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Foreword iii

Editorial
Care for mental disorders and promotion of mental well-being in South-East Asia
Nazneen Anwar, Thaksaphon Thamarangsi 1

Perspective
Mental health policies in South-East Asia and the public health role of screening instruments for depression
Pratap Sharan, Rajesh Sagar, Saurabh Kumar 5

Depression and physical noncommunicable diseases: the need for an integrated approach
Nazneen Anwar, Pooja Patnai Kuppili, Yatan Pal Singh Balhara 12

Decentralizing provision of mental health care in Sri Lanka
Neil Fermanto, Thirupathy Suveendran, Chithramalle de Silva 18

Post-disaster mental health and psychosocial support: experience from the 2015 Nepal earthquake
Surendra Sherchan, Reuben Samuel, Kedar Marahatta, Nazneen Anwar, Mark Humphrey, Vani Ommerson, Rodenico Ofrin 22

Challenges and opportunities in suicide prevention in South-East Asia
Lakshana Vijayakumaran 30

Services for depression and suicide in Thailand
Tharonin Kongko, Sudha Supanya, Kedaramop Kengbubpha, Supanee Phhitana, Supadha Sukhawathan, Jintana Leongjamponpee 34

Policy and governance to address depression and suicide in Bhutan: the national suicide-prevention strategy
Gampa Dorji, Sonam Choki, Kings Jampel, Venkt Wangdi, Tandil Choegyal, Chimi Norji, Dambar Kumar Nirula 39

Suicide burden and prevention in Nepal: the need for a national strategy
Kedar Marahatta, Reuben Samuel, Pawan Sharma, Lovin Dixit, Bhola Ram Shrestha 45

Review
Co-occurring depression and alcohol use disorders in South-East Asia: a narrative review
Yatan Pal Singh Balhara, Prashant Gupta, Deepak Vaidya 50

Suicide and depression in the World Health Organization South-East Asia Region: a systematic review
Haile Tadlin Ahmed, Mohammad Dilwar Hossain, Afast Albas, Tanjir Rashid Soron, Mohammad Tanjup Alam, Md Wazizul Alam Chowdhury, Afast Uddinn 60

Original research
Alcohol consumption among adults in Bangladesh: results from STEPS 2010

Prenatal care practices in home deliveries in rural Bangalore, India: a community-based, cross-sectional survey
N Ramakrishna Reddy, CT Seeramareddy 75

Motivating and demotivating factors for community health workers: a qualitative study in urban slums of Delhi, India
Mathew Sunil George, Shrada Parithi, Niveditha Datta Menon, Suparna Ghosh-Jerath, Sanjay P Jodhpur 82

Policy and practice
Adoption of the 2015 World Health Organization guidelines on antiretroviral therapy: programmatic implications for India
Bharat Bhushan Rewari, Reshu Agarwal, Sureesh Shastri, Sharath Burungina Nagajana, Abhilasha Singh Rathore 90

Delivery of antiretroviral treatment services in India: estimated costs incurred under the National AIDS Control Programme
Reshu Agarwal, Bharat Bhushan Rewari, Sureesh Shastri, Sharath Burungina Nagajana, Abhilasha Singh Rathore 94

Depression and suicide: towards new paradigms in prevention and care
The WHO South-East Asia Journal of Public Health

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The journal is published in April and September each year.

A series of invited, peer-reviewed Perspectives is published in each issue. In addition, the journal publishes Original research articles, Reviews, and Policy and practice papers that have potential to promote public health in the World Health Organization South-East Asia Region. We invite papers on communicable and noncommunicable diseases, epidemiology, health administration, health economics, health promotion, health systems, maternal and child health, occupational and environmental health, primary health care, public health, public health nutrition and social and preventive medicine.

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## Contents

**WHO South-East Asia Journal of Public Health**

April | Volume 6 | Issue 1

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### Foreword

**iii**

### Editorial

Care for mental disorders and promotion of mental well-being in South-East Asia  
*Nazneen Anwar, Thaksaphon Thamarangsi*  
1

### Perspective

Mental health policies in South-East Asia and the public health role of screening instruments for depression  
*Pratap Sharan, Rajesh Sagar, Saurabh Kumar*  
5

Depression and physical noncommunicable diseases: the need for an integrated approach  
*Nazneen Anwar, Pooja Patnaik Kuppili, Yatan Pal Singh Balhara*  
12

Decentralizing provision of mental health care in Sri Lanka  
*Neil Fernando, Thirupathy Suveendran, Chithramalee de Silva*  
18

Post-disaster mental health and psychosocial support: experience from the 2015 Nepal earthquake  
*Surendra Sherchan, Reuben Samuel, Kedar Marahatta, Nazneen Anwar, Mark Humphrey Van Ommeren, Roderico Ofrin*  
22

Challenges and opportunities in suicide prevention in South-East Asia  
*Lakshmi Vijayakumar*  
30

Services for depression and suicide in Thailand  
*Thorain Kongsuk, Suttha Supanya, Kedsaraporn Kenbubpha, Supranee Phimtra, Supattra Sukhawaha, Jintana Leeljongpermpoon*  
34

Policy and governance to address depression and suicide in Bhutan: the national suicide-prevention strategy  
*Gampo Dorji, Sonam Choki, Kinga Jamphel, Yeshi Wangdi, Tandin Choheyel, Chencho Dorji, Damber Kumar Nirola*  
39

Suicide burden and prevention in Nepal: the need for a national strategy  
*Kedar Marahatta, Reuben Samuel, Pawan Sharma, Lonim Dixit, Bhola Ram Shrestha*  
45

### Review

Co-occurring depression and alcohol-use disorders in South-East Asia: a narrative review  
*Yatan Pal Singh Balhara, Prashant Gupta, Deeksha Elwadhi*  
50

Suicide and depression in the World Health Organization South-East Asia Region: a systematic review  
*Helal Uddin Ahmed, Mohammad Didar Hossain, Afzal Aftab, Tanjir Rashid Soron, Mohammad Tariqul Alam, Md Waziul Alam Chowdhury, Aftab Uddin*  
60

### Original research

Alcohol consumption among adults in Bangladesh: results from STEPS 2010  
*Jessica Yasmine Islam, M Mostafa Zaman, Mahfuz R Bhuiyan, Md Mahtabuddin Hasan, HAM Nazmul Ahsan, Md Mujibur Rahman, Md Ridwanur Rahman, MA Jali Chowdhury*  
67

Perinatal care practices in home deliveries in rural Bangalore, India: a community-based, cross-sectional survey  
*N Ramakrishna Reddy, CT Sreeramareddy*  
75
Original research
Motivating and demotivating factors for community health workers: a qualitative study in urban slums of Delhi, India
Mathew Sunil George, Shradha Pant, Niveditha Devasenapathy, Suparna Ghosh-Jerath, Sanjay P Zodpey

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On 7 April every year, the anniversary of the founding of the World Health Organization (WHO) is marked by highlighting a health topic of global concern. Globally, more than 300 million people suffer from depression; for the WHO South-East Asia Region, the figure is 86 million. World Health Day 2017 focuses on depression, a disorder that can affect all people and is a risk factor for suicide. In response to the World Health Day campaign slogan “Let’s talk”, experts from across the region were invited to inform and expand the dialogue on depression and suicide through papers in this issue of the *WHO South-East Asia Journal of Public Health*.

Approaches to prevention and care of depression have undergone a paradigm shift in recent years. A cornerstone of this strategy has been expanding delivery of care from psychiatric facilities to the community level, in parallel with increasing the capacity of primary health-care systems to provide integrated care. This issue illustrates how new paradigms of care and prevention for depression and suicide are being adopted across the region.

An article from Sri Lanka describes progress over more than a decade in implementing a comprehensive community-based decentralized mental health system. The tsunami of 2004 catalysed commitment to this reconfiguration of services. Provision of mental health care at the primary health-care level in tsunami-affected areas was subsequently extended to districts outside the tsunami zone.

A report from Nepal describes the mental health response to the 2015 earthquake; the critical role of emergency community-based care; and the value of integration of mental health into primary health care. The authors emphasize that it is essential that the momentum for positive change resulting from such tragedies is sustained.

Integrating mental health services at the primary health-care level is crucial to narrowing the treatment gap for mental disorders. This is illustrated in a paper from Thailand on work done in establishing a comprehensive service for depression. This system, by using community-level screening and assessment together with diagnosis and treatment by general practitioners, has increased accessibility to standard care from 5.1% of those with depressive disorders in 2009 to 48.5% in 2016. Central to the approach was the development of culturally appropriate screening and assessment tools in local dialects.

The theme of locally appropriate identification tools to facilitate case detection, symptom monitoring and triage is explored in a paper from India. This article notes that existing tools developed in, and therefore culturally appropriate to, high-income countries, may have limited relevance in communities in South-East Asia. The paper describes ongoing work to develop a depression identification instrument in Bangla, Hindi and Nepali for use in primary care.

The prevalence of depression in patients with physical noncommunicable diseases such as cancer, diabetes mellitus, stroke or cardiovascular disease is 2–4-fold higher than in the general population. A paper in this issue reviews the policy pathways to tackle this dual burden via collaborative care at the primary health-care level. Integration reaps rewards not only in care but also in prevention, since lifestyle modifications, such as regular physical activity and avoidance of alcohol, can provide effective measures for primary prevention of noncommunicable diseases and depression, separately and in combination.

Depression and alcohol-use disorders frequently coexist and the presence of one augments the adverse consequences of the other. A review of the literature in this issue highlights the need for research to assess interventions for patients with this dual diagnosis in the WHO South-East Asia Region, since most evidence to date comes from high-income settings. Focusing on harmful use of alcohol is also critical, given its significant role in suicide.

The high prevalence of suicide in the WHO South-East Asia Region is a serious public health problem requiring urgent action. Women are a particularly vulnerable population, for a variety of social and cultural reasons, and pesticide ingestion is a common method of suicide. Suicides can be prevented by use of timely, evidence-based and often low-cost interventions, such as reducing easy access to pesticides. A paper from Nepal highlights the need for a specific, long-term national suicide-prevention strategy. An article from Bhutan reviews the national policy and governance approaches taken in formulating that country’s recently launched national suicide-prevention strategy, and highlights lessons learnt.

I hope that the rich range of content in this issue of the journal will promote the role of mental health in achieving health for all, by providing information and inspiration to continue to embrace new paradigms in prevention and care for mental disorders.

Dr Poonam Khetrapal Singh
World Health Organization
Regional Director for South-East Asia
Editorial

Care for mental disorders and promotion of mental well-being in South-East Asia

A paradigm shift for mental health

Mental, neurological and substance-use disorders are common worldwide, affecting every community and age group, and across countries of all income levels. While 14% of the global burden of disease is attributed to these disorders, almost 75% of individuals affected in many low-income countries do not have access to treatment and care. The World Health Organization (WHO) South-East Asia Region, home to just over one quarter of the world’s population, has a disproportionately large share of the global disease burden for mental disorders.

Recent mental health activities in the WHO South-East Asia Region have been strategized by the WHO Mental health action plan 2013–2020. This action plan reflects a paradigm shift in the fundamental guiding principles for prevention, management and care for people with mental disorders and recognizes the essential role of mental well-being in achieving health for all people.

The action plan is based on a life-course approach; promotes equity through universal health coverage; and underscores that mental disorders frequently lead individuals and families into poverty. It has close conceptual and strategic links to other global initiatives, including the Global strategy to reduce the harmful use of alcohol, and Workers’ health: global plan of action.

The action plan also emphasizes the need for legislation, plans, strategies and programmes to protect, promote and respect the human rights of persons with mental disorders, in line with the International Covenant on Civil and Political Rights, the International Covenant on Economic, Social and Cultural Rights, the Convention on the Rights of Persons with Disabilities, the Convention on the Rights of the Child and other relevant international and regional human rights instruments.

Primary health care for mental disorders: the new horizon

In the WHO South-East Asia Region, mental illnesses have been mainly managed by a small cadre of highly skilled mental health professionals, mostly confined to a limited number of urban tertiary-care mental hospitals. The reach of this health-care delivery system has been extremely limited, as evidenced by the large treatment gap faced by patients with mental and neurological disorders. The treatment gap, defined as the proportion of patients in need who are not receiving appropriate medical care, is between 76% and 85% for mental and neurological disorders in low- and middle-income countries worldwide; the corresponding range for high-income countries is 35–50%.

Taking into account the primary health-care infrastructure that extends to almost every corner of all countries in the region, the WHO Regional Office for South-East Asia has been developing and implementing strategies to deliver care for mental and neurological disorders in the community, by empowering the existing primary health-care delivery system. The strategy is to use trained health-care workers at the community level to identify people with the most common and most disabling disorders, and then to refer these patients to primary health-care-based physicians for treatment. This mode of delivery increases access to care, taking health care to the doorsteps of the people, while also helping to reduce stigma and discrimination.

“Mental health is a state of well-being in which an individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community”

World Health Organization, 2004

In view of scarce resources, no country in the region can provide all services for all mental health needs in all settings. Thus, prioritization and pilot projects have been critical for long-term development and success. Prioritization criteria include the magnitude of the problem, the technical feasibility of diagnosis and treatment, and potential outcomes. Surveys have indicated that Member States of the region selected epilepsy, psychosis, depression and suicide prevention when starting these initiatives. Community-based programmes were subsequently developed, based on the “five As”: availability, acceptability, accessibility, affordable medicines and assessment (see Box 1).

Pilot studies of this approach conducted in Bangladesh, Bhutan, Myanmar and Timor-Leste clearly demonstrated that strengthening the primary health-care delivery system through training of health workers and providing essential psychotropic medicines had a significant impact in reducing the treatment gap. These programmes are inherently sustainable, since they are mainstreamed into the existing national government public health-care delivery system; the only additional investment is the cost of training and ensuring a supply of psychotropic medicines. All Member States in the region can benefit from this work, whether by introducing similar strategies or by scaling up existing successful projects.

Priorities and progress: regional activities in mental health

As guided by Member States, highlighted areas of the WHO South-East Asia Regional Office mental health programmes

WHO South-East Asia Journal of Public Health | April 2017 | 6(1)
for 2016 and 2017 include depression, epilepsy, psychosis, autism spectrum disorders, dementia care, and post-disaster mental health and psychosocial support. The emphasis has been on capacity-building to enable countries to develop and implement policies in line with the objectives of the Mental health action plan 2013–2020.2

There have been several major achievements, at both regional and national levels. These include the Regional strategy on autism spectrum disorders;7 amendment of the Bangladesh Mental Health Act, with development and costing of a national mental health strategy; and updating of the National mental health strategy and action plan of Timor-Leste.9 Technical activities have included Development of guidelines on home-based interventions for management of intellectual disability;10 a regional workshop for strengthening capacity and preparedness for post-disaster mental health and psychosocial support; and, in India, educational resources on mental health for social workers.

These activities have been integral to the 2016–2017 programme focus on addressing the mental health elements of the Sustainable Development Goals (SDGs). Key areas are the suicide mortality rate (SDG indicator 3.4.2),15 and harmful use of alcohol (SDG indicator 3.5.2).11 A regional suicide-prevention strategy has been developed,12 and work has started on the development of national strategies and action plans. Country strategies, systems and interventions for disorders caused by use of alcohol have been expanded and strengthened. This work has been informed by research, including a review of the morbidity and mortality in the region related to drink–driving,13 and an assessment of the burden and socioeconomic cost associated with alcohol use.14 In addition, the regional office has been involved in a project to increase community capacity to address alcohol issues in Sri Lanka.15 Finally, the United Nations General Assembly Special Session on the World Drug Problem in April 2016 mandated WHO to undertake specific activities related to abuse of narcotic drugs and psychotropic substances.16 Thus, needs-specific country strategies and programmes are being developed for the region.

Challenges in mental health governance: commitment, resources and management

Despite these activities, major challenges persist. Revisiting mental health legislation, where needed, will help tackle the widespread prejudice, stigma and lack of awareness that hinder progress. Crucially, the centrality of dignity to all aspects of mental health must be emphasized. Dignity for those with mental health disorders will be achieved when communities, families and individuals have the confidence to seek help for mental health problems without fear and inhibition. Together, we need to ensure that mental health strategies, actions and interventions for treatment, prevention and promotion are compliant with the Convention on the Rights of Persons with Disabilities18 and other international and regional human rights instruments.

Mental health disorders are chronic conditions associated with high morbidity but low mortality. As a result, they do not attract donor support and are not prioritized by individual countries. Resource allocation has been scarce, which has led to disjointed projects with poor sustainability. As with other low- and middle-income countries, a large proportion of the limited funds available is directed to inpatient care. Despite overwhelming supportive evidence, the integration of mental health services within primary health care is still a challenge for most Member States of the region. There remains a significant shortfall in numbers of psychiatrists and psychologists. Although the focus has been on training of

Box 1. The “five As” approach to developing community-based programmes

Availability
Services that will address at least the minimum needs of populations in mental and neurological disorders should be available to everyone, regardless of where they live. The key questions are: what are the minimum services needed and who will deliver them?

Acceptability
Large segments of populations in the countries of the region continue to perpetuate superstitions and false beliefs about mental and neurological illnesses. Many believe that these illnesses are due to “evil spirits”. Thus, even if appropriate medical services are made available, they would rather go to sorcerers and faith healers. Populations need to be informed and educated about the nature of neuropsychiatric illnesses.

Accessibility
Services should be available to the community, in the community, and at convenient times. If a worker has to give up his or her daily wages and travel a substantial distance to see a medical professional who is only available for a few hours a day, he or she is unlikely to seek these services.

Affordable medicines
Some medicines are beyond the reach of the poor. Every effort should be made to provide an uninterrupted supply of essential medicines at an affordable price. Thus, government policies in terms of pricing, and the role of the pharmaceutical industry in distribution and pricing, become critical.

Assessment
Being new, these programmes need to be continuously assessed to ensure appropriateness and cost effectiveness. Changes in the ongoing programmes, based on impartial evaluations, are essential.5
nonspecialists and implementation of the WHO Mental Health Gap Action Programme (mhGAP), which has been developed for resource-poor settings, the region has yet to embrace fully this evidence-based approach.

Moving beyond disorders: mental well-being for all

More than 70 years ago, the founding fathers of WHO incorporated in its constitution the concept of mental well-being in the definition of health as a “state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”.

The growing body of empirical evidence for the importance of factors other than disease in human well-being has led to a greater understanding of the social determinants of health and the adoption of targeted, intersectoral initiatives such as the Millennium Development Goals and Sustainable Development Goals. In tandem, the concept of “avoiding disease” has given way to one of “promoting wellness”.

While the importance of improving physical wellness has gained traction, the full value of promoting mental well-being has yet to be exploited. A challenge is that mental well-being is contextual and subjective and therefore difficult to define and measure. Promoting factors within an individual may include absence of disease, prosperity, and happiness or contentment, which in turn may be tempered by external factors, such as cultural norms. Each person’s level of mental well-being may fluctuate and differ in family, work and other settings, owing to varying cognitive, emotional and behavioural responses. Thus, mental well-being is experienced as a spectrum, rather than as a state that is present or absent. A key component mental well-being is resilience, which is “the ability to cope with adversity and to avoid breakdown when confronted with stressors”.

Indeed, WHO defines mental health overall as “a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community”.

Programme-level approaches to improving mental well-being include improving community cohesion and social capital; interventions in early childhood development; school interventions; workplace programmes for promotion of mental health; improving well-being of the elderly through improving vision, hearing, exercise and networking; reducing harm from addictive substances, including alcohol; preventing violence; preventing suicide; and promoting adolescent mental health.

Strategies to improve community mental well-being require a whole-of-society approach and broad intersectoral action, principally driven by the non-health sectors. However, the health sector can play a critical advocacy and technical role.

References

7. WHO South-East Asia regional strategy on autism spectrum disorders (ASD). New Delhi: World Health Organization Regional Office for South-East Asia; 2017 (in press).
15. Project to increase community response and action to address alcohol issue in three selected locations in Kalutara district, Sri Lanka. New Delhi: World Health Organization Regional Office for South-East Asia; 2017 (in press).

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Perspective

Mental health policies in South-East Asia and the public health role of screening instruments for depression

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Abstract

The World Health Organization (WHO) South-East Asia Region, which contributes one quarter of the world’s population, has a significant burden due to mental illnesses. Mental health has been a low priority in most countries of the region. Although most of these countries have national mental health policies, implementation at ground level remains a huge challenge. Many countries in the region lack mental health legislation that can safeguard the rights of people with mental illnesses, and governments have allocated low budgets for mental health services. It is imperative that concerned authorities work towards scaling up both financial and human resources for effective delivery of mental health services. Policy-makers should facilitate training in the field of mental health and aim towards integrating mental health services with primary health care, to reduce the treatment gap. Steps should also be taken to develop a robust mental health information system that can provide baseline information and insight about existing mental health services and help in prioritization of the mental health needs of the individual countries. Although evidence-based management protocols such as the WHO Mental Health Gap Action Programme (mhGAP) guidelines facilitate training and scaling up of care in resource-limited countries, the identification of mental disorders like depression in such settings remains a challenge. Development and validation of brief psychiatric screening instruments should be prioritized to support such models of care. This paper illustrates an approach towards the development of a new culturally adapted instrument to identify depression that has scope for wider use in the WHO South-East Asia Region.

Keywords: depression, instrument development, mental health policy, mental health resources, screening instruments

Mental health challenges in the WHO South-East Asia Region

The World Health Organization (WHO) South-East Asia Region comprises 11 countries and contributes one quarter of the world’s population. Most of the countries in the region belong to the low-income group based on World Bank criteria, and face significant mental health challenges. Mental disorders are the leading cause of all years lived with disability globally, with two of the disorders figuring in the top 10 causes of disability in 2015; major depressive disorder was the third-leading cause of disability worldwide.

Despite this huge burden, most patients with mental illness do not receive any treatment. The situation is especially alarming in low-resource settings, where the treatment gap can be as high as 90%. This gap can be attributed to several reasons, including low governmental priority for mental health, which is reflected in delays in developing national-level mental health policies or legislation protecting the human rights of people with mental health problems. Another important contributor to this gap is lack of both financial and human resources. There have been a number of initiatives at the global level to bridge this gap through effective interventions and evidence-based delivery mechanisms. WHO has also made available evidence for effective intervention in the form of the Mental Health Gap Action Programme (mhGAP) guidelines.

This paper provides a brief overview of the current constraints on mental health care in the WHO South-East Asia Region; highlights the need for improved screening of mental disorders; and describes the development of a new culturally adapted instrument to identify depression in Bangladesh, India and Nepal that has scope for expanded use throughout the WHO South-East Asia Region.

Governance and mental health policy provision

An effective mental health policy helps in establishing national priorities in planning, organizing and coordinating different components of a mental health system. Eight out of 11 countries in the WHO South-East Asia Region have a separate national mental health policy; however, implementation of such policies is limited in many low- and middle-income countries. Five out of the 11 countries of the region do not have separate legislation for mental health, while some dedicated legislation includes documents that are more than a century old and do not reflect international standards based upon universally accepted values and principles. Several countries in the region have drafted new legislation that is awaiting approval and enactment.

Many countries of the region have high estimated suicide rates (age-standardized rate per 100 000 population ranging...
from 3.7 to 28.8), and contribute to more than one third of suicides globally. Only Bhutan, Sri Lanka and Thailand have national suicide-prevention plans.

