectiveness and feasibility of parenting programs to enhance mother-child interaction during infancy for these interventions to be considered good practice (Cooper and others 2009; Jin and others 2007; Mejia, Calam, and Sanders 2012; Rahman and others 2009; Walker and Chang 2013; Wendland-Carro, Piccinini, and Millar 1999). Many interventions are delivered at health centers or utilize a home visitation program and may overlap with interventions delivered at the first-level facilities described in chapter 11 in this volume (Shidhaye, Lund, and Chisholm 2015).

The effectiveness of community parenting programs for the prevention of internalizing and externalizing disorders in children who are preschool and school age has been demonstrated in HICs (e.g., Kaminski and others 2008), with promising evidence from LMICs (Fayyad and others 2010; Oveisi and others 2010; Vasquez and others 2010; Wendland-Carro, Piccinini, and Millar 1999); these are also considered as good practice.

**Gender Equity and Economic Empowerment Interventions.** A growing body of research indicates the feasibility and benefits for vulnerable adolescents and adults of gender equity and economic empowerment programs in LMICs (Balaji and others 2011; Brady and others 2007; Jewkes and others 2008; Kermode and others 2007; Kim and others 2009; Pronyk and others 2006; Ssewamala, Han, and Neilands 2009). For poor people in Sub-Saharan Africa, microfinance (micro-credit and microsavings) schemes that incorporate gender empowerment, health, and educational training components are more effective in terms of mental health benefits over standalone programs (Lund and others 2011; Stewart and others 2010). Further evidence is, however, required before these programs can be recommended as good practice.

#### **Identification and Case Detection**

Mental health first aid training at the community level involves training community members to identify when a person is developing a mental disorder, is suicidal, or is in crisis; to know how to manage the situation; and to know where to refer the person appropriately (Jorm 2012).

Evidence for feasible and effective identification training programs for non-mental health workers is particularly robust for police officers and community health workers in HICs and LMICs (Chibanda and others 2011;

Hansson and Markstrom 2014; Krameddine and others 2013; Teller and others 2006; Watson and others 2008). Given that community health workers may operate from health centers or utilize a home visitation program, these interventions may overlap with interventions delivered at the first-level facility platform described in chapter 11 in this volume (Shidhaye, Lund, and Chisholm 2015).

With respect to neurological disorders, research from HICs suggests that trained community health workers can facilitate early detection of dementia in resource-poor communities (Han and others 2013). Moreover, if screening leads to early intervention within a year of detection, it could be associated with cost savings through reduced health care costs in the long run (Saito and others 2014). Mental health first aid training of community members generally has been found to increase knowledge, reduce stigma, and increase help-seeking behavior in HICs. Although mental health first aid training is being rolled out in several LMICs, evidence of effectiveness is still lacking (Jorm and others 2004). Given sufficient evidence from HICs, as well as emerging promising evidence from LMICs, for training non-mental health workers and community members in identification and case detection, it is recommended as good practice. Further research on the impact of such interventions on increasing access to mental health care in LMICs is required.

#### **Treatment, Care, and Rehabilitation**

Policy shifts to deinstitutionalize and decentralize care in many LMICs are heightening the need for community-based treatment and rehabilitation for mental disorders. These interventions are generally delivered through health care platforms and are described in detail in chapter 11 in this volume (Shidhaye, Lund, and Chisholm 2015).

## **CONCLUSIONS**

This chapter has reviewed the evidence on population- and community-level interventions that improve mental health in LMICs.

#### **Population-Level Interventions**

Interventions at the population platform have a broad reach, promoting and protecting the mental health of the entire population through legislation, regulations, and public campaigns. Legislation and regulations to control alcohol demand can reduce consumption in LMICs at minimal cost; and taxation on alcohol products is recommended as best practice.

Laws and regulations restricting access to lethal means of suicide that are region specific can reduce suicide rates in LMICs and are also recommended as best practice. Mental health laws aligned with international standards for human rights protection are recommended as good practice on the assumption that they are likely to help to curb violations in mental health and social care facilities. Child protection laws and improved control of neurocysticercosis are recommended as good practice, given the emerging evidence of their health and safety benefits in LMICs.