Linking mental health programmes to other health programmes and integrating the services with primary health care can improve the implementation of the policies. Development of effective pilot projects showing the cost effectiveness of these interventions can help in convincing authorities to implement policy. The National Institutes of Health of the United States of America (USA) has allocated grants to set up a collaborative project called the South Asian Hub for Advocacy, Research and Education on Mental Health (SHARE). The project aims for institutions in South Asia to carry out and utilize research that answers policy-relevant questions related to reducing the treatment gap for mental disorders in the region. It will include a randomized controlled trial to evaluate a peer-led intervention for maternal depression in India and Pakistan. Similarly, a project called the PRogramme for Improving Mental Health care (PRIME), which includes two countries in the region (India and Nepal), aims to generate evidence on the implementation and scaling up of integrated packages of care for priority mental disorders in primary and maternal health-care settings.

Financing for mental health services
Financing is at the heart of development of successful mental health services, as it helps in translation of plans and policies into action through allocation of resources. The percentage of total health budget allocated for mental health varies, from as low as 0.06% in India to 4% in Thailand. There could be several possible reasons for this dismal allocation: low priority of mental health needs, absence of need-based policy assessment, failure of recognition of mental illnesses, low resources, and failure to optimize available resources. Improvement in the allocation of government funds is essential to prevent individual out-of-pocket payment for mental illnesses, which deters service utilization and leads to inequitable distribution of services and marginalization of patients who are poor.

Countries in the WHO South-East Asia Region can draw lessons from Thailand for mental health financing. All severe mental illnesses and a few common mental disorders, including depression, are covered in different social insurance schemes, as a result of which more than 90% of Thai people have free access to essential psychotropic medications, if required, including antidepressants.

Human and capital resources
Availability of resources, both human resources and treatment facilities, is crucial for scaling up mental health services. Most countries of the WHO South-East Asia Region have an acute shortage of human resources. The median number of professionals working in the field of mental health in the region is 5.3 per 100,000 population, which is about half of the overall global median. Nine out of the 11 countries in the region have fewer than one psychiatrist per 100,000 population. In terms of availability of psychiatric beds across all facilities, the South-East Asia Region (0.23/100,000 population) falls well below the global median (3.2/100,000 population). Only Sri Lanka has numbers of outpatient facilities and beds in both general hospitals and mental hospitals that are higher than the global median.

Mental health training is lacking in the undergraduate curricula in much of the region (e.g. only 4% of the training for medical doctors is devoted to psychiatry). However, Sri Lanka requires eight or more weeks of training in psychiatry and it conducts a separate examination in the subject for medical undergraduates.

WHO strongly recommends integration of mental health services into primary health care, to close the mental health treatment gap, as it can enhance access to services, decrease violation of the human rights of patients, be cost effective and generate better health outcome. Only 30% of the countries in the region have provided training in mental health to the majority of doctors in primary health care, whereas almost 50% of them have trained their nurses in primary health care. Similarly, 50% of the countries in the region have officially approved training manuals in the majority of primary healthcare clinics. In 44% of the countries, there is no regulation for doctors in primary health care prescribing psychotropic medication; however, none of the countries of the region allow their nurses to prescribe medications.

Information systems for mental health
A robust mental health information system is required to understand the functioning of the mental health system and provide a baseline for monitoring changes and insight to improve it. Seven countries in the WHO South-East Asia Region have made use of the WHO Assessment Instrument for Mental Health Systems (WHO-AIMS) for an initial assessment of their mental health-care system.

The current level of mental health information system in most countries in the region is patchy at best. In three countries (Bangladesh, Bhutan and Myanmar), data on mental health are compiled only for general health statistics. In four countries (India, Indonesia, Nepal and Maldives), no data on mental health have been collected for the last 2 years. In Thailand only, a system is in place where all the facilities transmit data to the Strategic and Planning Bureau, Ministry of Public Health and to regional community mental health centres. Based on this information, a report that comments on the data has been published every year by the Government Department of Mental Health.

Scaling up mental health care
Several initiatives are needed to circumvent the lack of resources in these countries in the WHO South-East Asia Region. Belkin et al. have proposed a five-step implementation approach for large-scale scale-up of mental health care in lower-resource settings: (i) assessing the context; (ii) identifying priority care pathways that are linked with specific skill packages; (iii) specifying decision supports, supervision and triage rules to activate those care pathways; (iv) using quality-improvement practices; and (v) planning for sustainability and capacity-building. In this framework, available resources are deployed in ways that are context specific and scalable. Treatment functions can be divided along various levels of a stepped care pathway, such that nonspecialists are enabled to do the bulk of screening and triage, monitoring, and counselling tasks (task-shifting). A recent study conducted in a rural tribal population of south India showed that task-shifting was a cost-effective strategy that helped to improve daily functioning, treatment adherence and self-referral of psychiatric patients over a period of 3 years.
Screening for depression in primary care

Depression contributes significantly to the burden of disease worldwide. Primary care is a major access point for the management of depression in high-income countries, and can play a similar role in low- and middle-income countries. However, even in high-income countries, despite advances in the management of depression at the level of primary care, such as the availability of safe antidepressant drugs and effective collaborative care strategies, amelioration of depression is uncommon. For a successful outcome, the affected individual has to access health care, and the care setting has to recognize depression, initiate and provide adequate treatment, and monitor progress and outcome. Pence et al. estimated that in the USA, of the 12.5% of patients in primary care that have major depression, only 47% were recognized clinically in primary care settings, 24% received some treatment, 9% received adequate treatment, and 6% achieved remission. Multiple steps along the depression-management cascade would have to be targeted to improve the overall remission rates for patients in primary care and thus the burden of depression at the population level.

It is evident that clinical under-recognition of depression presents a major barrier to improvement of population mental health. The United States Preventive Services Task Force has found a moderate level of evidence to recommend screening for depression in the general adult population, including pregnant and postpartum women, in practices with systems to ensure accurate diagnosis, effective treatment and appropriate follow-up. However, others have argued that there is no evidence that screening per se improves mental health outcomes for patients, and that depression-screening programmes carry risks that are not justified by the uncertain benefits. Potential disadvantages to screening include large numbers of false positives, with the potential adverse effects of labelling, and the lower efficacy of depression treatment for patients with less-severe depression. Findings also suggest low levels of patient acceptance of mental health services in primary care, poor quality of routine care received after screening, and lack of evidence showing cost effectiveness and improved outcome with screening programmes. Thoms and colleagues have cited rising rates of antidepressant prescriptions as evidence that depression is already being adequately diagnosed (in high-income countries). In line with such reasoning, the National Institute for Health and Care Excellence of the United Kingdom of Great Britain and Northern Ireland, and the Canadian Task Force on Preventive Health Care, do not recommend routine screening for depression in adults at average risk. Similarly, the Nepal Mental Health Care Package does not include recommendations for universal screening.

In low- and middle-income countries, the current rate of detection of depression in primary care is suboptimal and is a point in favour of screening; however, the paucity of trained staff to conduct screening and provide adequate services would argue against a policy for routine screening of depression in the clinical as against the research setting. As Pence et al. have suggested, as a first step, periodic screening of all patients could be initiated to help define the prevalence of depression in the patient population in specified clinics. Later, clinics that gain experience in identification and management of depression could be recruited to improve the quality of treatment through an approach of regular identification, monitoring and management. System-level changes for the identification and treatment of depression could be initiated later, after the accrual of evidence.

The need for brief identification instruments for depression in low-resource settings

Evidence-based management protocols for resource-limited settings are available (e.g. the WHO publication, mhGAP intervention guide for mental, neurological and substance use disorders in non-specialized health settings) to aid provision of basic mental health services by nonspecialist health workers; however, identification of mental disorders like depression in such settings remains a challenge. Development and validation of brief psychiatric screening instruments is one of the priority research areas identified by global experts through the “Grand challenges in global mental health” initiative to support such models of care. The use of brief screening instruments as clinical tools for nonspecialist workers necessitates a high level of local precision and relevance, as these instruments need to be sensitive enough to identify new cases and monitor changes in symptom level over time, in order to facilitate targeted management and follow-up.

Most brief screening instruments have been developed in high-income countries with “western” cultures and may have reduced sensitivity in low- and middle-income countries because emotional distress is experienced and communicated differently in different social contexts.

Cross-cultural use of research instruments requires tools that are “culture free” or culturally equivalent. Van de Vijver and Poortinga list three types of bias that can impact on cross-cultural research, namely construct bias, method bias and item bias. Construct bias occurs when the concept under investigation differs substantially across cultural groups; for example, the idea that emotions can exist as mental phenomena in the absence of external causes is incomprehensible in certain societies. Method bias occurs when the methods used to examine a construct are culturally unfamiliar or inappropriate, for example, the use of paper-and-pencil tests in cultures where oral traditions predominate. Item bias occurs when a specific item does not fit the description of a concept under investigation in the target culture, for example, using local idioms such as “blues” for sadness.

Cultural considerations in the development of instruments

A longstanding challenge in studying the relationship between psychological phenomena and their cultural context has been striking a balance between the search for universals and the description of the rich variations in phenomena due to cultural and contextual differences. Three approaches to the study of psychological phenomena in relation to their cultural context can be distinguished: the cultural-comparative, or etic approach; the indigenous, or emic approach; and the combined etic–emic approach. The etic approach examines the applicability of western models and theories of psychological phenomena in non-western cultural contexts. The emic approach explores phenomenological variations and culture-specific phenomena in indigenous cultures. The combined etic–emic approach attempts to generate more
nearly universal models of phenomena that are valid for a broader range of cultures; for example, studies have conclusively demonstrated the ubiquity of somatization of depression and anxiety. The main substantive challenge to the etic approach is whether imposed constructs adequately cover indigenous constructs. The major limitation of the emic approach is that many of the discovered “unique” or culture-specific constructs can be subsumed under broader universal models. So, emic constructs need to be demonstrated that they provide incremental validity beyond that provided by etic constructs. The combined etic–emic approach assumes that etic constructs may provide a framework in which to consider human universals, and that the emic approach may add new constructs to the assumed universals, to create more comprehensive universals as well as to delineate cultural variability. The main limitation of the combined emic–etic approach is that the process required to build up the comprehensive nomological network of constructs to reach universal coverage is time consuming. Empirical validation is also needed, to demonstrate that the combined approach provides incremental predictive validity above and beyond that provided using either the emic or etic approach alone.

In several countries of the WHO South-East Asia Region, the Patient Health Questionnaire (PHQ) has been translated or culturally adapted for screening depressive disorders. Some efforts have also been made to develop scales based on symptoms and signs as manifested in local cultures. Noteworthy examples of the latter are the Amritsar Depression Inventory in India, whose cross-cultural validity has also been tested with the General Health Questionnaire in an English population; the Peradeniya Depression Scale in Sri Lanka; and the Thai Depression Inventory in Thailand. The greater number of items limits use of these emic scales as screening instruments and their cultural dependence limits their cross-cultural comparability and international/regional use. Recently, Kohrt et al. combined local idioms of distress with a culturally adapted version of the PHQ-9, to efficiently screen for depression in Nepal.

In the development of the Depression Identification Instrument for Bangladesh, India and Nepal (detailed later), the authors proceeded from the assumption that depression, like many psychological constructs, may have universal aspects that are shared by all cultures (i.e. "global etic") and aspects that are common to some cultures (i.e. "regional etic"), as well as unique aspects (i.e. emic). The Depression Identification Instrument was compared and contrasted with relevant western (presumed global etic) measures of depression, anxiety and somatization, to locate the new measure within the global etic space, as well as to visualize the cultural specificity of the regional/local measure. A possible challenge to this approach is that the "regional" measure based in Bangladesh, India and Nepal may not generalize to subregions of these countries and other countries in the WHO South-East Asia Region, which differ on linguistic (Bangla, Hindi and Nepali share Indo-Aryan roots) as well as other cultural yardsticks. However, the possibility of this happening should be lower than for etic measures.

Kohrt et al. followed a different form of a combined etic–emic approach, in which they used idioms of distress with a culturally adapted etic measure to efficiently identify depression in a primary care setting in Nepal. However, their approach does not address the question of universality of the western construct of depression.

**Development of cross-cultural instruments**

If a validated questionnaire is available in another language, researchers usually adapt it rather than creating a new one, because cross-cultural adaptation is faster. The cultural adaptation of established instruments follows what has been called a sequential approach to instrument development. This approach assumes that the item content in the original scale adequately represents the construct under consideration in the source country and the target countries. If the construct of depression is different in the source and target countries, the sequential approach will provide for cross-cultural comparability but will have limited validity in the target countries.

In contrast to the sequential approach, simultaneous development of an instrument assumes that, even when cultural universality of dimensions exists, culture-specific assessments may be necessary. The approach identifies cross-cultural aspects at the concept and construct level in multiple cultures. This process of development enhances the international and cross-cultural comparability of items, scales and instrument properties. This method was used by the WHO Quality-of-Life (WHOQOL) group to develop its quality-of-life measure, which is reliable and valid in a range of different cultures. Fifteen culturally diverse centres were simultaneously involved in operationalizing the WHOQOL instrument’s domains; drafting and selecting questions; generating response scales; and pilot-testing. Item development occurred at the same time in these countries, and the results were then pooled and translated into one source version, from which back translations into different languages were performed.

**Steps of instrument development**

Over the years, the standards have been set for developmental steps in the process of instrument development and testing. It is important to obtain an adequate representation of the respondent’s experience. This is achieved through client interviews, expert opinion, symptom lists, or diagnostic classification systems. After recording, these statements are used for item development and the construction of a dimensional measurement model. In the case of multinational instrument development, a forward–backward translation process follows, so that language versions reflecting core contents can be tested. Pilot-testing involves completing the questionnaire, followed by a review of the acceptability of the measure in terms of detailed feedback on the item level, by means of patient interviews or written responses (cognitive debriefing). Field-testing of the new questionnaire requires an adequate sample size, with patient numbers depending on the psychometric approach chosen. In classical test theory, reliability testing and factorial validity are used to determine construct validity. Inspection of the characteristics of item distribution guides decisions on inclusion or exclusion of items, and factor analysis informs the composition of scales.

Some measures like the comprehensive modular measurement systems are based on probabilistic rather than classical test theory, wherein an item–response–theory approach is used to construct comprehensive “item banks” derived from available instruments.
Depression Identification Instrument for the WHO South-East Asia Region

The WHO Regional Office for South-East Asia is in the process of developing a Depression Identification Instrument for use in primary care. The aim of the exercise was to develop a culturally adapted instrument to identify depression in Bangladesh (Bangla), India (Hindi) and Nepal (Nepali), with a view to potentially expanding its use in the South-East Asia Region. An etic–emic approach was used that allowed for measurement of depression using western as well as indigenous expressions.

To develop a measure of depression that was reliable and valid in the three countries, a regional panel of experts was formed in each country. It was decided to define depression as constitutive of 14 domains: 10 etic domains based on diagnostic elements of the International Statistical Classification of Diseases and Related Health Problems (ICD-10) and four emic domains (preoccupation/worry, irritability, other psychological, other somatic). All centres subsequently contributed items to the pilot version of the Depression Identification Instrument, based on focus-group discussions with users, caregivers and mental health professionals. Commonly used diagnostic criteria for depression, and items from etic as well as emic depression scales, were added to this pool. Repeated translation and back-translation were used to check the adequacy of the items. After these formulated questions were transcribed, semantically equivalent questions were eliminated from the global pool and 173 items were included in the pilot instrument.

The resulting draft of the Depression Identification Instrument was validated in primary health-care populations at each centre, in a sample of 300 individuals (200 with depression, 50 with neurotic, stress-related and somatoform disorders and 50 normal controls, diagnosed as having no mental health disorder according to the Mini International Neuropsychiatric Interview). Data gathered were statistically analysed to eliminate items that did not show adequate discriminant value in relation to healthy controls; convergent validity in relation to commonly used scales (Hamilton Depression Rating Scale, Hamilton Anxiety Rating Scale, and PHQ-9); or adequate inter-item or item-total correlation or factorial loading. These analyses were carried out at the level of individual centres, at the level of summaries across centres, and at the level of the pooled regional data.

An item-sorting exercise was conducted with 50 mental health professionals, to classify depressive symptoms into the 14 specified domains of depression. Preliminary confirmatory factor analysis yielded a six-factor model, comprising factors titled: “depressed mood”, “loss of interest”, “peppemism”, “guilt”, “preoccupation/worry” and “perceived lack of agency”, with adequate fit indices for the three-country data. These dimensions were also recovered in data from each country individually.

While, “depressed mood”, “loss of interest”, “peppemism” and “guilt” are universal domains of depression; “preoccupation/worry” and “perceived lack of agency” appeared to be new dimensions. The factor “preoccupation/worry” lies outside of diagnostic elements of the ICD-10, but such phenomena are described as associated features of depression. The factor also overlaps with “thinking too much”, an idiom that has appeared frequently in ethnographic studies of mental distress in many world regions, including countries in the WHO South-East Asia Region. Kaiser et al. report that out of 138 publications on “thinking too much”, 43.5% were from Africa, and 38.4% from South-East/South Asia. The idioms typically reference ruminative, intrusive and anxious thoughts and worries. The present authors’ research suggests that “preoccupation/worry”/“thinking too much” may constitute important (core) aspects of depression, although literature suggests that phenomena related to the idiom may also be important constituents of anxiety and post-traumatic stress disorders. However, considering that idioms like “thinking too much” also reflect aspects of experience, distress and social positioning not captured by psychiatric diagnoses, the factor was named “preoccupation/worry” rather than “thinking too much”.

Lack of agency may resemble learned helplessness/lack of self-efficacy in the etic sphere, while it may mirror indigenous worldviews in the emic sphere. Hoch states that there is a lack of anthropocentric orientation in the traditional Indian worldview, which may be variably influential in the three countries studied. There is less emphasis on ego, i.e. sense of personal identity, or individual power, as a result of such an orientation. The doctrine of karma adds to this subordination of the self to the cosmic order, and acceptance of misfortune or adverse circumstances, as they are believed to be impervious to both individual and interpersonal–social action.

The six-factor model of combined etic–emic descriptors offers a factorially valid way to measure dimensions of depression in primary-care populations in the three countries. The instrument can be used as an alternative to imported depression measures, when the goal is to measure depression in an indigenously valid way while still retaining comparability across cultures. Future research needs to examine the comparative advantage of the combined etic–emic depression instrument in predicting important outcomes such as the clinical diagnosis. Equally importantly, however, future studies should test the unique value of these scales, assessing the relative utility of the combined etic–emic scales (compared with imported measures) to predict culture-specific outcomes such as differences in emotional expressiveness or the relational nature of depressive symptoms.

The effectiveness of brief screening questionnaires

Treatment guidelines developed in high-income countries recommend routine screening for depression in primary health care as an initial step in holistic patient care. A growing body of evidence suggests that nonspecialist health workers are capable of providing effective counselling as well as case management for depression in health settings in low- and middle-income countries. Brief instruments have emerged as a key element of these treatment-delivery models in resource-poor settings, and are critical to the scale-up of mental health care.

A number of brief instruments (≤12 items), including the PHQ-9 and the Kessler-10 (K-10), have been validated in low- and middle-income countries. Similarly, longer instruments (≥15 items), including the Centre for Epidemiological Studies-Depression (CES-D) scale, have also been validated in low- and middle-income countries. In a systematic review...
of validated depression-screening instruments in low- and middle-income countries, Akena et al. found that brief, as well as long, screening instruments showed acceptable accuracy. Brief scales may have an edge over the longer instruments, as they can be administered in a much shorter time. However, the authors cautioned that use of ultra-brief scales that do not include the whole spectrum of depression symptoms, such as suicide, should be followed by a detailed diagnostic interview.

Conclusion

Depression is a leading cause of disability, yet in many countries of the WHO South-East Asia Region, the treatment gap is over 90%. A dearth of mental health specialists is a barrier to closing this treatment gap. Lay providers can be trained to provide basic mental health services at the primary care and community level. Brief identification instruments can facilitate case detection, symptom monitoring and triage to a higher level of care. Instruments developed in high-income countries with “western” cultures may be of limited relevance in settings in South-East Asia. Ethnographic methods can help in adaptation of instruments to enable effective use across diverse systems of care.

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References

Perspective

Depression and physical noncommunicable diseases: the need for an integrated approach

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Abstract
Depression is globally the third-leading cause of disability in terms of disability-adjusted life-years. Depression in patients with diseases such as cancer, diabetes mellitus, stroke or cardiovascular disease is 2–4-fold more prevalent than in people who do not have physical noncommunicable diseases, and may have a more prolonged course. The significant burden due to depression that is comorbid with chronic physical disease, coupled with limited resources, makes it a major public health challenge for low- and middle-income countries. Given the bidirectional relation between depression and chronic physical disease, the clear way forward in managing this population of patients is via a system in which mental health care is integrated with primary care. Central to this integrated approach is the Collaborative Care Model, adapted to the local sociocultural context. In this model, care is jointly led by the primary care physician, supported by a case manager and a mental health professional. Various successful initiatives in low- and middle-income countries may be used as templates for collaborative care in other low-resource settings. The model involves a range of interwoven components, such as capacity-building, task-sharing, task-shifting, developing good referral and linkage systems, anti-stigma initiatives and lifestyle modifications. Policies based on adoption of this approach would not only directly address depression that is comorbid with physical noncommunicable disease but also facilitate achievement of Sustainable Development Goal 3, to "ensure healthy lives and promote well-being for all at all ages".

Keywords: chronic physical diseases, Collaborative Care Model, depression, low- and middle-income countries, noncommunicable diseases

The challenge of depression and physical noncommunicable diseases

Depression is globally the third-leading cause of disability as measured in terms of disability-adjusted life-years.¹ The prevalence of depression in patients with physical noncommunicable diseases such as cancer, diabetes mellitus, stroke or cardiovascular disease has been found to be 2–4-fold higher than in the general population;² further, although evidence is lacking, results also indicate that depression that is comorbid with other noncommunicable disease may follow a more prolonged course.² The World Health Survey, conducted by the World Health Organization (WHO) across 60 countries, found that between 9.3% and 23% of patients with chronic physical diseases had comorbid depression.³ Moreover, modelling of the WHO survey data for depression and angina, arthritis, asthma and diabetes indicated that comorbid depression incrementally worsened health compared with depression alone, with any of the chronic diseases alone, or with any combination of chronic diseases without depression; these results were consistent across countries and different demographic characteristics.³

A bidirectional relationship exists between depression and physical disease, in terms of causation, clinical features, detection and treatment. Chronic physical diseases like diabetes mellitus, hypertension, asthma and heart disease have been considered as risk factors for depression. Evidence also exists for depression as a risk factor for heart disease and stroke, and there is inconsistent evidence for diabetes mellitus as a risk factor.⁴,⁵ There are many ramifications of depression that is comorbid with physical disease, as reflected in poor treatment adherence, poor lifestyle, poor quality of life, slower improvement in both the depression and the chronic physical disease, and higher mortality.⁷,⁸

The significant burden due to depression that is comorbid with chronic physical disease, coupled with limited resources, makes it a major public health challenge for low- and middle-income countries. This article addresses certain salient issues with regard to depression that is comorbid with noncommunicable disease, in the context of low- and middle-income countries. It aims to present the challenges in this area and to offer policy guidance on this issue for achieving Sustainable Development Goal 3, to "ensure healthy lives and promote well-being for all at all ages".⁹

Challenges exist in the accurate detection and diagnosis of depression occurring in the context of noncommunicable disease. Depressive symptoms can mimic physical signs and
symptoms or side-effects of medication. There are also issues relating to limitations of diagnostic criteria for depression in physical illness, and psychometric properties of the assessment tools, as well as issues of therapeutic nihilism and cultural explanations. Undiagnosed depression that is comorbid with chronic physical disease translates into increased morbidity and mortality and results in increased burden on caregivers and health-care systems.

Several challenges exist in the management of depression that is comorbid with noncommunicable disease. These include worsening of the noncommunicable disease, owing to side-effects of the psychotropic medication (for example, weight gain caused by antidepressants); the emergence or exacerbation of psychiatric symptoms, owing to medicines used for noncommunicable diseases; and drug–drug interactions. Hence, a pragmatic approach to management of depression that is comorbid with chronic physical disease should be one of comprehensive and holistic management of the person as a whole, rather than one that addresses physical and mental health concerns separately.

The way forward: integrating mental health care into primary care

The “seven good reasons for integrating mental health care into primary care” proposed by WHO and the World Organization of Family Doctors (Wonca) in 2008 highlight the rationale for integrated mental health care at the level of primary care. These are listed in Box 1.

Integration of mental health care into primary care must be considered a dynamic process, and not a one-time event. It involves an ongoing process of developing policies, training health workers, and allocating resources. Legislation is necessary for generation of general health policy, including mental health policy, as well as allocation of adequate human and financial resources. A “participants’ needs” approach must be adopted, to assess the issues of the stakeholders, and this needs to be followed by the proper legislative policies. Legislation must ensure that psychotropic medication is available in the primary care setting and must also allow primary care workers to prescribe psychotropic medication under the supervision of specialists. Financial allocation must include consideration of developing the infrastructure, training of primary care providers and employment of mental health professionals. Advocacy to shift attitudes and behaviour, by disseminating information, is important for sensitization at various levels, including political leaders, health authorities and health-care providers.

Box 1. The “seven good reasons for integrating mental health care into primary care” proposed by WHO and Wonca 2008

1. The burden of mental disorders is great
2. Mental and physical health problems are interwoven
3. The treatment gap for mental disorders is enormous
4. Primary care for mental health enhances access
5. Primary care for mental health promotes human rights
6. Primary care for mental health is affordable and cost effective
7. Primary care for mental health generates good outcomes

Training in mental health needs to be imparted under the guidance of mental health professionals and can be started early during formal education or during employment. The tasks given to primary care providers must be achievable and limited, under close supervision of specialists. Allotment of tasks must be done after evaluation of the available human and financial resources and discussion with stakeholders. The primary care providers must also receive support from secondary care, including community health-care centres as well as the community, for referral and linkages. A strong and streamlined referral system from primary care to secondary and tertiary care is important. Given the low resources allocated to mental health, it is important to train non-specialists at the same time.

Coordination and collaboration are essential for effective service delivery. The role of a mental health coordinator is important for ensuring that the programme is being implemented with effective coordination of services of primary care, as well as mental health professionals. This involves collaboration with other government non-health sectors, civil society organizations and the larger community. Successful models of integrating mental health care into primary care across various settings have been documented across many countries, including at city/province level in Argentina, Australia, Brazil, Saudi Arabia and South Africa; district level in Chile, India and Uganda; and national level in Belize, Iran and the United Kingdom of Great Britain and Northern Ireland (UK).

The recommended principles of integration of mental health care into primary care include formulating policy and plans aimed at integration; advocacy to shift attitudes and behaviour; training of primary care workers; feasible tasks in primary care; supporting primary care by specialist mental health professionals; ensuring accessibility of essential psychotropic medications for patients in the primary care setting; conceptualization of integration as a process, not an event; realization of the crucial role of a mental health service coordinator; establishment of intersectoral collaboration with the governmental non-health sector as well as civil society organizations, village and community health workers, and volunteers; and ensuring financial and human resources.

Several barriers exist to integration of mental health care into primary care at various levels. Challenges to integrated mental health care include the low priority given to mental illness, stigma associated with mental illness, managerial difficulties in relation to planning and providing integrated care at primary care level, poor mental health training imparted to physicians, poor intersectoral coordination, and deficits in financial allocation.

Preventing chronic diseases: face to face with chronic disease

The section “Face to face with chronic disease” in the WHO publication Preventing chronic diseases: a vital investment includes a stepwise framework that is based on the principle of comprehensive and integrated action and includes three steps. These include estimation of population need and advocacy for action; formulation of policy and its adoption; and identification of policy-implementation steps. The policy implementation must occur at both population and individual levels and it further comprises three steps. These include identification of the core, expanded and desirable policy-implementation steps. The core
steps include those that are feasible to implement with existing resources in the short term. The expanded steps include those that are possible for implementation with re-allocation of resources in the medium term. The desirable steps include the evidence-based interventions that are beyond the reach of existing resources. This stepwise approach can offer an important template for integration of mental health care into primary care in low- and middle-income countries.

The Collaborative Care Model: the core component of integrated mental health care

In the Collaborative Care Model (CCM), the overall responsibility lies with the primary care physician, with support from the case manager (who monitors follow-up of patients and assessment of adherence) and a mental health professional. This model involves various interwoven components such as capacity-building, an effective linkage and referral system, anti-stigma initiatives and lifestyle modifications. The results of the National Depression Treatment Program in Chile (CCM for managing depression) can serve as a good framework for developing similar models across other low- and middle-income countries. The components of the CCM for addressing mental disorders are listed in Box 2.

Capacity-building partnerships

Capacity-building has been defined as the “collaborative process involving education and practical applications incorporating best practices and action research dependent on the strength of relationships, level of knowledge exchange, and communication between partners”. The important components of capacity-building include assessment of the needs of participants; interdisciplinary engagement; consultation with the stakeholders; professional collaboration between high-income countries and low- and middle-income countries (known as twinning); training of staff psychiatrists and a psychiatry resident from Toronto, followed by the psychiatry graduates in Addis Ababa receiving training as faculty in Toronto and later establishing psychiatry departments outside Addis Ababa in Ethiopia. Task-shifting followed by the psychiatry graduates in Addis Ababa receiving training as faculty in Toronto, and later establishing psychiatry departments outside Addis Ababa in Ethiopia. Task-shifting involved delegating tasks to the less-supervised health workers against a background of deficit of specialized professionals, by training nurses and health workers who provide services in the primary care setting, supervised by psychiatric nurses and psychiatrists. The feasibility of task-shifting in low- and middle-income countries has been explored and has been found to be a viable option. Another task-shifting initiative in Uganda included organizing workshops to train health professionals to improve the management of physical health and mental health care at health-care facilities. Encouraging evidence to support

Box 2. Components of the Collaborative Care Model for addressing mental health disorders, based on learning from the National Depression Treatment Program in Chile

The National Depression Treatment Program in Chile is a successful example of integration of mental health care into primary care, where psychologists and general practitioners, supported by specialists, follow evidence-based clinical guidelines providing pharmacotherapy as well as psychosocial interventions for diabetes, hypertension and depression. The components of the Collaborative Care Model for addressing mental health disorders are as follows:

- restructuring the roles of health-care providers
- a team-based approach
- task-shifting and task-sharing by primary care providers and community health workers supervised by mental health specialists, by:
  - case-finding
  - assessment of risk factors
  - providing health education about the patient’s illnesses, risk factors and treatment
  - providing evidence-based pharmacotherapy
  - providing brief psychosocial interventions
  - teaching self-management skills
  - active monitoring
  - ensuring adherence to treatment
  - ensuring regular follow-up.
the use of task-shifting is also provided by the results of two randomized controlled trials of brief psychological treatment delivered by lay counsellors, with specialist supervision, to patients in primary care settings in Goa, India. In patients with moderately severe to severe depression, the Healthy Activity Program resulted in decreased severity of depression symptoms and was cost effective in the study setting.19 In male harmful drinkers, use of the Counselling for Alcohol Problems intervention was associated with strong effects on abstinence and remission. Some evidence for cost effectiveness was also reported.19

**Effective linkage and referral services**

WHO emphasizes the need for good linkage and referral services. There must be effective linkage systems between primary, secondary and tertiary levels of care, to prevent duplication of services or delay in delivering care to a patient in crisis. An efficient referral system must be in place, with clear documentation of the reason for referral and the management provided. The primary care physician must be in regular consultation with the health professionals at regional and district level, to ensure effective linkage and referral services. WHO has suggested that linkages at various levels include incorporation of a children’s mental health component into mother and child health care; incorporation of an adolescent mental health component into HIV/AIDS and substance-misuse programmes; incorporation of child and adolescent mental health concerns into health education in schools; and incorporation of a geriatric mental health component into programmes for family health and home visits.20

A recent thematic analysis of descriptive/qualitative studies from Australia, Canada, New Zealand, Europe, and the United States of America (USA) was done to identify factors that were enablers or barriers to development of effective collaboration between primary care and specialist mental health services. The effective strategies identified were: provision of support for integration at the level of organization; facilitation of joint clinical planning and problem-solving; joint development of local care guidelines (crisis plans, referral protocols and follow-up arrangements) through regular meetings and the use of a common planning process; provision of training, support and supervision of staff committed to work in primary care and mental health; and feeding back evidence about outcomes to service partners.21

**Anti-stigma initiatives**

Stigma is one of the most important barriers to seeking treatment for psychiatric illness. The INDIGO study (iNternational study of DiScrimination and stiGma Outcomes) reported on the nature and severity of stigma and discrimination in patients with schizophrenia and depression.22 “Open the Doors” is an anti-stigma initiative by the World Psychiatry Association in high- as well as middle-income countries, with components including a school campaign assessing knowledge and attitude; media seminars for target groups such as teachers, teenagers, health professionals and police; and formation of local action groups.23,24

“Protest”, “education” and “contact” have been identified as three approaches for reducing public stigma.25 The “protest” involves stopping the reporting of inaccurate representations of psychiatric illness and discouraging a belief in negative views of mental illness. The “education” is aimed at providing information to the public for better understanding of mental illness and decreasing negative stereotyping of mental illness. The “contact” refers to social and occupational integration of persons with mental illness with the general public. The WHO European Mental Health Action Plan 2013 proposed a three-pronged approach to combat stigma, by improving the mental well-being of a population, respecting the rights of people with mental health problems and establishing accessible and effective health services.26

**Lifestyle modifications**

The role of lifestyle modifications in noncommunicable diseases is well established. The STEPwise approach to noncommunicable disease risk factor surveillance (STEPS) of WHO is an important strategy for surveillance of noncommunicable diseases by generating data on risk factors that influence the disease burden.27 The approach thereby helps in building, as well as strengthening, surveillance capacity. The STEPS approach has three components, including a questionnaire aimed at assessment of demographic and behavioural variables such as tobacco use, alcohol use, physical activity, diet, history of hypertension, diabetes mellitus, cardiovascular disease and raised cholesterol; physical measurements, including blood pressure, heart rate, height, weight and waist and hip circumference; and biochemical measurements, including blood glucose, lipids, urinary sodium and creatinine.27

Ensuring adequate sleep, socialization, regular physical exercise, involvement in recreational activities, use of relaxation techniques, and avoiding smoking and alcohol use are some of the lifestyle modifications that have been found to be of help in addressing depression.28–30 Lifestyle modifications have been found to reduce depression in patients with elevated coronary risk factors.31 Focusing on lifestyle modifications can provide effective measures for primary prevention of noncommunicable diseases and depression.

WHO recommends a core set of relatively low-cost “best-buy” intervention strategies for noncommunicable diseases. The estimated return on investment is not only many millions of avoided premature deaths but also many billions of dollars of additional economic output.32 “Best buys”, focus on at-risk individuals at the primary care level, using interventions aimed at decreasing smoking and harmful use of alcohol, and promoting nutrition, weight control and physical activity; such lifestyle changes help to address not only physical noncommunicable diseases but also depression. Also, the activities aimed at primary prevention, such as health education and promotion of health literacy and healthy lifestyles, can also help to promote the adoption of lifestyle changes at population level.13

**Other recommendations**

Other recommendations aimed at addressing depression that is comorbid with physical noncommunicable disease include increasing the number of health professionals in the primary care setting, so that more time can be devoted to mental health assessment; increasing the number of psychotropic drugs in the essential drugs list; improved resource allocation and infrastructure development; need-assessment activities; exploring the knowledge, attitude and practice among primary health-care physicians about depression that is comorbid with noncommunicable disease; developing simple and valid screening tools; developing easy-to-use treatment algorithms for primary care physicians; promoting research to overcome methodological challenges; involving local leaders, patients and caregivers in integrated mental health care in the individual
sociocultural context; and retaining qualified and trained mental health professionals in low- and middle-income countries.

The WHO Mental Health Gap Action Programme (mhGAP) can serve as a useful guide.23 The programme aims at scaling up services for mental, neurological and substance-use disorders, for low- and middle-income countries in particular. It can be adapted to the needs of persons diagnosed with comorbid noncommunicable diseases and can provide a useful algorithm for diagnosis and management of depression in this population. The WHO South-East Asia Region has taken initiatives to develop recommendations for the management of depression among persons with noncommunicable disease; a module on recommendations for screening and management of depressive disorders and substance-use disorders co-occurring with diabetes mellitus is currently being prepared by two of the authors (YPSB, PPK).

Conclusion
Depression that is comorbid with physical noncommunicable disease is a major public health problem. Globally, there is a wide treatment gap for various mental health disorders, including depression. Low- and middle-income countries continue to grapple with the issue of limited human and financial resources. Integrated management of mental health care in primary care seems to be a strategy that is suited for such settings. The Collaborative Care Model, adapted to the local sociocultural context and including the components of capacity-building, task-sharing, task-shifting; developing good referral and linkage systems; anti-stigma initiatives; and lifestyle modifications, can play a pivotal role in addressing depression that is comorbid with physical noncommunicable disease.

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References


Perspective

Decentralizing provision of mental health care in Sri Lanka

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Abstract

In the past, mental health services in Sri Lanka were limited to tertiary-care institutions, resulting in a large treatment gap. Starting in 2000, significant efforts have been made to reconfigure service provision and to integrate mental health services with primary health care. This approach was supported by significant political commitment to establishing island-wide decentralized mental health care in the wake of the 2004 tsunami. Various initiatives were consolidated in The mental health policy of Sri Lanka 2005–2015, which called for implementation of a comprehensive community-based, decentralized service structure. The main objectives of the policy were to provide mental health services of good quality at primary, secondary and tertiary levels; to ensure the active involvement of communities, families and service users; to make mental health services culturally appropriate and evidence based; and to protect the human rights and dignity of all people with mental health disorders. Significant improvements have been made and new cadres of mental health workers have been introduced. Trained medical officers (mental health) now provide outpatient care, domiciliary care, mental health promotion in schools, and community mental health education. Community psychiatric nurses have also been trained and deployed to supervise treatment adherence in the home and provide mental health education to patients, their family members and the wider community. A total of 4367 mental health volunteers are supporting care and raising mental health literacy in the community. Despite these important achievements, more improvements are needed to provide more timely intervention, combat myths and stigma, and further decentralize care provision. These, and other challenges, will be targeted in the new mental health policy for 2017–2026.

Keywords: community mental health, decentralized care, mental health, Sri Lanka, tsunami

Background

Sri Lanka is a lower-middle-income country with a population of 21.3 million.¹ The country performed strongly in the Millennium Development Goals, as evidenced by the excellent indicators for neonatal, infant, under-five and maternal mortality.² As is the case throughout the World Health Organization (WHO) South-East Asia Region, despite continuing threats from communicable disease, such as dengue, the burden on Sri Lanka’s health system has shifted towards noncommunicable illness. This is occurring in parallel with a very rapid demographic transition – Sri Lanka has one of the fastest-ageing populations in the world – and changing social structures, including erosion of traditional support structures such as the extended family.³

With respect to mental health, data from the Global Burden of Disease study in 2015 indicate that depressive disorders were the fifth-leading cause of years lived with disability in Sri Lanka, in both 2005 and 2015. Likewise, for the same years, self-harm was the second-leading cause of premature death.⁴ Mental health services in Sri Lanka have a long history of progressive development but in the past have failed to meet the needs of the majority of the population, as reflected in the large treatment gap.⁵ In 2011, a project supported by the WHO Regional Office for South-East Asia was undertaken in Uva province, to assess the level of utilization of services for one disease (psychosis), as a proxy for the level of utilization of services for mental and neurological disorders. Based on this work, the treatment gap was estimated to be 67.6%.⁶

The reasons that have contributed to this failure to provide adequate care coverage have included centralized service provision; hospital-based services; disease-oriented services; and a lack of trained staff for basic diagnosis and referral of people with mental health conditions. Nevertheless, there have been significant developments in mental health care in Sri Lanka since 2000, key elements of which are reviewed in this paper.

Policies to decentralize a centralized service

In Sri Lanka, government-funded health services are delivered at the level of tertiary, secondary and primary care. Until 2000, mental health services in Sri Lanka were limited to tertiary-care institutions, namely specialist hospitals such as the National Institute of Mental Health (NIMH), teaching hospitals affiliated to medical faculties, and provincial general hospitals. Owing to factors such as lack of awareness, stigma associated with
mental disorders, and challenges to accessibility, only a small proportion of those in need benefited from these centralized services. A further weakness was the lack of active follow-up, continuity of care or rehabilitation of patients discharged from hospital, leading to a high incidence of discharged—relapsed—readmitted inpatients. This was reflected in hospital admission statistics showing that most hospital admissions for mental disorders were readmissions.

The evolution of the current mental health-care provision started in 2000, and integration of mental health services with primary health care was at the core of the new approach to service delivery. In parallel, emphasis was placed on the need for services to move from the medical model to a biopsychosocial model of care. Political commitment to mental health changed markedly after the 2004 tsunami. A national plan of action was developed to deliver mental health services to tsunami-affected districts. The emphasis was on work at the primary health-care level, with use of psychosocial approaches to improve mental well-being. Activities were then extended to districts outside the tsunami zone.

The response to the tsunami created momentum for change in Sri Lanka’s mental health system. Various initiatives were consolidated in The mental health policy of Sri Lanka 2005–2015, which called for implementation of a comprehensive community-based, decentralized service structure. The main objectives of the policy were to provide mental health services of good quality at primary, secondary and tertiary levels; to ensure the active involvement of communities, families and service users; to make mental health services culturally appropriate and evidence based; and to protect the human rights and dignity of all people with mental health disorders.

Training the mental health-care workforce

In 2000, the Ministry of Health initiated a new programme to train medical officers in mental health. Training takes 12 weeks, with 6 weeks centrally at NIMH and the balance 6 weeks at the periphery, under the supervision of the regional consultant psychiatrist. These trained medical officers, designated as medical officers (mental health), are stationed at secondary-care institutions, namely the district general hospitals and base hospitals. This programme now has 205 trained medical officers (mental health) working in secondary-care institutions and some primary-care institutions such as divisional hospitals. The mental health services delivered by medical officers (mental health) include outpatient care, domiciliary care, mental health promotion in schools, and community mental health education. The medical officers (mental health) work in collaboration with the primary health-care teams functioning under the medical officer of health. In 2007, a further cadre of mental health practitioners was developed, with the introduction, by the Ministry of Health, WHO, and the Sri Lanka College of Psychiatrists, of a 1-year postgraduate diploma programme for medical doctors under the Post Graduate Institute of Medicine at the University of Colombo. There is a strict 4-year signed bond and a mandatory placement in a district hospital for diploma holders, to ensure they stay working in mental health. In 2009, medical officer (mental health) focal points were established, to assist the provincial government and regional director of health services, and to harmonize and coordinate all mental health activities in the district.

The mental health policy of Sri Lanka 2005–2015 recommended that there should be at least two community psychiatric nurses allocated to each district. Accordingly, in 2010, a new 6-month training programme was initiated at NIMH, as a pilot programme to train 55 nurses as community psychiatric nurses, who were allocated to psychiatry units across the island. Their primary role was to extend mental health care beyond the hospital to the community, with active follow-up of patients to encourage treatment compliance. The community psychiatric nurses also provide domiciliary mental health-care service. During a domiciliary visit, a community psychiatric nurse supervises treatment adherence; administers treatment, including depot injections as per instructions from medical staff; and provides mental health education to patients and their family members. These specialist nurses also provide mental health education in the community, in collaboration with primary health-care teams. Community psychiatric nurses also act as links to improve the referral system. This newly established connection between the psychiatry unit and the patient and their family has not only strengthened treatment adherence but also helped to improve mental health literacy in the community.

Shift from a medical model to a biopsychosocial model

Mental health care in Sri Lanka traditionally operated using the medical model. This was not a comprehensive approach and psychological and social issues affecting patients with mental disorders were often overlooked, especially when examining patients in overcrowded clinic and inpatient settings. When the medical officers (mental health) and the community psychiatric nurses started providing domiciliary care, improved assessment of the psychological and social needs of patients and their families became possible.

A cadre of psychiatric social workers was included in the extension of mental health care from a hospital setting to community settings. In 2005, with the support of WHO, 42 unemployed university graduates underwent 6 months of training in psychiatric social work and were deployed as development assistants across the country. Of the original 42 trained, 32 remain in service. In 2015, the Ministry of Health appointed a further 27 new recruits with formal Bachelor of Social Work qualifications. The psychiatric social worker is able to facilitate establishment of a link between a patient and their family and the relevant social agencies. Typically, care is provided via a multidisciplinary team, comprising the medical officer (mental health), community psychiatric nurse and psychiatric social worker. In some circumstances, an occupational therapist may also join the team. This multidisciplinary approach allows assessment of the medical, psychological and social needs of patients and their families in their own homes in the community.

Involving the community

In the past, mental health care was provided mainly by medical personnel in institutionalized settings; patients and their families were passive recipients of the care and there was no partnership with the community. The community had no ownership of the mental health care provided, and received whatever was given
to them. Community involvement began around 2002, when, with the help of nongovernmental organizations, consultant psychiatrists started to establish cadres of community volunteers and involve them in the provision of mental health care. These community volunteers comprised three groups, which included patients, family members who had a relative with a mental illness, and volunteers who had an interest in mental health. These community volunteers were given basic training in mental illness and the skills to look after a mentally ill person at home. These capacity-building programmes have produced volunteers who can detect mental illness early, care for mentally ill people in the community, and know when and how to seek appropriate help by timely referral to specialized services.

At present, there are over 80 community volunteer organizations island-wide, in all 25 administrative districts. A total of 4367 volunteers are attached to these organizations and providing mental health care at community level. An umbrella organization, Consumer Action Network Mental Health Sri Lanka, coordinates the activities of community voluntary organizations. These community volunteer organizations function at various levels. Some function as independent organizations, while others function with the assistance of the state mental health services. Their activities include early detection and referral of mentally ill persons; supervision of treatment; provision of psychological support to patients and their family members; recognition of relapse and appropriate referral; and mental health education to raise the level of mental health literacy in the community and initiate income-generating activities to facilitate community integration. The organizations are also involved at various levels, in collaboration with the state mental health services, in planning, implementation, supervision and evaluation of mental health activities at community level.

The unfinished agenda for mental well-being

Substantial progress has been made in improving mental health care in Sri Lanka since 2000, notably in the aftermath of the 2004 tsunami. Nevertheless, there remain major challenges and issues related to mental illness and mental health services. For example, compared with physical illness, there is a delay in recognizing mental illness. This delay occurs at both patient and family level, as well as at medical professional level. Even after recognition of a mental illness, there is considerable delay in seeking effective treatment. This is because many patients are first taken to agencies providing non-effective treatments. These practices add to the delay in treating individuals with mental illness. Many myths about mental illness and its treatment are also prevalent. Common myths include that mental illness is lifelong; that there are no treatments; that mental illness is contagious; and that mentally ill persons are violent. This also leads to unnecessary suffering and delay in treatment.