Legislative changes are relatively low cost, but they can be difficult to implement, with adaptation and implementation requiring the buy-in and cooperation of multiple sectors. With respect to alcohol legislation in particular, unregulated markets, easy access to home brews, and access to the black market in LMICs may limit the success of this strategy. LMICs are also likely to encounter opposition from local and international alcohol producers, with the latter increasingly targeting emerging markets. Strong political will and advocacy work, within and outside governments, are necessary to garner public and political support for legislation to reduce the demand for alcohol. National and international nongovernmental organizations and the media can play an important role. International cooperation and regulation-related legislation to help prevent illicit trade and cross-border advertising, promotion of alcohol consumption, and sponsorship have been suggested as important, particularly for emerging markets struggling to enter the global economy (Casswell and Thamarangsi 2009).

Suicide prevention through restricting access to the means of suicide may encounter challenges in regulating access to certain means of suicide, such as by hanging or self-immolation, and this may also limit the success of this strategy.

For mass information and awareness campaigns for promoting mental health literacy and reducing stigma as a public health strategy at the population level, some small-scale but promising evidence from LMICs indicates the potential effectiveness of mass public awareness campaigns; they are recommended as good practice.

### Community-Level Interventions

Interventions at the community platform have less broad reach but more depth and intensity. This chapter reviewed the evidence for interventions delivered in the workplace, at schools, and in neighborhoods and community groups. In the workplace, integrating mental health promotion strategies, such as stress reduction and awareness of alcohol and drug misuse, into occupational health and safety policies is recommended as good practice, based on emerging evidence in LMICs.

Stronger evidence exists in LMICs for schools as a delivery channel for interventions across primary prevention and promotion and identification. There is robust evidence of life skills training in schools to promote social and emotional competencies. This is recommended as best practice. There is promising evidence for the identification of mental disorders in schools, which is recommended as good practice.

Emerging promising evidence supports the delivery of neighborhood and community group interventions in LMICs. In primary prevention and promotion programs, parenting programs, particularly during infancy, are recommended as good practice. Evidence is emerging on the long-term benefits of early childhood enrichment and preschool educational programs, and these are recommended as good practice. Emerging evidence also suggests the mental health benefits of gender and economic empowerment programs, but is still insufficient to recommend as good practice. For identification and treatment, care, and rehabilitation, the training of gatekeepers to identify people with mental illness is recommended as good practice, based on emerging promising evidence in LMICs.

Many MNS disorders have their onset during childhood and adolescence (Kessler and others 2005; WHO 2013b); early difficulties are likely to present at the community platform in schools and neighborhoods. Interventions along the continuum of care described in this chapter are particularly important to prevent the onset and reduce the severity of the course of MNS disorders. However, community-level interventions require strong intersectoral engagement, as well as buy-in to task-sharing. Teachers, social workers, police, community health workers, and community members can provide first-line mental health care with sufficient training and support. To enable collaborative arrangements with different departments, as well as community-based groups, including nongovernmental organizations, spiritual leaders, and traditional healers, Skeen and others (2010) suggest the formalization of these arrangements through legislation of intersectoral forums for mental health from the national to the local levels. Such forums can facilitate awareness of mental health as a public health priority in other sectors, illuminate the role these other sectors can play, and clarify the roles and responsibilities and referral pathways between sectors (Skeen and others 2010).

Although much attention has historically been paid to platforms within the health sector for the delivery of mental health services, it is increasingly clear that greater consideration of population- and community-level platforms is necessary for the delivery of prevention and promotion interventions, as well as for the early identification of mental disorders, particularly in children and adolescents.

## ANNEX 10A

The annex to this chapter is as follows. It is available at [www.dcp-3.org/mentalhealth](http://www.dcp-3.org/mentalhealth).

- Annex 10A. Evidence of Interventions at the Population- and Community-Level Platforms

## NOTES

Disclaimer: Dan Chisholm is a staff member of the World Health Organization. The author alone is responsible for the views expressed in this publication, and they do not necessarily represent the decisions, policy, or views of the World Health Organization.

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World Bank Income Classifications as of July 2014 are as follows, based on estimates of gross national income (GNI) per capita for 2013:

- Low-income countries (LICs) = US\$1,045 or less
- Middle-income countries (MICs) are subdivided:
  - a) lower-middle-income = US\$1,046 to US\$4,125
  - b) upper-middle-income (UMICs) = US\$4,126 to US\$12,745
- High-income countries (HICs) = US\$12,746 or more.

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