Despite the concerted push to decentralize care provision, mental health services in Sri Lanka remain mostly available at tertiary- and secondary-care institutions. To provide an effective mental health service, further efforts are needed to shift the availability of services to the primary-care level. This has still not happened island-wide. Availability of mental health services in primary care is only just beginning, and, at present, is highly dependent on the personal interest of mental health professionals. The services available are mostly medical interventions. To provide a good-quality primary-care service, psychological therapies have to be available and mental health professionals who are competent to provide psychological therapies are needed.

In addition, despite the creation of the new mental health cadres, demand outstrips supply and fuller integration with primary health care and expansion of qualified personnel are needed. For example, during a train-the-trainers programme, medical officers (mental health) graphically described their daily pressures. These challenges ranged from excessive patient numbers to shortage of essential medicines in clinics, and cultural stigma towards psychiatric staff and their patients. Stigma and associated discrimination are present at individual, family, community and professional level. They are encountered during an illness, as well as after recovery, and are directed at patients, their families and the community. The distress caused by the stigma and discrimination is sometimes more than the distress caused by the illness itself. Low mental health literacy persists in Sri Lanka, signalling an urgent need to educate the public on mental health and related issues.

The Ministry of Health is in the process of developing a new mental health policy for 2017–2026, which focuses on new developments in mental health services and addresses the unfinished agenda in mental well-being, in alignment with the Sustainable Development Goals and other global health agendas.

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References


Post-disaster mental health and psychosocial support: experience from the 2015 Nepal earthquake

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Abstract
On 25 April 2015, an earthquake of magnitude 7.8 struck Nepal, which, along with the subsequent aftershocks, killed 8897 people, injured 22 303 and left 2.8 million homeless. Previous efforts to provide services for mental health and psychological support (MHPSS) in humanitarian settings in Nepal have been largely considered inadequate and poorly coordinated. Immediately after the earthquake, the Government of Nepal declared a state of emergency and the health sector started to respond. The immediate response to the earthquake was coordinated following the Inter-Agency Standing Committee (IASC) cluster approach. One month after the disaster, integrated MHPSS subclusters were initiated to coordinate the activities of many national and international, governmental and nongovernmental, partners. These activities were largely conducted on an ad-hoc basis, owing to lack of focus on MHPSS in the health sector’s contingency plan for emergencies. The mental health subcluster attempted to implement a mental health response according to World Health Organization and IASC guidelines. The MHPSS response highlighted many strengths and weaknesses of Nepal’s mental health system. This provides an opportunity to “build back better” through reform of mental health services. A strategic response to the lessons of the 2015 earthquake will deliver both improved population mental health and increased preparedness for the future.

Keywords: disaster, earthquake, emergency, humanitarian response, mental health, Nepal, psychosocial support, South Asia

Background
The human suffering resulting from natural or human-made emergency situations includes not only large-scale displacements, food shortages and outbreaks of disease but also mental health problems. After a disaster, while a large proportion of the affected population has normal psychological reactions, an estimated 15–20% will have mild or moderate mental disorders, such as mild and moderate forms of depression, anxiety or post-traumatic stress disorder (PTSD), while 3–4% will suffer from severe disorders like psychosis, severe depression and severely disabling forms of anxiety disorders. A systematic review of mental health problems after the Great East Japan Earthquake in 2011 found that the reported prevalence of post-traumatic stress reaction ranged from 10% to 53.5%, while for depression it was 3.0% to 43.7%. Similarly, in Thailand, the prevalence of PTSD and depression was 33.6% and 14.3%, respectively, 3 months after the 2004 tsunami, while in China, the prevalence of PTSD after the 2008 Wenchuaun earthquake was 58.2% at 2 months and 22.1% at 8 months after the event.

Along with new-onset problems, psychological trauma following a disaster also worsens pre-existing mental health problems. The distress associated with disaster is seen to persist for a long time after the incident. In a longitudinal analysis 20–24 months after the New Zealand earthquake in 2010, the risk of developing mental disorder was found to be 1.4 (95% confidence interval [CI]: 1.1–1.7) times higher among the cohorts with high levels of exposure to the earthquake than among those with no exposure, owing to increases in the rates of major depression, PTSD, other anxiety disorders and nicotine dependence, with 10.8–13.3% of the overall rate of mental disorder attributable to exposure to the earthquake. Longitudinal studies after the 2011 Great East Japan Earthquake showed that symptoms of post-traumatic stress decreased over time in the affected areas, whereas those of depression did not.

On 25 April 2015, an earthquake of magnitude 7.8 struck Nepal, and, along with the subsequent aftershocks, killed 8856 people, injured 22 309 and left 2.8 million homeless. Out of 75 districts, 14 were highly affected and 21 were moderately affected. Out of 75 districts, 14 were highly affected and 21 were moderately affected. A total of 462 public and private health facilities were completely damaged and 765 health facilities or health-administration structures were partially damaged. A total of 18 health workers and volunteers lost their lives and 75 were injured, adding further challenges to the delivery of health services. As a result, the ability of health facilities to respond to health-care needs was affected and service delivery was disrupted.

Nepal, with a population of 26.5 million, is one of the poorest countries in the world, with a human development index of 0.548. The country was still recovering from a decade-long political conflict that killed thousands when it was
struck by the major earthquake that affected 4.2 million people. The resulting instability is compounded by ongoing ethnic and political conflicts arising from disagreement on proposals for moving to a federal structure as per the provision in the constitution promulgated in 2015. Besides poverty and political conflict, Nepal is the country that is the 11th-most vulnerable to earthquake and 30th-most vulnerable to seasonal floods. In the last 5 years, excluding the toll due to the earthquake in 2015, 1874 people have died, 655 went missing and 2121 were injured as a result of the many natural as well as human-made disasters that occurred in the country.11

Mental health in Nepal

Epidemiology of mental illness
Nepal is yet to conduct a national-level epidemiological study to estimate the prevalence of mental health problems. Most studies on the prevalence of mental illness have been done in discrete populations and geographical areas. Cross-sectional community-based studies have estimated that 27.5%12 to 33.7%13 of adults met the threshold for depression (Beck Depression Inventory), with a prevalence of 22.9%12 to 27.7%13 for anxiety (Beck Anxiety Inventory) and 9.6% for PTSD.12 The prevalence was higher among women and older age categories,13 and following armed conflict, as shown in longitudinal follow-up.14 However, the prevalence was found to be much higher in former child soldiers (53.2% crossed the cutoff score for depression, 46.1% were diagnosed with anxiety, 55.3% with PTSD, 39.0% with psychological difficulties and 62.4% with functional impairment);15 individuals who were internally displaced during the 1996–2006 Maoist insurgency (more than 50% of the subjects had symptoms of PTSD, and almost 80% had symptoms of anxiety and depression);16 refugees from Bhutan who had experienced torture (lifetime prevalence of PTSD 73.7%, persistent somatoform pain disorder 56.2%, affective disorder 35.6%, generalized anxiety disorder 20.6%, specific phobias 23.2%, dissociative disorder 19.4%, any psychiatric disorder 88.3%);17 and refugees from Bhutan who had not experienced torture (lifetime prevalence of PTSD 14.5%, persistent somatoform pain disorder 28.8%, affective disorder 15.6%, generalized anxiety disorder 12.5%, specific phobias 28.6%, dissociative disorder 4.6%, any psychiatric disorder 56.1%).17 The prevalence of current alcohol drinkers in Nepal reported in 2013 (i.e. had consumed a drink containing alcohol in the previous 30 days) was 17.4% (men 28%, women 7.1%).18

Policy related to mental health
Nepal developed a mental health policy in 1996 but implementation of the policy framework has yet to begin.19 Mental illness has been included under the disability act, to ensure disability benefits for those affected. Mental health has been prioritized in the Ministry of Health’s Multisectoral action plan for prevention and control of non communicable diseases (2014–2020).20 Despite these policies, mental health and psychosocial support (MHPSS) has not been adequately addressed in the Health sector emergency preparedness and disaster response plan.21,22 The absence of a long-term mental health strategy or programme, lack of a focal person for mental health under the Ministry of Health, and inadequate budget have resulted in poor implementation of the mental health policy.

Mental health services
Mental health services provided by the government are only hospital based. The community-based services provided by the Patan Mental Hospital, teaching hospitals and nongovernmental organizations are limited to certain places and population groups and hence far too limited to meet the demands.23 Specialist mental health services are only available in major cities and towns. Owing to the difficult terrain and lack of transportation facilities, it typically requires a long journey to reach the specialist health facilities. Other public health facilities do not have adequately trained human resources to provide basic mental health services. This is complicated by the absence of a proper referral mechanism from lower- to higher-level care facilities and vice versa.

Mental health response during previous humanitarian situations
Previous efforts to provide MHPSS services in humanitarian settings in Nepal have largely been considered inadequate and poorly coordinated. The psychosocial rehabilitation support provided to child soldiers, support to families with long-term missing family members, or response to a complex emergency arising as a result of landslides, fires, epidemics and the civil war are some example of such efforts. The MHPSS response during the Koshi River flood in 2008 in eastern Nepal was poorly coordinated.24 There were very few organizations providing psychosocial support and counselling to the survivors and orientation to school teachers and facilitators in child-friendly spaces.24 An attempt was made to address the need for mental health services by training health workers on providing psychosocial support, as there were no mental health services in the temporary camps or in the district hospitals.24 The Inter-Agency Standing Committee (IASC) Guidelines on mental health and psychosocial support in emergency settings25 were translated into Nepali and validated in this language.25,26 The challenges observed while implementing these interventions demonstrated the need to have a focal unit/person for mental health in the Ministry of Health, the need for a stronger MHPSS component in a health-emergency response, and the need for long-term and sustainable development of mental health services as part of the recovery effort to build resilience of the health system. These lessons from previous emergencies had not been fully translated into practice by the time of the 2015 earthquake.

Mental health and psychosocial support response to the 2015 earthquake

Coordination of the health and protection clusters
Immediately after the earthquake, the Government of Nepal declared a state of emergency and the health sector started to respond. The response was coordinated by the Health Emergency Operations Centre (HEOC) of the Ministry of Health, under the overall leadership of the National Emergency Operations Centre. The central hospitals in Kathmandu could absorb the load of patients from Kathmandu and the surrounding districts. The IASC cluster mechanisms were activated at both central and district levels; within the IASC cluster approach, there are defined sectors/areas, each with a designated “cluster lead” for humanitarian emergencies. The nine sectors/areas are: nutrition, health, water/sanitation, ...
emergency shelter, camp management, protection, early recovery, logistics, and emergency telecommunications.

The organizations responsible for coordination of the health and protection clusters at central and district levels, with their associated mental health and psychosocial support subclusters, are outlined in Fig. 1. The health cluster was led by the Ministry of Health and co-led by the World Health Organization (WHO). An estimated 150 international and national emergency medical teams (EMTs) rushed to support the immediate medical response. The deployment and activities of these teams were coordinated by establishment of an EMT Coordination Cell (EMT-CC), supported by the National Health Research Council and WHO, under the delegated authority of the HEOC. Though there were very few international EMTs with a specific focus on MHPSS, at least 20 international EMTs included MHPSS experts, with one team having an especially large MHPSS contingent that provided clinical care initially and subsequently implemented two outreach psychosocial support interventions (Ian Norton, WHO EMT-CC Project, Geneva, Switzerland, personal communication). At a conference on lessons learnt, jointly held by the Ministry of Health and WHO on 21–22 April 2016, in collaboration with all internal and external health response stakeholders, the health response was assessed as quite efficient.

Immediately after the earthquake, many national and international, governmental and nongovernmental organizations mobilized their teams, with the primary intention to restore, promote or maintain the mental health of the people affected by the disaster, acting in collaboration with medical teams and individuals under the leadership of the Ministry of Health. The psychological first aid that was the critical need in the immediate aftermath of the earthquake, especially to families who had lost their loved ones, their homes and physical assets, and individuals who had sustained injuries, was coordinated by the Ministry of Health and the Ministry of Women Children and Social Welfare, which led the protection cluster with responsibility for psychosocial support.

**Leadership and coordination of the mental health response**

Realizing the need for coordination between the mental health and psychosocial support subclusters, and at WHO’s request, the United States Agency for International Development Office of US Foreign Disaster Assistance funded a project to support WHO to undertake this critical function in addition to other interventions. Subsequently, a mental health subcluster was activated under the health cluster, 1 month after the earthquake, to implement the Ministry of Health response according to WHO and IASC guidelines, and to support the government/health cluster through coordination of partners’ interventions on MHPSS. A psychosocial support subcluster was also created under the protection cluster. The coordination was facilitated through regular meetings of the mental health subcluster at central and district levels. The active consultation and involvement of the partners working on MHPSS helped in developing actions and building ownership. Since specialized mental health and general psychosocial support are linked and cannot be separated, a strong working relationship between the mental health subcluster (under the health cluster) and the psychosocial support subcluster (under the protection cluster) was established, to ensure coordination of their activities and facilitate cross-referrals.

*Fig. 1. Coordination of post-earthquake mental health and psychosocial support interventions*

<table>
<thead>
<tr>
<th>Central level</th>
<th>District level</th>
</tr>
</thead>
</table>
| **Health cluster** | Lead: Ministry of Health  
Co-lead: WHO |
| **Protection cluster** | Lead: Ministry of Women, Children and Social Welfare  
Co-lead: UNICEF/UNFPA |
| **Mental health subcluster** | Lead: Ministry of Health  
Co-lead: WHO |
| **Psychosocial support subcluster** | Lead: Ministry of Women, Children and Social Welfare  
Co-lead: UNICEF |
| Coordination meetings attended by coordinators and team leads of partner organizations | Coordination meetings attended by implementation team of same organizations |

At the district level, one of the active partners for MHPSS in the district was designated by the health cluster as coordinator for each MHPSS subcluster, to conduct meetings of the mental health subcluster in the district and coordinate with the health cluster. This coordination of mental health activities was also facilitated by WHO emergency district support officers deployed in all 14 districts to support the district health authorities as co-leads of the health clusters at district level. These officers also helped in verifying rumours related to mental health issues and with assessment and interventions for four outbreaks of mass conversion disorder in earthquake-affected districts.

Information on MHPSS activities that the partners conducted was regularly collected and collated by the MHPSS subcluster coordinators, using “4W” forms (Who is doing What, Where, When), then analysed, mapped, updated and distributed back to the partners and all relevant response stakeholders. This approach was critical in determining the needs and gaps in the field and taking necessary actions to avoid duplication of activities. A section for mental health was created on the humanitarianresponse.info website, where all information and publications related to mental health were posted for easy access.

Assessment of mental health needs after the earthquake
A detailed mixed-methods needs assessment was carried out from August to September 2015, in Kathmandu, Gorkha and Sindhupalchowk districts, three of the most affected areas. Community members were deeply impacted by the collapse of their own and neighbours’ homes, schools and hospitals; the deaths of family and loved ones; and seeing dead bodies. The common mental health problems found on qualitative assessment of 240 community members were fears that an earthquake would occur again, increased anger/aggression, forgetfulness, lack of or too much sleep, numbness/tingling in the limbs, sadness, hopelessness, and alcohol-use problems. In a quantitative survey of 513 community members, the proportions of those with symptom scores indicating depression (34.2%), anxiety (33.8%) and alcohol-use problems (20.4%) were higher than for those with symptoms of PTSD (5.2%). Alarmingly, the prevalence of suicidal ideation was 10.9% in the 4 months following the earthquake. Addressing mental health was thus established as a critical need in the aftermath of the earthquake.

Post-earthquake mental health service delivery
After the earthquake, mental health service was delivered in the form of hospital-based clinical services; mobile health camps; training and supervision of health workers to provide basic mental health service at primary health-care clinics; development of a screening tool to assist health volunteers and educated lay persons in case detection and referral; and provision of psychological first aid, focused community-based psychosocial interventions, school-based psychosocial support, a 24/7 counselling hotline service, and public-awareness activities. The hospital-based specialist clinical mental health services in the disaster-affected districts were provided by the Patan Mental Hospital and psychiatry departments or units of the general hospitals, whereas the district hospitals provided basic mental health service following the training and supervision provided by the Ministry of Health and nongovernmental organizations, with the help of external development partners.

There was some variation in the approach to empowering health workers to provide basic mental health service. One notable approach was training and supervision based on the mhGAP [mental health gap] humanitarian intervention guide (mhGAP-HIG), provided to prescribers and non-prescribers in the districts. Although all medical doctors working in the earthquake-affected districts were trained in mhGAP-HIG, the training provided to paramedics and post-training supervision were continued in only five of the highly affected districts. In these districts, more than 500 health workers (medical doctors and paramedics) were trained, to provide mental health and psychosocial service to more than 4000 people. Additionally, the district health facilities were also supported by specialist medical teams from the Patan Mental Hospital, teaching hospitals and nongovernmental organizations. These teams initially provided regular outpatient service every day, which later was run as weekly or monthly clinics. In addition to providing clinical services, these specialist teams also supervised non-specialist health workers in the district and conducted public-awareness and stigma-reduction activities.

At the same time, many initiatives were taken to provide service in the community, in the form of setting up temporary counselling centres in the districts and in the camps of temporarily displaced people, mobile health camps and outreach clinics, etc. Some nongovernmental organizations provided MHPSS in the affected districts, through deputation of non-specialized mental health workers, such as community psychosocial workers and psychosocial counsellors, under the supervision of professionals. The school-based approach focused on training teachers in improving classroom behavioural management; empowering parents and stakeholders for involvement in school activities; the practice of a positive disciplinary approach; and a student listening unit (school counselling) for a safe and respectful learning environment.

Inspired by previous work by the Transcultural Psychosocial Organization Nepal (TPO), a screening tool for community case detection was approved by the Ministry of Health in Nepal and distributed by MHPSS actors across sectors. This simple screening tool in Nepali language was designed to help lay persons and female community health volunteers in case detection and referral. Besides these, 24-hour hotline counselling services were started, to provide basic counselling and advice to the public. These community-based activities were linked to the hospital-based specialist clinical service, to facilitate referral of complicated cases. A list of hospitals and centres that provided specialized mental health services, along with the contact details of the focal person, was developed and distributed to health-cluster partners. Mass awareness programmes about the mental health consequences of the disaster were conducted through radio and television programmes, interaction programmes in schools, or at the temporary camps.

Human resources for post-earthquake mental health care
There is an acute shortage of mental health professionals in Nepal, with just 110 psychiatrists and 15 clinical psychologists for the entire country. The gap between the need and availability became more pronounced after the disaster, as the demand for the service increased dramatically in the context of an already weak mental health system. Peripheral
and district health facilities do not have trained manpower to deal with mental health problems, so para-professionals supervised by specialists were the mainstay for provision of mental health services. Psychological first-aid training was given to the psychosocial workers, community volunteers and rescue personnel. Different psychosocial workers, existing and newly trained, were deployed specially by nongovernmental organizations to provide basic mental health care and support. The experience on mhGAP-based integration of mental health into primary health-care centres in Nepal helped to generate a prompt decision that a similar approach is possible and would be useful to meet the increased demand even after the disaster. This led to training of primary care doctors and paramedics on the mhGAP-HIG to increase their capacity on delivery of clinical mental health service (see Box 1). In order to strengthen the skills of the specialists (psychiatrists and psychologists), training was organized on eye movement desensitization and reprocessing (EMDR), a form of psychotherapy for trauma-related mental health problems, with technical assistance from Trauma Recovery, USA (United States of America) and the EMDR Association, India.

“Building back better” for mental health during the recovery phase

In spite of their tragic nature and adverse effects on mental health, emergencies provide unparalleled opportunities to improve the lives of large numbers of people through reform of mental health services. Global progress on reform of mental health services would take place more rapidly if, in every crisis, strategic efforts were made to convert short-term interest in addressing the mental health problems related to the crisis into momentum for long-term reform of mental health services. This would benefit not only people’s mental health, but also the functioning and resilience of societies recovering from emergencies. Although the momentum gained during the emergency response to this earthquake has not been fully capitalized, there has been more attention towards mental health service delivery. The heightened attention of policy-makers and health administrators, owing to the “tipping point” of the earthquake, has been utilized strategically to ensure actions on interventions that had already been advocated for a considerable time but were in limbo.

The Ministry of Health is planning to revise the National mental health policy in Nepal and to draft mental health legislation. The organization of mental health services in the districts is being defined, and opportunities to introduce the mhGAP intervention guide as part of undergraduate medical training at different universities in Nepal are being explored. The psychotropic medicines listed in the national essential drug list have been revised and medications with better safety profiles have been added. Nevertheless, a regular and uninterrupted supply of these medicines to health facilities remains a challenge for the Ministry of Health. The mental health chapter of the Standard treatment protocol – a regular publication of the Ministry of Health to guide primary care providers, especially health assistants – is being revised. The revised protocol will include the priority mental health and neurological disorders in Nepal, in addition to those identified by the mhGAP intervention guide. This diagnostic list will also become a reference for the mental health diagnoses to be included in the Ministry of Health’s health management information system in its upcoming review.

Successes and challenges

The MHPSS response to the 2015 Nepal earthquake was largely carried out on an ad-hoc basis, as MHPSS interventions were not adequately addressed and planned comprehensively in the health sector’s contingency plan for emergencies. Nonetheless, the mental health and psychosocial support subclusters were able to add value to the response efforts of the health and protection clusters, by identifying the critical MHPSS needs and facilitating coordination of partners’ work. A multifaceted approach to addressing the needs of the affected populations, following the pyramid structure of the IASC MHPSS guidelines, appeared to be a pragmatic approach. The immediate need for basic services and security was the major concern, as with other disasters. The strong community and family bonding of Nepalese society was the largest source of mental and psychological support, which resulted in strong societal resilience to this traumatic event. However, this perception of supposedly unaided societal resilience is also a source of inaction by policy-makers when it comes to considering, planning, investment in and implementation of long-term MHPSS strategies and interventions.

The system of mental health care practised during the earthquake response has emphasized the critical role of community-based care with a strong focus on engaging the community. The empowerment of lay persons and community health workers in detection of cases and referral was an important contextual intervention. The deployment of psychosocial workers and counsellors to the community has Box 1. Training on the Mental Health Global Action Programme humanitarian intervention guide (mhGAP-HIG) for medical doctors working in earthquake-affected districts

Training on the mhGAP-HIG was organized with the objective to empower primary care doctors to identify and treat common mental health problems after an earthquake. The mhGAP-HIG training was given to most of the doctors (114) working in the district hospitals, primary health-care centres and health posts of the 11 highly affected districts.

This was supported in five districts by training paramedical staff such as health assistants, community medical assistants and female community health volunteers. About 500 health workers (medical doctors and paramedics) in these five districts were given training based on the mhGAP-HIG.

The training, followed by monthly case-conference-based supervision, has been immensely supportive to the health workers. Primary care physicians reported increased competence in diagnosis and management of common mental disorders, as well as identification of suicidal risks and taking the necessary precautions.
been an important source of support to the Ministry of Health from the voluntary and private sectors. The non-specialized support provided by these psychosocial workers, promoting coordination of care between traditional healers and modern health services, was accepted well by the community. However, these low-intensity approaches need to be strengthened with the support of specialist clinical teams for handling complicated cases. This has emphasized the need for close coordination between the mental health and psychosocial support subclusters to strengthen cross-referrals. As these activities were carried out with the help of different stakeholders – government and private, national and international, formal and informal, health and non-health sectors – a strong coordinating mechanism was essential at central level, as well as in the field.

However, there were many challenges. Owing to the lack of a dedicated focal unit/person for mental health at the Ministry of Health, there was some delay in activation of the mental health subcluster and its functioning. The focal person appointed by the Ministry of Health was responsible for several other curative services besides mental health, which resulted in slow and incomplete implementation of the suggestions from stakeholders. There was overcrowding and overlap of the activities by partners at places with easier access, while activity in locations that were difficult to reach was minimal or absent, despite attempts to map and coordinate interventions. This was complicated by the lack of a unified coordination mechanism, as mental health fell under the district public health office, while psychosocial support came under the Women and Child Office. Most of the mental health response was from international and national nongovernmental organizations and the private sector, with varied approaches to achieving similar outcomes. These organizations received substantial funding support from external development partners to implement interventions. The sustainability of these programmes run by nongovernmental organizations is questionable, owing to lack of funding from the government and low capacity of the districts to continue them. Because of time and budget constraints, the needs-assessment survey done by TPO Nepal and the International Medical Corps\textsuperscript{28,29} focused on a small sample size, in only a few districts. A comprehensive needs assessment by the health cluster lead would have provided a better evidence base to effectively plan the response and recovery efforts.

**Lessons learnt and the way forward**

The health-sector response was able to address the priority health issues of injury and disability, continuation of basic health services, and improved disease surveillance and outbreak containment, in an efficient manner.\textsuperscript{34} However, the MHPSS response has highlighted the strengths and weaknesses of the mental health system in Nepal. The lessons learnt from these weaknesses will be important for building the mental health system anew (see Box 2). In order to ensure sustainable nationwide service coverage, a separate unit to coordinate mental health policy, services and research should be established in the Ministry of Health. This unit should spearhead revision and implementation of the national mental health policy; development of the MHPSS component of the health sector’s contingency plan for emergencies; and integration of mental health services in primary and secondary health care. This dedicated unit would also regulate and coordinate the MHPSS-related work of the public and private sectors, community-based organizations and international and national nongovernmental organizations, and scale up the successful community mental health programmes being run by the Patan Mental Hospital, the mental health faculty of the medical teaching institutions, and nongovernmental organizations.

It is equally important to develop a variety of human resources for mental health. Nepal needs more psychiatrists and psychologists, but a new cadre of psychosocial workers to provide a broad range of psychosocial services to individuals, families and communities would also be an important asset. Training for this role can be developed as a short-course diploma to supplement the existing paramedical health workers’ qualifications (nurses, health assistants, auxiliary nurse midwives, social workers, public health undergraduates), with a nationally accredited curriculum. This workforce could be effectively engaged by developing a comprehensive community mental health programme. The recent mhGAP-based mental health programmes should be scaled up nationwide, with local adaptation under the supervision of specialist teams in all the regional and zonal hospitals.

It is also important to consider the sustainable financing of these services – a start could be made by clearly defining the minimum essential package of MHPSS services that needs to be included in the health-insurance pilots being implemented by

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**Box 2. Recommendations for improving mental health service in Nepal**

**Actions to be taken immediately**

- Establish a mental health unit under the Ministry of Health
- Form a central committee to coordinate the mental health and psychosocial activities carried out by the Ministry of Health and line ministries
- Develop and disseminate the MHPSS disaster-preparedness plan
- Establish a strong monitoring and evaluation mechanism to ensure the quality of the intervention provided

**Actions to be taken in the longer term**

- Establish specialist psychiatry treatment units in all regional/zonal hospitals and develop a referral network
- Integrate mental health into primary health-care centres in a phase-wise manner
- Develop a short diploma on mental health and counselling for paramedics, nurses and social workers
- Revise the curriculum of health workers, with more emphasis on mental health
- Run programmes to improve awareness about mental health, reduce stigma about mental disorders and promote mentally healthy lifestyles in the community
the Ministry of Health. In addition, a health-systems approach should be consistently applied in the development of MHPSS services in Nepal, since a resilient and sustainable health system is not only the base for serving the routine MHPSS needs of the community but also the platform from which the surge in services needed in the aftermath of a disaster could be efficiently and effectively managed. Coordinated, enhanced and sustained efforts of all relevant stakeholders are critically needed to ensure that the opportunities and lessons resulting from the MHPSS response to the earthquake are fully exploited and not flitted away.

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Conflict of interest: RS was responsible for the planning, execution and supervision of mental health activities during the recovery period and coordinating health cluster interventions in Gorkha district (the epicentre of the earthquake) during the response. KM was the focal person/co-lead of the mental health subcluster and was responsible for planning and executing interventions during the immediate response and recovery periods. SS carried out specific response and recovery activities and provided technical advice to the Ministry of Health. NA and MHVO coordinated interventions for mental health and psychological support during the response period. RO was responsible for overall coordination of the WHO response to the earthquake.

Authorship: RS and KM were responsible for overall conceptualization of the article and manuscript writing. KM was also responsible for coordination among the co-authors. SS was responsible for writing part of the sections on response, successes and challenges, and lessons learnt. NA, MHVO and RO were responsible for editing and technical guidance on the manuscript. All authors were responsible for proofreading the final manuscript.


References


Challenges and opportunities in suicide prevention in South-East Asia

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Abstract

Suicide is a global public health problem, with over 800 000 people worldwide dying by suicide in 2012, according to the World Health Organization (WHO). The WHO South-East Asia Region is especially affected, with 39% of global suicides occurring in the 11 countries in this region. Women are a particularly vulnerable population, for a variety of social and cultural reasons. In India specifically, deaths by suicide for women peak in the age range 15–29 years. There is sufficient evidence to show that reduction of easy access to means of suicide is an effective prevention strategy. A common method of suicide in the region is by ingestion of pesticides. Strategies that have targeted limiting access to pesticides as a means of preventing suicide, such as the use of central storage and locked boxes, have shown promising results. Given the limited human and economic resources in these countries, it is essential to involve all stakeholders, including health services, voluntary and community organizations, teachers, social workers, traditional healers and other gatekeepers, in suicide prevention. A multisectoral approach, specifically targeting women and reducing easy access to pesticides, should be the way forward to reducing suicides in this region. In addition, more research is needed, to identify cost-effective and sustainable strategies.

Keywords: pesticides, South-East Asia Region, suicide, suicide prevention, women

Background

The World Health Organization (WHO) 2014 report, Preventing suicide: a global imperative, states that over 800 000 persons worldwide lost their lives by suicide in 2012. The global age-standardized suicide rate per 100 000 population was estimated as 11.4, with rates of 15.0 for males and 8.0 for females. Countries from the WHO South-East Asia Region, with an estimated 314 000 suicides in 2012, accounted for 39% of all global suicides. This region consists of 11 low- and middle-income countries, which constitute 26% of the global population. India accounted for 258 000 (82%) of the suicides in the countries of the South-East Asia Region in 2012, and so the characteristics of suicide in India shape the pattern seen across the region. The 2012 suicide rate in the region was 17.7 per 100 000 population, the male-to-female sex ratio was 1.6, and suicide accounted for 1.8% of all deaths, making it the 11th most important cause of death in the region. In India, the age-by-sex pattern of suicide showed different rates by age. Among males, the rates rose rapidly after the age of 15 years, remained stable from 30 to 70 years, and then increased gradually, while in females there was a large peak of 36.1 per 100 000 deaths by suicide in the age range 15–29 years, lower rates in the age range 30–49 years, and then gradually increasing rates after 50 years.

From 2000 to 2012, the absolute number of suicides in the region increased by 10%; however, the regional rate per 100 000 decreased by 11% for the same period. In 2012, the national suicide rates in the region, per 100 000 population, ranged from the lowest value of 4.3 in Indonesia (3.7 in males and 4.9 in females) to the highest value of 38.5, reported from the Democratic People’s Republic of Korea (45.4 in males and 35.1 in females). Most countries of the region do not have a comprehensive vital registration system; thus, these data are best estimates and the actual figures may well be higher.

Women as a vulnerable group

Women in low- and middle-income countries are especially vulnerable to suicide; the male-to-female ratio for completed suicides is much narrower in these countries, at 1.6, compared to the value of 3.5 in high-income countries. An estimated 124 282 women died by suicide in the countries of the WHO South-East Asia Region in 2012, meaning that a little less than half of global suicides in women occurred in this region. Compared to women from low- and middle-income countries of all other WHO regions, women in countries of South-East Asia have higher suicide rates. The suicide rate (per 100 000) for women from the South-East Asia Region was 11.9, while the next highest was 5.6 from the low- and middle-income countries of the European Region. This higher rate was also maintained across all age ranges (see Table 1).

In several countries of the region, notably Bangladesh, India and Indonesia, the male-to-female ratio for suicide among younger people (below 30 years of age) showed that the rates were higher for women. Maldives and Nepal also showed a very small gap with respect to the sex ratio (see Table 2). Several social and cultural factors make women in the WHO South-East Asia Region vulnerable to suicide. These include...
Another sociocultural practice contributing to suicides among women in countries such as India, where the practice of dowry is still in existence, is the pressure on a young bride to bring a large dowry. Failure to do so often results in physical and emotional abuse, which can lead to suicide, especially by self-immolation. Self-immolation, which is seen almost exclusively in low- and middle-income countries, has emerged as a major cause of death and is the only method of suicide used more by women than men. In India, 64% of self-immolation is by women, while in Sri Lanka the proportion is 79%. Pressure on women to bear children soon after marriage, failure to become pregnant, and infertility carry severe social stigma, leading some women to resort to suicide. In a 2014 systematic review and meta-analysis, the pooled prevalence of pregnancy-related deaths in the WHO South-East Asia Region attributed to suicide was 2.19%.

Domestic violence is fairly common and its practice is, to a large extent, socially and culturally condoned in these countries. In a population-based study on domestic violence, 9938 women were studied in different parts of India and across sections of society; an estimated 40% experienced domestic violence. In an international survey of women in 2001, 64% of the women surveyed in India who had experienced physical violence by an intimate partner expressed suicidal ideation. In a case–control verbal-autopsy study in Bangalore, India, domestic violence was a major risk factor for suicide. However, relatively little is known about domestic violence as a risk factor for suicide and it is an important area for further research.

### Methods of suicide

The most common method of suicide in countries of the WHO South-East Asia Region is ingestion of pesticides, including herbicides and rodenticides. Self-immolation is prevalent, particularly among women. Hanging is also frequently used. A recent systematic review revealed that around 30% (27–37%) of suicides globally are due to pesticide poisoning. Pesticide suicides are a major problem in countries of the region, as the majority of the population lives in rural agrarian societies and pesticides are easily available and accessible. Pesticides are easily procured in the market, and are usually stored in close proximity to where people live, in either farms or homes. The situation is further exacerbated by the limited access to medical facilities for appropriate care in rural areas.

### Table 1. Suicide rates of women in low- and middle-income countries of the various World Health Organization regions, by age, 2012

<table>
<thead>
<tr>
<th>World Health Organization region</th>
<th>Total number of suicides</th>
<th>Average suicide rates for women (per 100 000)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>All ages</td>
</tr>
<tr>
<td>African Region</td>
<td>17 000</td>
<td>3.7</td>
</tr>
<tr>
<td>Region of the Americas</td>
<td>7949</td>
<td>4.2</td>
</tr>
<tr>
<td>South-East Asia Region</td>
<td>124 282</td>
<td>11.9</td>
</tr>
<tr>
<td>European Region</td>
<td>7474</td>
<td>5.6</td>
</tr>
<tr>
<td>Eastern Mediterranean Region</td>
<td>12 516</td>
<td>3.3</td>
</tr>
<tr>
<td>Western Pacific Region</td>
<td>70 344</td>
<td>4.2</td>
</tr>
<tr>
<td>Total</td>
<td>239 565</td>
<td>—</td>
</tr>
<tr>
<td>Average</td>
<td>—</td>
<td>5.5</td>
</tr>
</tbody>
</table>


### Table 2. Male-to-female suicide ratio in the World Health Organization South-East Asia Region by age, 2012

<table>
<thead>
<tr>
<th>Country and age (years)</th>
<th>Male-to-female ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td></td>
</tr>
<tr>
<td>&lt;30</td>
<td>0.52</td>
</tr>
<tr>
<td>&gt;30</td>
<td>0.82</td>
</tr>
<tr>
<td>Bhutan</td>
<td></td>
</tr>
<tr>
<td>&lt;30</td>
<td>1.41</td>
</tr>
<tr>
<td>&gt;30</td>
<td>2.47</td>
</tr>
<tr>
<td>India</td>
<td></td>
</tr>
<tr>
<td>&lt;30</td>
<td>0.94</td>
</tr>
<tr>
<td>&gt;30</td>
<td>2.52</td>
</tr>
<tr>
<td>Indonesia</td>
<td></td>
</tr>
<tr>
<td>&lt;30</td>
<td>0.95</td>
</tr>
<tr>
<td>&gt;30</td>
<td>0.63</td>
</tr>
<tr>
<td>Maldives</td>
<td></td>
</tr>
<tr>
<td>&lt;30</td>
<td>1.03</td>
</tr>
<tr>
<td>&gt;30</td>
<td>1.27</td>
</tr>
<tr>
<td>Myanmar</td>
<td></td>
</tr>
<tr>
<td>&lt;30</td>
<td>1.65</td>
</tr>
<tr>
<td>&gt;30</td>
<td>1.64</td>
</tr>
<tr>
<td>Nepal</td>
<td></td>
</tr>
<tr>
<td>&lt;30</td>
<td>1.02</td>
</tr>
<tr>
<td>&gt;30</td>
<td>1.84</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td></td>
</tr>
<tr>
<td>&lt;30</td>
<td>3.03</td>
</tr>
<tr>
<td>&gt;30</td>
<td>2.92</td>
</tr>
<tr>
<td>Thailand</td>
<td></td>
</tr>
<tr>
<td>&lt;30</td>
<td>3.07</td>
</tr>
<tr>
<td>&gt;30</td>
<td>2.12</td>
</tr>
<tr>
<td>Timor-Leste</td>
<td></td>
</tr>
<tr>
<td>&lt;30</td>
<td>1.46</td>
</tr>
<tr>
<td>&gt;30</td>
<td>1.06</td>
</tr>
</tbody>
</table>

Risk factors for suicide

Alcohol plays a significant role in suicide in the region. Social drinking is not a way of life in the majority of these countries. Studies have shown that around 30–50% of males were under the influence of alcohol at the time of suicide.9,11 Further, many wives have been driven to suicide by their husbands’ harmful use of alcohol.12 It has become increasingly evident that alcohol and drugs are important preventable risk factors for suicide.

Inappropriate media reporting practices can sensationalize and glamorize suicide and increase the risk of “copycat” suicides (imitation of suicides) among vulnerable young people. Promotion of responsible reporting of suicide in the media is integral to any prevention strategy.1 Important aspects of responsible reporting include avoiding detailed descriptions of suicidal acts, avoiding sensationalism and glamorization, using responsible language, minimizing the prominence and duration of suicide reports, avoiding oversimplifications, educating the public about suicide and available treatments, and providing information on where to seek help.1 Unfortunately, these guidelines are often not followed by the countries in this region.

Suicide legislation in the South-East Asia Region

Attempted suicide remains a crime in most of the countries in the WHO South-East Asia Region, with only Sri Lanka and Thailand not considering it a criminal offence requiring police notification. Sri Lanka decriminalized suicide in 1996 and suicide rates in the country have since declined, indicating that decriminalization has not had an adverse effect. Bangladesh, Bhutan, India and Maldives have penal codes and specific laws on suicide. In India, a new mental health bill, which decriminalizes suicide, has been tabled in parliament and is currently awaiting clearance by the lower house. Some of the challenges that criminalization of suicide pose are:

- emergency treatment for those who attempt suicide is not readily accessible, as they are referred by local hospitals and doctors to tertiary centres for medico-legal reasons, resulting in delay and loss of life;
- those who attempt suicide are already distressed and subsequent police interrogation leads to increased distress, shame and guilt, which can lead to further suicide attempts;
- for a family in turmoil interrogation leads to increased distress;
- resultant gross underreporting of attempted suicides and categorizing some as accidental poisoning means that both official data and the need for mental health support and care are underestimated.

Criminalization is also a major hindrance to collecting accurate data and planning appropriate interventions. Changes in laws and associated governmental policies will pave way for better data, interventions and support for distressed and suicidal people.

Suicide-prevention efforts in the South-East Asia Region

Suicide has traditionally been viewed as a mental health issue that is best addressed through clinical interventions, such as treating depression. However, in low- and middle-income countries, the role of mental disorders in suicide is not as significant as it is in high-income countries.13 The prevailing view is now that suicide is a public health issue, and as such it is best addressed by social and public health programmes rather than solely within the mental health framework.15 Other factors in support of a public health approach include the fact that social reasons for suicide are more readily acceptable than mental health reasons, and countries in this region have a limited number of qualified mental health professionals. The majority of these countries have not developed a national suicide-prevention strategy, with the exception of Bhutan, Sri Lanka and Thailand.

Considering the enormity of the problem, it is imperative that these countries develop low-cost interventions that can be delivered by lay mental health professionals in the community. The dearth of mental health services has been the catalyst for the emergence of nongovernmental organizations for mental health in the region. Over 80% of countries in the South-East Asia Region have nongovernmental organizations working in the field of mental health.11

The role of nongovernmental organizations

As the governments in the South-East Asia Region have limited resources to address the issue of suicide, nongovernmental organizations, in the form of suicide-prevention centres staffed mainly by volunteers, have stepped in and the majority offer their services free of charge. The primary goal of these prevention centres is to provide emotional support to those who are suicidal, through befriending and counselling, in person or by telephone. In many countries, they are the premier nongovernmental organizations in suicide prevention and offer a whole range of services, from awareness programmes to delivering interventions. These crisis centres often act as the entry point into the health system for people with psychological problems, with the volunteers being trained to identify those with mental disorders and provide appropriate referrals. Although many innovative programmes for raising awareness and increasing help-seeking behaviour have been developed to prevent suicide, the majority have not been evaluated.14

Suicide-prevention strategies: pesticide suicides

Research has consistently demonstrated that restricting access to highly lethal means of suicide is an effective strategy for reducing the number of suicides. In Sri Lanka, for example, where the most common method of suicide has been ingestion of pesticides, suicide rates fell significantly after the government banned the sale of certain toxic pesticides.15 Another effort has been the provision of locked boxes for the storage of pesticides in farming households. Such initiatives are feasible and appreciated by the users of the storage boxes.16 However, Konradsen and colleagues reported that, at times, these boxes were kept unlocked at home, rather than at the farms.17 They cautioned that this could lead to increased risk, especially among those acting impulsively due to easy access. A major randomized trial on locked boxes is under way in Sri Lanka.

Vijayakumar and colleagues examined the feasibility and acceptability of a centralized pesticide-storage facility (supported by the Sneha Suicide Prevention Centre in India and
WHO), as a possible intervention to reduce pesticide-related suicides in a district in Tamil Nadu state, in southern India.\(^\text{18}\) The study involved constructing a community storage facility where all farmers could store their pesticides. Two centralized storage facilities were constructed in two villages, with local involvement, and storage boxes (similar to a bank locker) were constructed. Farmers could access their pesticide-storage boxes with the key to their own locker, and a duplicate key was kept with the manager of the central storage facility. There was a significant reduction in pesticide suicides in the intervention villages compared to the control villages.

**Future directions**

Suicide is a global health problem and reduction of suicide should be on the agenda of all countries in the WHO South-East Asia Region, especially since it has been identified by the United Nations as one of the indicators of the Sustainable Development Goals.\(^\text{19}\) All the countries in the region should develop a comprehensive national suicide-prevention strategy and also allocate adequate resources for it.

Establishing a good monitoring and reporting system that facilitates collection of reliable and timely information on the prevalence, demographic patterns, and methods employed in both suicides and suicide attempts is essential. Reliable data are also necessary, to monitor the effectiveness of the planned intervention strategies for different target groups.

It is essential to involve and evaluate the role of gatekeepers in the community, such as teachers, social workers, crisis-line volunteers, youth leaders, family members, caregivers, police and prison staff, and religious leaders, to identify, support and provide appropriate referral to suicidal persons. Identification of specific psychological and social stressors that lead to increased risk in youth and women is essential. Community-based intervention strategies that restrict access to pesticides, decrease the availability and consumption of alcohol, strengthen interpersonal problem-solving skills, improve help-seeking behaviour, and tackle issues such as intergenerational conflicts need to be implemented and evaluated. In parallel, early identification and treatment of mental disorders is essential.

**Conclusion**

Suicide is a global public health problem and, as South-East Asia accounts for 39% of global suicides, the region needs to take urgent action. Women form a particularly vulnerable population in this region, for a variety of social and cultural reasons. There is sufficient evidence to show that limiting access to pesticides has the potential to reduce suicide in these countries. Using a multisectoral approach specifically targeting women and reducing easy access to pesticides will go a long way towards reducing suicides in this region. More research is needed to identify strategies that are feasible, acceptable and effective.

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**References**


Perspective

Services for depression and suicide in Thailand

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Abstract

Depression, together with suicide is an important contributor to the burden of disease in Thailand. Until recently, depression has been significantly under-recognized in the country. The lack of response to this health challenge has been compounded by a low level of access to standard care, constraints on mental health personnel and inadequate dissemination of knowledge in caring for people with these disorders. In the past decade, significant work has been undertaken to establish a new evidence-based surveillance and care system for depression and suicide in Thailand that operates at all levels of health-care provision nationwide. The main components of the integrated system are: (i) community-level screening for depression in at-risk groups, using a two-question tool; (ii) assessment of the severity of depression using a nine-question scale; (iii) diagnosis and treatment by general practitioners; (iv) psychosocial care provided by psychiatric nurses; (v) continuous care for relapse and suicide prevention; and (vi) promotion of mental well-being and prevention of depression in at-risk populations. Factors such as appropriate financial mechanisms, capacity-building programmes for health-care workers, and robust treatment guidelines have contributed to the success and sustainability of this comprehensive surveillance and care system. By 2016, more than 14 million people at risk had been screened for depression and received mental health education; more than 1.7 million people with depression had received psychosocial interventions; 0.7 million diagnosed patients had received antidepressants; and 0.8 million were being followed up for relapse and suicide prevention. The application of this surveillance and care system has led to an enormous increase in the accessibility of standard care for people with depressive disorders, from 5.1% of those with depressive disorders in 2009 to 48.5% in 2016.

Keywords: depression, mental health services, suicide, surveillance, Thailand

Background

Thailand is a country in South-East Asia, with an approximate geographical area of 514 000 km². Of the population of more than 67 million, 48% live in urban areas, 18% are younger than 15 years and 15% are older than 60 years. Life expectancy at birth is 75 years. By World Bank criteria, Thailand is an upper-middle-income country.¹ A decade ago, depression was, and still is, a prevalent mental disorder in Thailand that was nevertheless under-recognized, not only by those affected but also by the public and by the health-care profession.

In the 2008 nationally representative household survey of mental disorders by the Department of Mental Health, of more than 20 000 noninstitutionalized people aged over 15 years, the prevalence of current major depressive episode was 2.4%, with a further 0.3% reporting dysthymia. These data indicated that an estimated 1.5 million people were living with depression at the time of the survey, of whom nearly two in three were women.² Regionally, Bangkok had the highest prevalence of people with a current major depressive episode, at 4.1%, followed by the northeastern region at 2.5%, the central (excluding Bangkok) and northern regions at 2% each, and the southern region at 1.9%.³ Additional analyses of the 2008 household survey data found that 58.5% of individuals with symptoms of depression were concurrently assessed to be at risk of suicide.⁴ An evaluation of the magnitude and pattern of disease burden in Thailand estimated that, in 2004, depression was the country’s fourth-highest overall cause of disability-adjusted life-years (DALYs) lost in women and the tenth-highest in men.⁵ In addition, according to data from the Department of Mental Health, the rate of deaths by suicide in Thailand in 2008 was 5.98 per 100 000 population.⁶

An assessment of the mental health system in Thailand in 2005, using the World Health Organization Assessment Instrument for Mental Health Systems (WHO-AIMS), noted there were few psychiatrists and psychosocial staff, with just 7.29 mental health personnel for every 100 000 population, and a disproportionate number of these professionals were concentrated in the major cities.⁷ Although general practitioners played an important role in the care of patients with psychiatric disorders, they had limited training and interaction with mental health services.⁷ A nationwide survey of general practitioners indicated that time constraints and a lack of experience with, and knowledge about, psychiatric disorders were resulting in extensive underdetection and undertreatment of depression.⁸ These gaps in detection were compounded by factors including a lack of newer antidepressants at the community level; poor public understanding of the disorder; and stigmatization of mental illness and its treatment. As a result, only a very low percentage of people with depression were receiving timely and appropriate care.
This paper describes the work done during the past decade that has resulted in establishment of a new comprehensive service for depression and suicide in Thailand.

Development of a system of services for depression and suicide

Conceptual framework
The new system was based on five primary concepts: (i) to improve awareness of depression and depressive disorders and to reduce associated stigma through education; (ii) to reduce the progression to depressive illness in those at risk; (iii) to reduce the length of depressive episodes, with early, appropriate and effective interventions; (iv) to prevent suicide, an important comorbidity of major depressive disorder; and (v) to prevent relapse and recurrence of depression. It was recognized at the outset that the new system needed to be tailored to the needs of the Thai population, since cultural norms greatly affect how depression is expressed and perceived. Moreover, the system had to be assimilated into the existing health-care system, to form a network linking community health centres, community hospitals, provincial hospitals and psychiatric hospitals. It was also realized that, to be successful, the new system would have to harness the potential of the largest task force in health care in Thailand – the community health volunteers.

Research and development
Between 2006 and 2008, the Thai Excellence Center for Depressive Disorders, under the Department of Mental Health, received 50.2 million baht (US$ 1.43 million) from the central government, to develop an integrated research programme to inform development of the system of services for the detection and treatment of depression. The programme consisted of three areas of research: the epidemiology of depressive disorders; the development of technology for prevention and a surveillance system for depressive disorders; and the development and innovation of treatments for depression.

First, significant risk factors for major depressive disorder in Thailand were identified. Secondly, cultural factors relevant to major depressive disorder were analysed. Thirdly, screening and assessment instruments were developed: (i) a tool to screen for depressive disorders using only two questions (2Q screen); (ii) a nine-question assessment tool for depression severity (9Q scale); and (iii) an eight-question tool for the assessment of suicidality severity (8Q scale). Development and validation of the 2Q, 9Q and 8Q tools was done in a pilot study for the depression surveillance and care system in the northeastern province of Yasothon in 2006. The 2Q and 9Q tools were developed from DSM-IV-TR; the 8Q tool was developed from the suicidality module of Mini International Neuropsychiatric Interview (Thai version 5.0.0, revised 2007). Subsequent to development and validation in the northeastern dialect for the pilot study, content validation was done for the 2Q, 9Q and 8Q tools, in the central Thai and southern dialects.

The surveillance and care system for depressive disorders
The surveillance and care system designed involves: (i) screening and identification of people with depression; (ii) assessment of the severity of depression and suicidality; (iii) accurate diagnosis; (iv) treatment; and (v) follow-up of patients for relapse and suicide prevention, each tailored to the level of the health-care provider targeted.

This system begins with identification of people at risk of having depression, using the 2Q screen. This is administered by community health volunteers, at community hospitals, and at various clinics in hospitals, e.g. diabetes clinics, antenatal care clinics and psychiatric clinics. At-risk groups selected for screening are: (i) those with chronic noncommunicable diseases; (ii) elderly people aged 60 years and older; (iii) women during pregnancy and in the postnatal period; (iv) those with alcohol or substance dependence; (v) those with overt depressive symptoms; (vi) those with chronic medically unexplained physical symptoms; and (vii) those who have experienced an acute significant bereavement. The results of the screening are then disclosed to the individual, together with education about depression.

Assessment of severity and suicidality
Those who screen positive with the 2Q screen are advised to go to the community hospital, if they are not there already, for further assessment and diagnosis. Clinical severity is assessed using the 9Q scale, as mild, moderate or severe depression, so that treatments can be dispensed accordingly. Suicidality is also assessed using the 8Q scale. These steps are necessary for a system aimed at early detection and intervention, especially in those with severe depressive symptoms and suicidality.

Treatment
If the screener is not a physician, individuals who screen positive with the 2Q screen and are assessed by the 9Q scale to have mild or more serious depression are referred to a physician, in order for an accurate diagnosis to be made and to rule out other conditions such as bipolar affective disorder, substance-related disorder or other medical conditions mimicking depression. Once a diagnosis is confirmed, there are guidelines for treatments tailored to the severity of depression. For people with mild depression, psychological education and counselling is usually sufficient, whereas those with moderate or severe depression will require a prescription for antidepressant medication from their physician or psychiatrist, in addition to psychological interventions.

A clinical practice guideline on major depressive disorder, for use by general practitioners, was developed in parallel with the surveillance and care system. This provides clear guidance and algorithms on factors such as choice of antidepressant medication, the duration of treatment and the necessary follow-up plan. It was designed such that any general practitioner working in any part of the health-care system can easily follow the recommendations. For those that require more intensive treatment, referral to a psychiatric hospital equipped with multidisciplinary teams that can further assess and provide specialist therapies, such as advanced pharmacotherapy, modified electroconvulsive therapy, cognitive behavioural therapy, or reminiscence therapy, is recommended. Modified electroconvulsive therapy (i.e. under anaesthesia) is indicated only as a last option for severe major depressive disorder that has failed to respond to all other forms of pharmacological and psychological intervention.
Intervention for people with suicidality
For individuals who screen positive with the 8Q scale, provision is also made in the clinical practice guideline\(^\text{14}\) to treat them according to the severity of their symptoms. Those with “mild suicidality” are further investigated for other comorbidities and provided with psychological counselling and follow-up care. Those with “moderate suicidality” are actively assessed as to whether they have the necessary support system for the immediate prevention of suicide, in order to determine the requirement for admission. For patients with moderate suicidality without any support system, the clinical practice guideline recommends admission for observation.\(^\text{14}\) For those with “high suicidality”, admission for inpatient care with intensive monitoring and psychosocial intervention is mandatory, with possible referral to a psychiatric hospital. For everyone who is assessed as positive for suicidality by the 8Q scale, even after treatment, monthly follow-up is done until suicidality is deemed clinically negligible.

Relapse and suicide prevention
This system also includes relapse and prevention monitoring for those whose depressive symptoms are in remission. After the active psychological and pharmacological therapies at a hospital, information is transferred to the community health centres, which, in turn, send out personnel for home visits to conduct monthly relapse and suicide surveillance. The community team then continues to monitor these individuals for a further 6–12 months, using the 9Q and 8Q scales, until there is “no depression” on the 9Q scale for 6 consecutive months, at which point tapering and stopping medication may be considered. If a relapse is detected, the person will be reassessed fully for the appropriate treatments, again using the clinical practice guideline.\(^\text{14}\)

Education and awareness building
For education on and awareness of depression, the programme has been able to enhance public knowledge through a number of events and media, e.g. radio spots, songs, documentaries, short movies and social media postings. These have been produced in regional dialects, as well as in central Thai. Pamphlets and booklets illuminating topics related to depression have also been distributed to schools and the general public.

Implementation and adaptation of the surveillance and care system for depressive disorders
Implementation of this system began in 2009, after the conclusion of the research and development phase, and it was implemented nationally in 2010 as the “Surveillance and care system for depressive disorders”. It was then also integrated into the roadmap for the 12th National Health Development Plan,\(^\text{15}\) by the Ministry of Public Health, enabling funding to be made to sustain the surveillance.

Key lessons learnt during the past decade (2006–2016) are that not only is evidence from research necessary, but other important factors are also required to make such a programme successful. First, the programme should be policy driven; advocacy resulted in improved accessibility to care for people with depression and reduced suicide rates becoming key performance indicators of mental health care for every area health board. Secondly, programmes should be incentivized. For example, in 2010–2011, the National Health Security Office offered financial backing to any hospital that wanted to offer depression screening and psychosocial interventions for elderly people with chronic conditions. As a result, many specialized clinics were established. Thirdly, training for health-care providers is essential; this has been achieved by training community health volunteers to use the questionnaires; training nurses and personnel at primary health-care units to assess and give basic interventions; and teaching general practitioners to recognize, diagnose and treat major depressive disorder. Fourthly, training should be continuous, through regular supervision and coaching. Lastly, development of a robust data and information system is also crucial. The Thai Excellence Center for Depressive Disorder at Prasrimahabhodi Psychiatric Hospital, through its website,\(^\text{16}\) maintains all the matrices relating to care for major depressive disorder in Thailand, and has dedicated personnel to oversee and manage the system. This acts as a clearing house for all data and a hub for all relevant research and documentation, which is accessible to all stakeholders. Regular monthly updates of data-surveillance summaries ensure that depression and suicide in the population can be monitored in almost real time.

Results to date
Since 2009, services for depression and suicide in Thailand have been totally revolutionized, leading to an increase in the accessibility of mental health care and education for everyone. By 2012, more than 137 000 community health volunteers, 21 000 health professional and 1900 general practitioners had received training.\(^\text{3}\) In 2008, prior to the introduction of the new system, only an estimated 3.7% of people with depressive disorders had access to mental health services. With the expansion of the system, access has grown significantly, reaching 48.5% in 2016 (see Fig. 1).

Table 1 summarizes the data on access to various components of the surveillance and care system since 2009. By 2016, 14.2 million people had been screened and received mental health education about depression, 1.7 million had been screened with the 9Q scale and received psychosocial intervention for their depressive symptoms, 0.7 million diagnosed patients had received pharmacotherapy and/or psychological therapy, and a further 0.8 million were being followed up for relapse and suicide prevention. However, each year, 1–2 people in the surveillance and care system were able to commit suicide, and ways to combat this are being developed. Nevertheless, there has been an ever-increasing access to care for people with major and other depressive disorders since the inception of this surveillance and care system.

Conclusion
Depression is an important cause of loss of healthy years (DALYs) and a major mental health problem in the Thai population. The initial integrated research programme, “Health-care system development for intervention and reduction of the burden of depression”, led to a comprehensive surveillance and care system that comprises several simple steps resulting...
in a 9.5-fold increase in the accessibility of care for people with depressive disorders, from 5.1% in 2009 to 48.5% in 2016. This system required multiple supporting coordination systems, such as a data and information system, financial support system, human development system, supervision and monitoring system and, importantly, policy recognition at all levels from the area health board and the Department of Mental Health, and nationally from the Ministry of Public Health and the government.

The surveillance and care system for depressive disorders has helped health personnel at all levels to appreciate the importance of depression, making this an area in which the Thai health system can make further improvements. There are, however, some caveats going forward. Bangkok, for example, has high rates of inward and outward migration and a system for health-care delivery that differs markedly from the rest of the country; these factors have hindered a satisfactory increase in access to care for people with depression and in suicide prevention. This alone shows that there remain tasks and challenges facing the surveillance and care system that need to be overcome to make it an even more successful and integral part of universal mental health care for every person in Thailand.

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Conflict of interest: The authors are working or have worked with the Thai Excellence Center for Depressive Disorder described in this paper.

References


Table 1. Number of people accessing each type of care from 2009 to 2016

<table>
<thead>
<tr>
<th>Service</th>
<th>Cumulative population (number of people)</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screening and mental health education</td>
<td></td>
<td>2,878,921</td>
<td>4,757,843</td>
<td>7,047,760</td>
<td>9,333,264</td>
<td>10,680,943</td>
<td>12,176,275</td>
<td>13,150,377</td>
<td>14,202,407</td>
</tr>
<tr>
<td>Psychosocial care for people with depression</td>
<td></td>
<td>342,591</td>
<td>445,379</td>
<td>651,606</td>
<td>1,151,290</td>
<td>1,317,531</td>
<td>1,501,985</td>
<td>1,622,144</td>
<td>1,703,251</td>
</tr>
<tr>
<td>Suicide prevention for people with depression and suicidality</td>
<td></td>
<td>302,624</td>
<td>400,310</td>
<td>447,262</td>
<td>508,942</td>
<td>582,431</td>
<td>663,971</td>
<td>717,089</td>
<td>752,943</td>
</tr>
<tr>
<td>Pharmacotherapy, psychotherapy and relapse prevention for patients with depressive disorders</td>
<td></td>
<td>70,973</td>
<td>118,540</td>
<td>258,865</td>
<td>400,352</td>
<td>467,917</td>
<td>516,000</td>
<td>626,322</td>
<td>694,334</td>
</tr>
</tbody>
</table>

Fig. 1. Proportion of people diagnosed with depressive disorders accessing services, 2009 to 2016

Authorship: TK was the lead author. The others were all co-authors of the manuscript; SSup was also responsible for adaptation and translation; KK, SP and SSuk for data preparation; and JL for adaptation and data preparation.


Policy and governance to address depression and suicide in Bhutan: the national suicide-prevention strategy

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Abstract

Suicide and mental disorders are a growing public health issue in Bhutan, due in part to a rapidly transitioning society. The burden of suicide has been recognized by the Royal Government of Bhutan and, as a result, it introduced the country’s first ever national suicide-prevention plan in 2015. The 3-year action plan takes a holistic approach to making suicide-prevention services a top social priority, through strengthening suicide-prevention policies, promoting socially protective measures, mitigating risk factors and reaching out to individuals who are at risk of suicide or affected by incidents of suicide. This article documents Bhutan’s policy and governance for addressing depression and suicide within the context of its national suicide-prevention strategy, examines progress and highlights lessons for future directions in suicide prevention. Since the endorsement of the 3-year action plan by the prime minister’s cabinet, the implementation of suicide-prevention measures has been accelerated through a high-level national steering committee. Activities include suicide-prevention actions by sectors such as health, education, monastic communities and police; building capacity of gatekeepers; and improving the suicide information system to inform policies and decision-making. Suicide-prevention activities have become the responsibility of local governments, paving the way for suicide prevention as an integral mandate across sectors and at grass-root levels in the Kingdom of Bhutan.

Keywords: Bhutan, depression, mental health, national strategy, prevention, suicide

Mental disorders and suicide in Bhutan

The Kingdom of Bhutan is nested in the eastern Himalayas. The country’s population of 0.78 million,1 traditionally an agrarian society, is experiencing a rapid socioeconomic transformation. The nation is on a fast track towards becoming a market-driven competitive consumeristic society.2 With rapid urbanization, rural–urban migration is a concern, as an increasing proportion of the country’s elderly population is left behind in the villages.3 In urban settings, the systems for extended family support are becoming less affordable, and social norms and traditional values are rapidly evolving towards the nuclear family. Mental health becomes a pertinent subject in the context of a transitioning society struggling to strike a delicate balance between the forces of modernization and tradition.

Mental disorders and suicide constitute a significant disease burden in Bhutan.4 Although population-level data on mental disorders are scant, health-facility morbidity reports indicate that, from 2011 to 2015, there was an increase in the total number of documented cases of mental health disorders, from 2878 cases to 7004, of which 45% and 31% were anxiety and depression respectively.5 Suicide attempts are associated with depression6 and other mental disorders.7 In interviews among the next of kin of people who died by suicide in Bhutan, many reported the deceased’s feelings of hopelessness, a characteristic that, although found in a range of situations, can occur in individuals with depression.8 Although the suicide rate in Bhutan (10 per 100 000 population per year) is consistent with global averages, the figure is likely to be inaccurate and lower than the actual number of cases, owing to widespread stigma and a reluctance of close family and other relatives to undergo police investigation.9 Therefore, additional work is required in order to comprehend the higher rates of suicide seen in rural areas (88%) in Bhutan and among young adults (66%) aged 15–40 years.9

Overview of policies to prevent depression in Bhutan

An effort to provide mental health service as an integrated primary health-care service was initiated in 1997. The National Mental Health Programme was established at the Department of Public Health, to oversee the efforts. Short courses to train primary health-care workers to recognize and treat common mental disorders, including depression and anxiety disorder, at primary health-care level have been conducted over the years. An acute shortage of mental health professionals who are able to provide back-up to primary health-care providers is one of
the critical obstacles facing mental health services in Bhutan. In the country’s history of 60 years of allopathic medicine, Bhutan only has four psychiatrists. In addition, the country lacks any psychiatric social workers or mental health counsellors with comprehensive training. As a result, routine clinical mentoring of primary health-care services in management of mental disorders is compromised. The quality of mental health services is therefore low and relatively basic. Treatment and rehabilitation centres for misuse of drugs and alcohol are provided through joint efforts of government and civil society, and their coverage is very low. In addition, back-up from the health services is not optimum, owing to low capacity of the health-service providers. Myths and lack of awareness about mental disorders abound, as the concept of mental health is relatively new in Bhutan. Stigma and discrimination related to mental health are universal challenges, and are prevalent in Bhutan, such that most people with mental disorders and depression receive no treatment or delay seeking care.

**Bhutan’s suicide-prevention strategy 2015–2018**

While suicide prevention is receiving increased attention in many high-income countries, suicide-prevention programmes remain largely ignored in low- and middle-income countries, owing to a number of impeding factors and competing priorities. In Bhutan, suicide did not feature as a social and public health issue before 2014. Even among health-care providers, the idea that suicide was preventable was not fully understood. When a suicide occurred, health workers merely viewed it from the perspective of a medico-legal task and accompanied police to the scene to complete the medico-legal investigation. No post-event services – i.e. counselling and other social care for those directly affected by a suicide – were provided to the family members and individuals who were bereaved.

Frequent reports of suicide in health facilities, and news coverage by the media of suicide incidents in the country, captured the government’s attention; the prime minister’s cabinet intervened and issued an executive order in 2014 to conduct an assessment of the suicide situation in the country. An 11-member multisectoral task force led by the secretary of the Ministry of Home and Cultural Affairs was appointed to review suicide in Bhutan. Subsequently, Bhutan’s first study on suicide, commissioned from May to June 2014, revealed 315 deaths in a span of 5 years, covering 2009–2013 – an average of 76 deaths annually. Although hanging was the most common means of suicide, consumption of drugs or toxic substances such as pesticides and insecticides was also documented. The fact that suicide deaths exceeded the deaths due to tuberculosis, HIV, malaria and road traffic accidents heightened the political desire to prioritize suicide prevention in the country. In December 2014, the prime minister’s cabinet directed the task force to develop a suicide-prevention action plan. In February 2015, the Ministry of Health mobilized multisectoral agencies and spearheaded the development of the 3-year action plan (2015–2018).

Key stakeholders, including the Central Monastic Body, the Ministry of Education, the Ministry of Health, the Women and Children’s Commission, academia, civil society organizations and the Royal Bhutan Police, engaged in a series of consultations. In May, 2015, the 3-year suicide-prevention action plan was endorsed by the country’s highest executive body, in the 74th session of the prime minister’s cabinet, paving way for implementation of the first suicide-prevention plan in Bhutan. Some government funding for suicide-prevention activities has been integrated within the annual sectoral budgets for the health, education, police and other sectors.

The 3-year action plan encompasses approaches to prevention, service delivery, and strengthening institutional and policy responses for suicide prevention. The implementation of the plan is designed to mainstream complex determinants of suicide into the multisectoral programme, with the aim to reduce suicide rates by 10% by 2020, in line with the May 2013 declaration of the World Health Assembly. The plan is fairly comprehensive, with actions targeting the general population through mass media and social mobilization, providing focused prevention and post-event services for individuals at high risk of suicide and those affected by suicide. The plan has clear deliverables, an implementation matrix and a framework of stakeholder accountability. The logic of change of the 3-year action plan is synthesized in Box 1.

**Initial achievements in suicide prevention**

Progress in implementation of the 3-year action plan for suicide prevention has been notable since its release in 2015. Most of the activities are being implemented in accordance with the plan, as described next.

**Governance**

The structure of governance for suicide prevention is in place. The National Suicide Prevention Plan is implemented under the auspices of the National Suicide Prevention Steering Committee (NSPSC). A 10-member committee chaired by the health minister has met twice to discuss the progress of implementation. The National Suicide Prevention Programme (NSPP) has been instituted at the Department of Public Health, to function as secretariat to the NSPSC and as a technical agency for suicide prevention, with full-time staff and budget allocation. The implementation of activities has been assured by signing a memorandum of understanding between the NSPP and all the implementing partners.

At the local level, coordination of suicide prevention is integrated within the roles of local governments. Eight of the 20 districts have set up a district suicide-prevention rescue team and the remaining districts are expected to establish the mechanism within the remaining period.

**High-level advocacy support**

Suicide prevention is championed by some of the highest social figures in the country. His Holiness the *Je Khenpo*, the Chief Buddhist Abode of the country, has addressed youths, promoting human values and dissuading suicidal attempts. Similarly, Her Majesty the Queen Mother has adopted school-based programmes focusing on depression and suicide prevention as a priority, as part of school youth programmes. The World Suicide Day on 11 September has been routinely observed since 2015, and remains a platform for advocacy and engagement of parliamentarians and partners on suicide prevention.
**Box 1. Outcomes to be achieved by 2018 for suicide prevention in Bhutan**

**Inputs**
- National Suicide Prevention Steering Committee (NSPSC)
- Governor’s suicide-response team at district level
- Suicide-prevention unit of the Royal Bhutan Police at the police headquarters
- Local governments’ (dzongdags’) suicide-prevention response teams
- National Suicide Prevention Programme (NSPP)
- Budget allocation from government funding

**Outputs/activities**
- Establish a certified board of counsellors in Bhutan
- Set up training courses for counselling and medico-legal investigation
- Set up forensic units at the three referral hospitals
- Conduct school-based programmes
- Conduct public campaigns, public events and media advocacy
- Orient media houses on responsible media reporting
- Set up a 24-hour national helpline and toll-free youth lines
- Introduce interactive social media
- Frame rules and regulations for the Pesticide Act of Bhutan
- Build capacity for police, women and child protection units, and peer counsellors for misuse of alcohol and drugs
- Integrate mental health, depression and suicide for paramedics at the Faculty of Nursing and Public Health
- Set up a national suicide registry
- Brief community traditional healers, local shamans, tsips, and local lamas on suicide prevention
- Identify community confidantes in villages and communities
- Conduct annual parliamentary briefing on suicide prevention
- Revise ICD* coding to include suicide and mental health disorders in the health management and information system

**Short-term outcomes to be achieved by 2018**
- Counselling services and mental health assessment are integrated as a standard of care for primary health-care service
- 100% of the health facilities in the country have integrated mental health screening tools in the patient examination checklist
- Annually, 100% of secondary schools and 90% of the school students receive at least one religious discourse (*choeshed lerim*) with a Buddhist lama
- 100% of school guidance counsellors are trained on mental health and recognition of depression and signs of potential suicide
- Annually, 100% of the district and block councils (dzongkhags and gewog tshogdus) include an agenda on mental health promotion and suicide prevention
- 90% of the suicide stories reported in the media observe responsible media reporting
- 100% of suicide attempters and of those with addiction to substance presenting in a health facility receive a mental health assessment as a standard of care
- 50% of suicide survivors receive crisis counselling and suicide risk assessment by a trained professional (health worker, school counsellor or peer counsellor)
- 80% of families bereaved by suicide receive support from their neighbours and communities
- Real-time data on suicide are available

**General outcomes**

- Decreased depression and mental disorder
- Improved mental health
- Improved gross national happiness index and well-being
- Decrease in suicide


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**WHO South-East Asia Journal of Public Health | April 2017 | 6(1)**
**Institutional capacity development**

The National Certified Counselling Board has been established, to promote the certification of professional counsellors in the country. In 2016, a Bachelors of Science in clinical counselling was established in Khesar Gyalpo University of Medical Sciences of Bhutan, with the first batch of six students. The Royal University of Bhutan has integrated suicide and mental health in the curriculum in its postgraduate counselling training programmes, where trainees are mostly the future employees of school systems.

**Prevention services**

A national hotline service has been set up as a part of medical emergency response and provides 24-hour support to crisis calls, including free ambulance services. Additional toll-free services for youth offered by the Ministry of Education have been oriented on the management of crisis calls. A Facebook forum “Mind Over Matter Bhutan”, moderated by a group of professionals, is becoming a popular online platform for people in Bhutan with depression and suicidal intent. All medical technicians have been trained as the first responders for suicide. Similarly, a suicide component has been included as part of training for primary health-care workers. The school system, which traditionally focused on career guidance, is now including psychosocial areas as a component of interventions, using a network of peer counsellors and sensitization of teachers. The level of engagement of nongovernmental organizations providing rehabilitation for women, children and youth has increased, and the services are being aligned to address depression and risks for suicide.

**Data and information system for suicide**

A national suicide registry has been set up at the NSPP and health workers have been trained to report suicide and attempted suicide. Information from police and the health sector is triangulated to complete the national suicide registry; the data collected are shown in Table 1. These data are too preliminary for detailed interpretation. However, it is notable that Samtse and Thimphu districts have reported higher numbers of suicides to date than other districts. Among other reasons, this may be because these districts have relatively large populations. Data on suicide are available in real time with the NSPP, to inform programme developers and policymakers. In addition, ICD (International Statistical Classification of Diseases and Related Health Problems) coding has been revised in the health information system, to include disaggregated data on suicide and self-harm.

**Table 1. Distribution of complete suicide cases in districts from 1 January to 30 October 2016 in Bhutan (national suicide registry)**

<table>
<thead>
<tr>
<th>District</th>
<th>10–20</th>
<th>21–30</th>
<th>31–40</th>
<th>41–50</th>
<th>51–60</th>
<th>61–70</th>
<th>&gt;71</th>
<th>Total</th>
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<td>1</td>
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<td>–</td>
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<td>–</td>
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<tr>
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<td>–</td>
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<td>–</td>
<td>1</td>
<td>–</td>
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<td>6</td>
<td>7</td>
<td>9</td>
<td>3</td>
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</table>

F: female; M: male.

*Five districts have not reported suicide cases.*
Lessons learnt and future directions

This section summarizes the lessons learnt from the implementation of suicide prevention in Bhutan. Mental health is a fundamental component of the concept of holistic health, and its omission, a concept sometimes expressed as “no health without mental health”, is a serious policy gap. The greatest influence on mental health is achieved through prioritization of relevant policies and programmes by national governments. Suicide is an acute event and it is often easier to gain policy and political attention of governments in this area, provided the right approaches are taken. Suicide prevention can be used as an entry point to address depression, alcohol misuse and drug addiction, and to set the public health agenda for mental health as a whole.

Clear information on the epidemiological burden, groups affected, socioeconomic implications and rationale for action should be documented, to inform and influence the decision of policy-makers, such as heads of governments. In Bhutan’s case, findings from the 5-year retrospective assessment on suicide convinced the prime minister’s cabinet to undertake prompt policy endorsement and resource allocation for suicide prevention.

Suicide prevention requires effective collaboration among government and nongovernment agencies. Forming a policy coalition with agencies and civil society groups is necessary to bring a combined perspective on a highly sensitive subject. It is useful to engage stakeholders early on rather than later, during the stage of policy dialogue, while planning to build ownership during implementation of the programme. When the implementation plan was presented to the cabinet, a single voice was created among stakeholders, and clear areas of response for key stakeholders were identified and agreed upon.

Mental health programming and execution requires a coordinating agency endorsed by all sectors. A well-thought-out coordination mechanism for multisectoral response is crucial for the success of policy governance. The health sector appears to be an acceptable coordinating agency, as most agencies view suicide and depression as severe health outcomes. Once a national coordination mechanism is established, proactive and constant communication is required to keep stakeholders connected. It is vital to expand educational and communication activities beyond identifying suicide and depression as adverse health outcomes and towards raising awareness of the different ways that mental disorders can present – such as depression in a child presenting as low school grades, or in an adult presenting as an alcohol-use disorder.

Where possible, government support, in terms of funds and resources, is needed to boost the initial work. Suicide prevention requires commitment and innovation. As a governance approach, suicide prevention receives a higher priority if it is included as one of the performance indicators of government agencies, particularly local governments. Making suicide prevention a local responsibility builds ownership of the issue.

Suicide is a sensitive issue, as suicidal behaviours can be highly stigmatized. Health workers and service providers must maintain full confidentiality, to gain the trust and confidence of clients and their relatives. The importance of upgrading the skills of the health workforce in mental health services and suicide prevention should not be underestimated. Clinical mentoring and supportive supervision in addressing mental disorders appears to be a good approach to increase coverage of services.

Despite good progress, Bhutan’s work in suicide prevention is only a beginning. While it is too early to comment on the outcomes of interventions, processes are going in the right direction. Institutional capacity-enhancement programmes, such as introduction of medico-legal courses to determine the cause of death, forensic investigation for police, and human resources to train professionals, are challenging and should be given priority. Planning, development and retention of mental health professionals should be well focused, as investment is required to ensure adequate time for producing a mental health workforce. Health services should be improved, to detect, treat and follow up cases of depression and provide post-event services for people at risk of suicide. Community outreach and education on depression are still weak and restricted to case-finding when people seek health services. More capacity is required among community-based organizations to conduct outreach and gate-keeping services. Lessons learnt from implementing the first suicide plan need to be well documented and incorporated in planning the post-2018 phase of the suicide plan in Bhutan.

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References

6. Balázs J, Benazzi F, Rihmer Z, Rihmer A, Akiskal KK, Akiskal HS. The close link between suicide attempts and mixed (bipolar) depression:
Suicide burden and prevention in Nepal: the need for a national strategy

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Abstract

Suicide is a major cause of deaths worldwide and is a key public health concern in Nepal. Although routine national data are not collected in Nepal, the available evidence suggests that suicide rates are relatively high, notably for women. In addition, civil conflict and the 2015 earthquake have had significant contributory effects. A range of factors both facilitate suicide attempts and hinder those affected from seeking help, such as the ready availability of toxic pesticides and the widespread, although erroneous, belief that suicide is illegal. Various interventions have been undertaken at different levels in prevention and rehabilitation but a specific long-term national strategy for suicide prevention is lacking. Hence, to address this significant public health problem, a multisectoral platform of stakeholders needs to be established under government leadership, to design and implement innovative and country-contextualized policies and programmes. A bottom-up approach, with active and participatory community engagement from the start of the policy- and strategy-formulation stage, through to the design and implementation of interventions, could potentially build grass-roots public ownership, reduce stigma and ensure a scaleable and sustainable response.

Keywords: legislation, mental health, Nepal, South Asia, suicide prevention

Suicide: a global public health issue

Over 16 000 000 people worldwide attempt suicide every year and about 800 000 people die by suicide.¹ In 2012, suicide accounted for 1.4% of all deaths worldwide, making it the 15th-leading cause of death.¹ Suicide occurs at all stages of the lifespan and was the second-leading cause of death among 15–29 year olds globally in 2012. While 75% of global suicides occurred in low- and middle-income countries,² the South-East Asia Region of the World Health Organization (WHO) accounted for 39% of global suicides but only 26% of the global population.¹ This affects many millions of people with suicide-related bereavement. It is estimated that, by 2020, 1.5 million people will die each year by suicide, and between 15 and 30 million will make a suicide attempt.³ Considering this, the rate of suicide is among the proposed indicators for monitoring the progress of the health-related Sustainable Development Goal 3, to “ensure healthy lives and promote well-being for all at all ages”,⁴ and suicide prevention is also an integral component of the WHO Mental Health Action Plan 2013–2020, with the target of reducing the rate of suicide in Member States by 10% by 2020.⁵

Suicide in Nepal

Nepal does not have reliable data related to suicide and attempted suicide. The available data are based on police reports or on specific populations, where there is a possibility of gross underestimation. A 2014 scoping review of suicide in South Asia estimated the suicide rate in Nepal at 8.6 (standard deviation = 8.87) per 100 000 population.⁶ In a study done among 206 medical students in Nepal, it was found that suicidal ideation in the past year was present in 10.7% of students and lifetime suicidal ideation was present in 18.4% of students.⁷ A study done in Kaski district, analysing 287 postmortem cases, estimated a suicide rate of 12.4 per 100 000 per year (18.9 for men and 4.8 for women).⁸ Among 100 people aged 65 years and older attending outpatient departments of a teaching hospital, 16 were experiencing suicidal thoughts or feelings, of whom 3 had attempted suicide.⁹ Though Nepal lacks routine national-level data on suicide, WHO has modelled an age-standardized suicide rate for Nepal in 2012, ranking it 7th in the world at 24.9 per 100 000.¹ ¹ The effects of conflict exposure during the 1996–2006 Maoist Insurgency in Nepal highlighted the issue of mental health and suicide.¹¹ An assessment of mental health need 4 months after the Nepal earthquake in 2015 reported a 10.9% prevalence of suicidal ideation (n = 513, 15.1% in women and 5.7% in men ), which was higher in the most seriously affected districts (Gorkha: 24.5%, Sindualchowk: 25.1%) than in the capital Kathmandu (8.3%).¹² Previous studies have noted increased suicide rates in earthquake-exposed populations.¹³,¹⁴ Although data are lacking, media and police reports, together with the experience of experts in the field, suggest a similar situation in post-earthquake Nepal.
Suicide among women in Nepal

In the absence of national data, it is difficult to compare and draw a conclusion on gender-specific suicide rates. Overall, suicide among men is believed to be higher than for women, as in other Member States of the WHO South-East Asia Region, with a ratio of 1.5:1.1,2 However, when compared with other countries around the globe, suicide among women in Nepal (20 per 100 000) is higher than in men (3rd-highest in women versus 17th-highest in men).1,2 In a 2008–2009 government survey, suicide (16%) rather than maternal-related issues (12%) was the single leading cause of death among more than 86 000 women of reproductive age in eight districts and of different ethnicities and levels of development.15 Among these young women of reproductive age, suicide appears to be as high as, or even higher than, suicide among men in Nepal and India.16,17 These findings are consistent with other studies in Nepal, where it has been found that being female is a risk factor for developing depression or anxiety disorders.18 Additionally, (mass) conversion disorder – a psychological problem where stress is expressed in physical symptoms – is highly prevalent among young Nepalese girls (less than 30 years) compared to boys.19,20 The higher rate of mental health problems and alarmingly high suicide rate among Nepalese women is not surprising, given the social hardship they face, such as poor empowerment of women, lack of educational opportunities, and cultural norms restricting self-expression, space and choice, etc. Even worse is the prevalence of child marriage among girls in Nepal, where more than half of girls aged under 18 years are married. This places tremendous pressure on these girls, rendering them vulnerable to many mental health problems.21

Risk factors for suicide in Nepal

International literature suggests that the risk of suicide is a result of many interacting individual and sociocultural factors. A history of past suicide attempts, the presence of mental and/or substance-use disorder, impulsivity, financial or social losses, and easy access to lethal means increase the risk of suicide, whereas the presence of increased social support and strong problem-solving skills mitigate the risk of suicide.22 There is limited knowledge of the risk factors for suicide in the Nepalese population. Nonetheless, younger age and the presence of mental disorder, especially depression, are the most consistent risk factors noted in the available literature in Nepal.15,23–28 Other risk factors, such as marriage and relationship issues, interpersonal and family conflicts, family history of attempted suicide, and substance-use disorders, have also been recorded.15,23,26 Contrary to the international literature, being married or being a parent does not appear to be a strong protective factor against suicide for Nepalese women.15 Likewise, poverty and caste status do not appear to have straightforward relationships with suicide risk in Nepal, although suicide accounts for a lower proportion of deaths among Dalits than in some other castes/ethnic groups.15 Most of the studies have found that pesticide ingestion is the commonest method of attempting suicide,15,23,26 which is probably due to easy access, resulting from the common practice of storing pesticides at home for agricultural use. While suicide is the result of many interacting risk factors and protective factors, family, marital and relationship factors are clearly major contributors to suicides among women, as observed in nearly two thirds of cases (65%), with husbands being by far the predominant contributors to suicides (35%), and unhappy marriages being mentioned in nearly a quarter of suicide cases (24%).15

In 2004, the mental, neurological and substance-use disorders like schizophrenia, depression, epilepsy, dementia and alcohol dependence constituted 13% of the global burden of disease, which was higher than for both cardiovascular diseases and cancer.27 Suicide is heavily associated with mental illness, as the prevalence of mental disorders among people with suicidal thoughts and attempts ranges from approximately 50% in community samples up to 90% in clinical samples.28 The presence of a mental disorder is a known risk factor for future suicidal ideation and attempts.29 The risk of suicide increases by several times when more than one mental disorder is present. Mood disorders, particularly major depression and bipolar disorder, are significant predictors of suicide attempts. Interestingly, however, several other disorders have been found to be even stronger predictors of suicide attempts in low- and middle-income countries, including conduct disorder, oppositional defiant disorder, intermittent explosive disorder, harmful use of drugs and alcohol, and post-traumatic stress disorder.28 Recently, suicide has been identified by WHO as a priority condition in the Mental Health Gap Action Programme (mhGAP), the programme to scale up care for mental, neurological and substance-use disorder, particularly in low- and middle-income countries.30

Suicide-prevention initiatives to date

There is a high burden of suicide in Nepal generally, and among women of reproductive age specifically. Suicide is largely preventable and interventions to reduce suicide are available.1 Despite this, the Government of Nepal has not yet elaborated a specific national strategy for suicide prevention. WHO’s mhGAP has identified “restricting access to means of self-harm/suicide”, “developing policies to reduce harmful use of alcohol as a component of suicide prevention”, and “assisting and encouraging the media to follow responsible practices for reporting of suicide” as key elements of an evidence-based population-level strategy to prevent suicide.30 Pesticides, the most common means for suicide attempts in Nepal,15 are sold freely and stored in households. National and international policies that restrict the sales of toxic pesticides have a major impact on suicides, as evidenced from the experience of Sri Lanka.31 However, there is no policy to regulate the distribution, sale and storage of pesticides in Nepal. Attempts to reduce harmful use of alcohol – another proven strategy for suicide prevention22 – have been partially effective, such as regulating drinking and driving, a ban on advertisement in electronic media, increasing taxation, and controlling illegal production of alcohol. There is no media guideline on reporting deaths by suicide and often there is sensational reporting of such deaths in the national media.

Mental health services are not available at community health facilities and thus are not accessible to the majority of the population.32 Further, most health workers do not have the skills to assess suicidal tendency or mental health issues, owing to inadequate training. Despite the Ministry of Health having had a
mental health services into general health services, and a Multisectoral Action Plan for the Prevention of Non Communicable Diseases (2014–2020), with prioritization of mental health, there is minimal progress in translating these promises into practice. The recent mhGAP-based community mental health programmes – a proven strategy to decrease suicidal tendency – are driven by nongovernmental organizations and limited to parts of a few districts. Suicide-counselling hotlines operated by nongovernmental organizations and private hospitals, and through public–private partnership, have been available in major cities like Kathmandu, Lalitpur, Pokhara and Butwal. However, these potentially useful initiatives have not been scaled up, as coordination among different sectors and community engagement are lacking. Hence, these stand-alone programmes are turning out to be ineffective in bringing about significant change in the burden of suicide. Nonetheless, the emphasis of the Ministry of Health’s standard treatment protocol for primary care providers on the need to screen for suicidal behaviour in every patient presenting with depression, and the inclusion of psychotropic medications in the recently upgraded national essential drug list, are small but much-needed steps in the right direction, indicating the intention of policy-makers to move forward on this critical public health issue.

There is no comprehensive national suicide registry. Based on the current reporting mechanisms, collection and maintenance of data on suicidal deaths falls under many departments: health, administration and police. In the absence of one entity responsible for coordinating the reporting of suicides, all these sectors report suicidal deaths through their own information pathways, and all the data finally reach the Central Bureau of Statistics (CBS). The CBS is thus required to report to WHO. Many barriers and challenges in these reporting pathways have resulted in inaccurate reports. There is no information sharing among these systems and, more surprisingly, the CBS currently does not share the suicide data with WHO. Hagaman et al. recommend a collaborative, multisectoral approach, especially partnerships between law enforcement and the health system, to achieve reliable and accurate surveillance, and, ultimately, effective suicide prevention.

Additionally, suicide and mental health issues are highly stigmatized and misunderstood, not only preventing people from using the limited existing services but also limiting data collection and reporting. Hagaman et al. report that stigma against suicidal behaviour is prevalent in health-care settings in Nepal. They found that suicides were consistently reported as a “criminal” and “legal” issue by the majority of health informants, contrary to the actual legal provision.

### Legal aspects of suicide in Nepal

Legal provision generally aims to promote protection of the people by penalizing the practices and products encouraging or facilitating suicide. Legal provision to restrict the use of alcohol and other illicit drugs, to limit access to the lethal means of suicide, and to criminalize gender-based violence often provides strong protection and support to national suicide-prevention programmes. However, suicide is still illegal in 25 countries; an additional 20 countries follow Islamic or Sharia law, where people who attempt suicide may be punished with jail sentences. Nepal’s country code, the Muluki Ain, which outlines all civil and criminal laws, authorizes procedural investigation of all homicides and suspicious suicides but does not have provision to criminalize or punish people who attempt suicide. This law is well-intentioned with regard to reducing domestic violence, alcoholism, harassment and other behaviours related to abuse and maltreatment.

Although suicide is not illegal in Nepal, misconceptions are widespread. Publications on suicide in Nepal have wrongly stated that suicide is a punishable crime, attempted suicide is illegal and people who attempt suicide are subject to imprisonment, fines or both. These articles range from personal blogs of mental health professionals, to newspaper columns, to scientific articles, and review articles. The misconception that suicide is illegal and a punishable offence is also widely prevalent among health workers in Nepal, and the desire to avoid legal consequences is a possible reason for underreporting of these cases.

### Towards a national suicide-prevention strategy

Suicide is a pressing, yet largely preventable, public health issue in Nepal. Suicide prevention is the responsibility of government and civil society. No reason can justify the lack of a comprehensive national suicide-prevention strategy. Under the leadership of the government in Nepal, a strategy with concrete action plans and interventions has to be developed, with an optimal level of participation by the community and civil society. Specific sociocultural issues have important implications for designing a successful prevention programme, where other sectors (beyond health) responsible for empowerment, education and protection appear to be equally important in preventing suicide.

A system of proper record keeping, in order to develop a database of suicide mortality, is essential to identify the real burden and determinants and distribution of suicide. The current scattered and disconnected data-keeping system needs to be reframed. There must be better communication among the health, administration and police departments for confirmation and completion of records. The capacities of health facilities need to be strengthened and they should be identified as the main channel for the suicide data registry, in coordination with the law-enforcement and administrative mechanisms.

A strong monitoring and evaluation mechanism is essential at every step of programme development and implementation. This will ensure the quality of interventions, track progress in implementation and identify effective programme components. These outputs will help to tailor interventions to the needs of the local community.

However, considering the burden of the problem and the resource gap, the concerted effort required demands substantial additional investment. For low-income countries like Nepal, funding for mental health would have to increase by many times in order to support a basic package of cost-effective interventions. A potential strategy would be integration of suicide-prevention programmes as a part of existing public health programmes like immunization, nutrition, family planning, safe motherhood, or HIV and tuberculosis. For example, routine screening and subsequent help for depression, anxiety and suicidal thoughts, offered to all the women presenting to family-planning or safe-motherhood programmes, could help in mitigating the large
burden of suicide among young women. This integrated approach would not require new human resources or a new structure and could be immensely helpful for reaching out to vulnerable groups.

**Prevention strategies for the general population**

Policies to restrict access to pesticide, to reduce harmful use of alcohol, to assist and encourage the media to follow responsible reporting practices for suicide events, and to integrate mental health services into primary health-care services need to be revised and put into action through strong programmes. A national campaign on stigma and public awareness of mental illness, substance-use disorders and suicide should become an essential part of national mental health programmes to improve service coverage. Active and participatory community engagement, from devising the policy to formulating the strategy and action plan, can potentially build public ownership and help in effective implementation. This is essential for tackling the challenges in implementation, which is often poor in Nepal.

**Prevention strategies targeting vulnerable groups**

Persons suffering from psychological trauma or abuse, young women of reproductive age, women who are victims of gender-based violence, and those who are bereaved by a suicide are vulnerable subgroups for depression and suicidal behaviours. It is therefore crucial to reach out and care for these people. People who come into frequent contact with this population – female community health volunteers, maternal and child health workers, police personnel, teachers, social activists and traditional healers – need to be sensitized and trained on screening high-risk suicidal behaviour and provide basic psychosocial support. These key persons in the community can be an important support for stigma-reduction campaigns and promotion of help-seeking behaviour for those with mental health issues, substance-misuse problems and suicidal ideation. These targeted interventions should be closely linked with health facilities providing basic mental health care, for cross-referral.

**Prevention strategy at the individual level**

From the public health perspective, the association between mental disorders and suicidal behaviour is strong enough to include identification and treatment of mental disorder as a core of the suicide-prevention strategy. As comorbidity with depression, anxiety, substance misuse and personality disorders is high in cases of suicide, it is imperative to have adequate diagnostic procedures and appropriate treatment for the underlying disorders, in order to achieve successful prevention of suicide. The recent attempts to integrate mhGAP-based mental health service into community health facilities should be scaled up nationwide, with concrete action plans. These community mental health programmes will provide not only individual-focused treatment like identification and treatment of mental illnesses and prompt care of patients who attempt suicide, but also public health services for vulnerable groups and survivors, to protect them from further psychological problems and stigma.

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**References**


Review

Co-occurring depression and alcohol-use disorders in South-East Asia: a narrative review

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Abstract

Depression and alcohol-use disorders frequently co-occur and the presence of one augments the adverse consequences of the other. This article reviews and synthesizes the available literature on depression and alcohol-use disorders from the World Health Organization (WHO) South-East Asia Region, with respect to epidemiology, screening instruments, interventions and services, and policy. In common with other low- and middle-income settings, data from this region on co-occurring depression and alcohol-use disorders are scarce. The wide variations in language and cultural diversity within the countries of this region further make the identification and management of people with co-occurring depression and alcohol-use disorders a major challenge. A range of interventions for individuals with the two disorders have been studied. However, most of this work has been done in high-income countries, highlighting the need to explore the effectiveness and cost effectiveness of various pharmacological and non-pharmacological interventions in the WHO South-East Asia Region. Much of this region comprises low-resource settings, with a dearth of trained personnel and resources. Flexible transdiagnostic approaches, delivered by community health workers and integrated into primary health care may be a pragmatic approach. Such services should form part of strengthened national responses to alcohol-related public health problems across the region.

Keywords: alcohol, alcohol-use disorders, co-occurring disorders, depression, dual disorders, South-East Asia

Background

According to the Global Burden of Disease study 2015, the contribution of mental and substance-use disorders to global disability is enormous – 18.4% of the total years lived with disability (YLDs).¹ Depressive disorders were the third-leading cause of disability in 2015, contributing about 6.86% of total YLDs, while alcohol-use disorders were ranked 28th, contributing a mean of 0.8% to the all-cause YLDs.¹ Clinical experience, as well as published literature, indicates frequent co-occurrence of depression and alcohol-use disorders. The presence of either of the disorders is associated with a doubling of the risk of the other one.² The lifetime prevalence of alcohol-use disorders in people with major depressive disorders has been reported to be as high as 40%.² Among people with alcohol-use disorders, the prevalence of depression has been reported to be as high as 35%.² A meta-analysis of such studies reported a pooled comorbidity odds ratio of 2.42 (95% confidence interval [CI]: 2.22–2.64) for major depression and alcohol-use disorders.³ The two disorders are also thought to share a causal association, as the frequency of their co-occurrence is higher than might be expected by chance.⁴ Co-occurrence of these two disorders is also known to augment the adverse consequences of each individual disorder; for example, depression predicts poor treatment response and higher rates of relapse in alcohol-use disorders, while alcohol-use disorders are associated with higher rates of suicide among patients with depression.⁷⁻⁸

There is a high prevalence of both depression and alcohol-use disorders in low- and middle-income countries. Both cause significant distress to individuals and their families.⁹¹⁰ There is a need to develop effective and comprehensive management options that target both depression and alcohol-use disorders and are well integrated within the health-care infrastructure of these countries. This article reviews the available evidence on co-occurring depression and alcohol-use disorders from the World Health Organization (WHO) South-East Asia Region.

Methodology

This narrative review focuses on the literature available from the Member States of the WHO South-East Asia Region. Three search engines were used for the review: PubMed, WHO online repository and Google Scholar. A PubMed search was conducted with the search terms “alcohol AND depression AND (SEAR OR south east Asia OR south Asia OR India OR Bangladesh OR Nepal OR Bhutan OR Myanmar OR Thailand OR Sri Lanka OR Maldives OR Indonesia OR Timor-Leste OR Korea)”, for relevant studies on epidemiology and screening and management strategies for co-occurring alcohol-use disorders and depression. Searches on the WHO online repository and Google Scholar were conducted to identify the relevant WHO publications or data provided by governments of countries of the South-East Asia Region. The keywords used were: “alcohol”, “depression”, “WHO”, “World...
Health Organization”, “SEAR”, “south east Asia”, “south Asia”, “Bangladesh”, “Bhutan”, “India”, “Indonesia”, “Korea”, “Maldives”, “Myanmar”, “Nepal”, “Sri Lanka”, “Thailand”, “Timor-Leste”, in various combinations. Back references from articles were accessed wherever deemed necessary. Studies on alcohol policy were searched through Google Scholar. The search terms used were: “alcohol”, “policy”, “legislation”, “SEAR”, “south east Asia”, “south Asia”, “Bangladesh”, “Bhutan”, “India”, “Indonesia”, “Korea”, “Maldives”, “Myanmar”, “Nepal”, “Sri Lanka”, “Thailand”, “Timor-Leste”, in various combinations. All relevant search results of iterations with the term “Korea” were individually sorted by the authors to include literature only from the Democratic People’s Republic of Korea, which is a Member State of the WHO South-East Asia Region. The abstracts and documents were examined by two authors (PG and DE) and all relevant resource material was selected. The review includes studies up to and including October 2016.

Results

Epidemiology
While the highest levels of alcohol consumption per capita are found in high-income countries, the WHO South-East Asia Region has recorded one of the lowest levels of consumption (in 2010 – India: 2.5–4.9 L per capita; Bangladesh, Bhutan, Myanmar, Nepal: <2.5 L per capita). However, the disease burden per litre of alcohol consumed in low- and middle-income countries, such as all the Member States of the South-East Asia Region, is more than in high-income countries. Moreover, an increase in the alcohol consumption per capita has been noted from 2003–2005 to 2008–2010 in India (3.6 L to 4.3 L) and Sri Lanka (2.2 L to 3.7 L), the two countries that are home to the majority of the population of this region, and estimates project a further increase by 2025.11

There is a dearth of epidemiological studies on co-occurring depression and alcohol-use disorders from the WHO South-East Asia Region (see Table 1).12–33 This section compiles the studies available from countries of the region that have measured rates of depression and alcohol-use disorders in the same population, or looked at rates of co-occurrence among these two disorders, or looked into the association of one disorder with the other.

Studies among a general adult population
The National Mental Health Survey of India, conducted in the general population in 12 Indian states (n = 34 802), reported the prevalence of depressive disorders as 2.7% and that of alcohol-use disorders (by use of the Mini International Neuropsychiatric Interview [MINI]) as 4.6%.12 Findings from the Thai National Mental Health Survey (n = 17 140) reported the prevalence of alcohol-use disorders (MINI) and major depression as 11.7% and 2.2% respectively.13 In the same survey, individuals with alcohol-use disorders were found to have significantly increased risk of depression.13 Another general-population-based survey from India (n = 3033) reported the prevalence of alcohol dependence (MINI) as 3.95% and depressive disorders as 14.82%.14 Jonas et al. (2014), in a community-based survey in India, found the rate of alcohol dependence (by use of the Alcohol Use Disorders Identification Test [AUDIT]) was 4.63%, and that of mild-to-moderate and major depression (by use of the Center for Epidemiologic Studies Depression Scale [CES-D]) was 39.6% and 13%, respectively.15

Two general-population-based studies from India using AUDIT, from Chennai (n = 1053) and Madhya Pradesh (n = 3220), found an increased risk of depression among men who had alcohol-use disorders. The prevalence rates of alcohol-use disorders (hazardous drinking, harmful drinking, dependent drinking) differed between the studies, as did the cut-off scores for AUDIT.16,17

Studies among populations with alcohol-use disorders
In studies among populations of individuals with alcohol-use disorders, a high prevalence of depression was found among inpatient clients in de-addiction centres,18–20 attendees of Alcoholics Anonymous,21 female sex workers,22 army personnel with alcohol dependence,23 and other populations with alcohol-use disorders.24,25 These studies were conducted in India and Nepal, as well as in populations of Indian and African ancestry living in Trinidad and Tobago. Depressive disorders were commonly diagnosed co-occurring disorders among individuals with alcohol-use disorders seeking treatment from the national de-addiction centre in India.26

Studies among populations at high risk of alcohol-use disorders and depression
One study conducted among men who have sex with men and transgender women reported a high prevalence of co-occurring depression and frequent alcohol use.27 Another study among female sex workers from India found a high likelihood of having depression among those who had consumed alcohol in the last 30 days.28 One study among 129 Indian IT professionals reported that subjects who were professionally stressed or were at risk of developing depression had a higher prevalence of harmful alcohol use.29 Another study in Thailand, among methamphetamine users or their sexual partners, found alcohol-use disorders were associated with high levels of depression in men.30 Moreover, in studies on people from Thailand31 or India,32 respectively, who attempted (n = 110) or died by suicide (n = 100), high rates of alcohol-use disorders were found, though only one of these studies commented upon the prevalence of depression among the subjects.32

A secondary analysis of the Global School-Based Student Health Survey indicated that, among 13–15 year olds in Indonesia, Myanmar and Thailand, 2.5%, 3.0% and 23.9%, respectively, had experienced at least one episode of drunkenness in their lifetime.33 Also, 23.3%, 16.5% and 16.7% of students in Indonesia, Myanmar and Thailand, respectively, had experienced an episode of depression in the past 12 months.33 Overall, only a few epidemiological studies have assessed the co-occurrence of depression and alcohol-use disorders in the WHO South-East Asia Region. Some of these have been compiled in previously published narrative reviews.34 Some suggest that there is an increased risk of depression among persons with alcohol-use disorders, the extent of which remains unclear. Also, none of the studies in the present review commented upon alcohol-use disorders in individuals with depression. A variety of measures for depression and alcohol-use disorders have been used in the studies; for example, harmful alcohol use has been variously measured as alcohol dependence, harmful or hazardous alcohol use, alcohol abuse,
### Table 1. Epidemiological studies reporting the rates and associations of alcohol use and depression from the World Health Organization South-East Asia Region

<table>
<thead>
<tr>
<th>Author, year, country</th>
<th>Population characteristics</th>
<th>Prevalence (assessment tool, where recorded)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Alcohol</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Prevalence of alcohol-use disorders (MINI) = 4.6%</td>
</tr>
<tr>
<td>National Mental Health Survey of India, 2015–16; India</td>
<td>General adult population from 12 states, n = 34 802</td>
<td>11.7% had alcohol-use disorders (MINI)</td>
</tr>
<tr>
<td>Suttajit et al., 2012; Thailand</td>
<td>Stratified 3-stage random sampling in lay community health workers, general population aged 15–59 years, n = 17 140</td>
<td></td>
</tr>
<tr>
<td>Sathyanarayana Rao et al., 2014; India</td>
<td>Population-based door-to-door survey, n = 3033</td>
<td>Prevalence of alcohol dependence (MINI) = 3.95%</td>
</tr>
<tr>
<td>Jonas et al., 2014; India</td>
<td>4711 subjects aged &gt;30 years from the community</td>
<td>Hazardous drinking (AUDIT) = 6%</td>
</tr>
<tr>
<td>Gupta et al., 2015; India</td>
<td>Community-based cross-sectional study in 259 households, n = 1053 (510 men)</td>
<td>Harmful or hazardous alcohol use was seen in 12.7%, while alcohol dependence was seen in 26.5% (AUDIT)</td>
</tr>
<tr>
<td>Rathod et al., 2015; India</td>
<td>Population-based cross-sectional survey in 3220 adults</td>
<td>23.8% of men and 0.6% of women had consumed alcohol in the past 12 months (AUDIT)</td>
</tr>
<tr>
<td>Sau et al., 2013; India</td>
<td>284 consecutive inpatient clients at a de-addiction centre</td>
<td>38.3% were currently abusing alcohol</td>
</tr>
<tr>
<td>Khalid et al., 2000; Nepal</td>
<td>34 alcohol-dependent (DSM-IV) patients admitted in psychiatry ward</td>
<td>41.7% had major depression for the episode of drinking that led to hospitalization Only 17.64% had major depression a few days after detoxification There was no correlation between the severity of alcohol dependence and depression (SADQ and HRSD, respectively)</td>
</tr>
<tr>
<td>Neupane et al., 2013; Nepal</td>
<td>188 consecutively admitted patients with alcohol-use disorders in eight residential alcohol treatment units</td>
<td>AUDIT used</td>
</tr>
<tr>
<td>Saxena and Mital, 2011; India</td>
<td>1-month follow-up study on 50 attendees of Alcoholics Anonymous, all with a diagnosis of alcohol dependence</td>
<td>Baseline drinking data were not provided 24 had abstained at the 1-month follow-up</td>
</tr>
<tr>
<td>Pandiyen et al., 2012; India</td>
<td>100 commercial sex workers aged 30–40 years, all with alcohol abuse</td>
<td>78 had psychological morbidity (depression and adjustment disorder)</td>
</tr>
<tr>
<td>Raju et al., 2002; India</td>
<td>173 alcohol-dependent army personnel</td>
<td>4.62% had depression 6.93% had deliberate self-harm</td>
</tr>
<tr>
<td>Shafe et al., 2009; study conducted in Trinidad and Tobago on a sample of Indian and African individuals</td>
<td>143 alcohol-dependent subjects of Indian (Indo-TT) or African (Afro-TT) ancestry and 109 matched (age, sex and ethnicity) controls</td>
<td>SSAGA was used to diagnose alcohol dependence and depression</td>
</tr>
</tbody>
</table>
frequent alcohol use, or at least one episode of drunkenness in the lifetime. Even the same construct of dependence has been measured differently when using criteria from standard tools such as AUDIT, MINI and the International Statistical Classification of Diseases and Related Health Problems (ICD-10). Even for the same scale, different cut-off values have been used by different authors. Because of this, it is difficult to draw any conclusions based on the limited available literature, and the need for use of well-validated and standardized measuring instruments cannot be overstated.

**Screening instruments for depression and alcohol-use disorders**

A wide gap is apparent between mental health needs and service delivery in low- and middle-income countries. A considerable proportion of this can be attributed to the low rates
of detection of mental disorders in these countries. Screening instruments that allow rapid assessment of a large number of subjects, with adequate sensitivity and specificity, and that could be administered by lay community health workers with some training, may help in bridging this gap.

A study from India assessed the applicability of five such screening instruments (the Patient Health Questionnaire [PHQ-9], the General Health Questionnaire [GHQ], the Self-Regulation Questionnaire [SRQ], and the Kessler Psychological Distress Scales [K10 and K6]) for common mental disorders, including depression in primary care settings (n = 598). All five instruments showed moderate to high discrimination ability, moderate to high degrees of correlation with one another and good internal consistency, with the GHQ and SRQ showing the best results. The GHQ, SRQ and K6 have also been found to be useful in other low- and middle-income countries. A systematic review of studies from primary health-care settings in low- and middle-income countries (including four studies from India) found that brief screening instruments for depression (K6, K10, the Beck Depression Inventory-Short Form [BDI-SF], PHQ-9, the Edinburgh Postnatal Depression Scale [EPDS], the Clinical Interview Schedule-Revised [CIS-R], GHQ-12) are as accurate as the longer ones (CES-D, BDI, the Hopkins Symptom Checklist [HSCL-25]). A Thai version of the PHQ-9 has also been validated. The CES-D has been validated in older populations from the Democratic People’s Republic of Korea, Indonesia, Myanmar, Sri Lanka and Thailand.

Commonly used alcohol screening questionnaires, AUDIT, and WHO-ASSIST (Alcohol, Smoking and Substance Involvement Screening Test), have been validated in some of the countries of the WHO South-East Asia Region. AUDIT is currently being adapted and translated into Hindi language in India. The CAGE questionnaire is another commonly used alcohol screening instrument that has been validated in high-income countries, while among countries of the WHO South-East Asia Region, the current review found just one study that validated the modified version of CAGE to include other drug use (CAGE-AID) in an Indian population, and another study in a Thai population that found high agreement between written and oral versions of the CAGE questionnaire.

The WHO mhGAP [mental health gap] intervention guide for mental, neurological and substance use disorders in non-specialized health settings provides a comprehensive tool for assessment, identification and management of mental health conditions, which can be administered by non-specialists. It includes flowchart-based modules for nine mental health conditions, including depression and alcohol-use disorders, and is meant for use in primary health-care settings for better integration of mental health with physical health conditions. Such primary care instruments are likely to be useful in low- and middle-income countries, including countries in the WHO South-East Asia Region. However, the majority of literature available on this topic is from high-income countries, with little evidence from the WHO South-East Asia Region.

Pharmacological interventions

Antidepressants: Meta-analyses have shown improved depression as well as alcohol outcomes with tricyclic antidepressants (imipramine, desipramine) and nefazodone. However, in the same studies, selective serotonin reuptake inhibitors (sertraline, fluoxetine, citalopram) were not found to be effective. None of the studies included in these meta-analyses was from the WHO South-East Asia Region. The guidelines on management of co-occurring depression and alcohol-use disorders from this region are also based primarily on evidence generated from the other regions.

No studies for antidepressant use in alcohol-use disorders were found from the WHO South-East Asia Region. Considering the cost–benefit ratio, some studies suggest that sertraline might be the best choice for moderate-to-severe depression, with a best balance between efficacy, acceptability and lower cost, which is quite important for low- and middle-income countries from this region. However, the WHO model list of essential medicines includes only fluoxetine and amitriptyline among the antidepressants, restricting the choice for antidepressant drugs of proven efficacy.

Anti-craving agents: Acamprosate and naltrexone are commonly used anti-craving agents, with proven efficacy for patients with alcohol-use disorders. However, their role in alcohol-use disorders co-occurring with depressive disorders is relatively less studied. A meta-analysis showed that acamprosate improved alcohol-use outcomes, but did not report the primary depression outcomes. Naltrexone has shown mixed findings in clinical trials in a population with co-occurring depression and alcohol-use disorders, with respect to both depression and alcohol outcomes.

No such studies from the South-East Asia Region were found. Acamprosate and naltrexone are not featured in the WHO model list of essential medicines, but they have been recommended by the mhGAP intervention guide.

Disulfiram: Disulfiram is an evidence-based deterrent therapy used in the management of alcohol-use disorders. The present review did not find any studies addressing its efficacy in patients with co-occurring depression. One randomized trial from India found significantly better alcohol outcomes in patients with alcohol dependence who received disulfiram after detoxification, compared to those receiving naltrexone (depression evaluation and outcomes not reported). Disulfiram is not endorsed by the WHO model list of essential medicines, but has been recommended by the mhGAP intervention guide.

Non-pharmacological interventions

Brief intervention: A systematic review of psychological interventions in patients with alcohol misuse co-occurring with depression and anxiety showed that brief interventions improve both alcohol and depression outcomes, though longer interventions (cognitive behavioural therapy [CBT], motivational interviewing [MI], interpersonal therapy [IPT]) produced better results.
A single randomized controlled trial was found from the WHO South-East Asia Region (India), which evaluated the efficacy of brief intervention for alcohol-use disorders in a community-based sample, with promising results, though the participants were not evaluated for depression. The mhGAP intervention guide has included brief interventions among the list of interventions for preventing harmful alcohol use.

**Cognitive behavioural therapy:** Various forms of CBT have been used in alcohol-use disorders and depression, including CBT (for depression), CBT + MI (integrated for alcohol-use disorders and depression), and group CBT, and have shown positive effects on both kinds of outcomes. CBT for depression alone has been shown to improve alcohol outcomes in patients with comorbidities. Integrated CBT, which includes interventions focused on both alcohol-use disorders and depression (usually CBT and MI), has also shown significant improvements in both measures, which in some studies has been shown to be better than single-focused strategies.

One such study from Thailand assessed the efficacy of a brief six-session course of CBT for depression among patients with co-occurring alcohol dependence and depression, and found significantly more improvement in depression scores in the CBT group than the group receiving treatment as usual. Studies on integrated CBT + MI were not available from the WHO South-East Asia Region.

**Interpersonal therapy:** IPT has shown improvements in both disorders in patients with co-occurring depressive disorders and alcohol-use disorders. However, there was no literature from the WHO South-East Asia Region regarding IPT.

**Self-help groups:** Higher attendance at Alcoholics Anonymous has been associated with better outcomes with respect to both alcohol-use disorders and depression among patients with co-occurring alcohol-use disorders and depression. There was no literature from the WHO South-East Asia Region regarding self-help groups. Self-help groups have been included in the recommendations of the mhGAP intervention guide.

**Transdiagnostic approach:** Transdiagnostic interventions involve a set of common practice elements that can be delivered in varying combinations to address a range of problems. This approach allows for flexibility and adaptation, and treatment may be employed without specifying a disorder classification. Such an approach has been developed for low- and middle-income countries for delivery of community-based mental health treatments through lay counsellors. A randomized controlled trial for this approach (common elements treatment approach) among refugees from Myanmar (survivors of imprisonment, torture or related trauma) in Thailand showed significant improvements in depression, anxiety and post-traumatic stress scores in participants receiving the intervention, compared with waiting-list controls, though the effects for alcohol-use disorders were negligible.

**Service delivery**
Low- and middle-income countries in general have a shortfall of mental health specialists. Moreover, most of the qualified professionals in these countries are concentrated in the larger cities. Efforts towards inclusion of the vast majority of the rural population in the provision of treatment rest mostly with the primary health-care team. Thus, the efforts directed toward scaling-up the treatment services need to focus on ensuring the availability of facilities close to all communities. For this, lay community health workers may be trained to deliver health services through “task-shifting” or “task-sharing.” Task-shifting refers to delegating tasks to existing or new cadres with either less training or training that is narrowly tailored for the required services.

The MANAS trial in India aimed to test the effectiveness of an intervention led by lay community health counsellors in primary care settings, to improve the outcomes of people with anxiety and depression. Overall, the trial found a beneficial effect of the intervention on recovery at 6 months. In a recent review focusing on the effectiveness of using lay community health workers in strategies for prevention of mental disorders in low- and middle-income countries, 15 studies were included, with four from South-East Asia (India, Bangladesh). This review provided evidence on the effectiveness of prevention interventions led by lay community health workers, although none of these addressed alcohol-use disorders. Lay community health workers have been reported to be cost effective and easily available, to have more understanding of the cultural contexts of their particular region, and to be able to take up several roles. This warrants a greater role of lay community health workers in the treatment strategies for the countries in the WHO South-East Asia Region. However, it is important to ensure that these workers do not become overburdened, as they already have an enormous workload. Adding more numbers to the existing cadre of these workers would help to address such concerns.

A stepped-care model has been studied in high-income countries and has shown modest efficacy in various mental disorders, although its use for people with co-occurring alcohol-use disorders and depression has not been studied. This model has been proposed for use in low- and middle-income countries. Each step represents an increased complexity of intervention, with a collaborative approach involving three key team members: lay health counsellor, primary care physician, and visiting psychiatrist (clinical specialist), with each playing their own designated role. When such approaches are integrated into the existing framework for other diseases such as HIV, tuberculosis etc., they are likely to lead to better integration of mental health care in primary care, thereby overcoming the stigma surrounding mental disorders and utilizing the existing infrastructure.

**Alcohol policy: Indian and international perspective**
Alcohol policy refers to the set of measures in a jurisdiction or society aimed at minimizing the health and social harms from alcohol consumption. Nine (Bhutan, Democratic People’s Republic of Korea, India, Indonesia, Maldives, Nepal, Sri Lanka, Timor-Leste) of the 11 countries in the WHO South-East Asia Region do not have any written national alcohol policies. The Global strategy to reduce harmful use of alcohol, proposed by WHO, has recommended five areas of action. These include leadership, awareness and commitment; drink-driving countermeasures; regulating availability; marketing restrictions; and reducing the negative consequences of drinking.

A substantial body of knowledge has accumulated on the feasibility, effectiveness and cost effectiveness of different
policy options. Research findings indicate that population-based policy options, such as the use of taxation to regulate the demand for alcoholic beverages; restricting their availability and implementing bans on alcohol advertising; measures against drunk-driving, such as setting low limits (0.02% to 0.05%) for blood alcohol concentration and enforcing them by random breath testing, are effective in reducing alcohol consumption and alcohol-related harms.\textsuperscript{83, 84} Harmful use of alcohol can also be reduced by screening for hazardous and harmful drinking, and providing brief interventions, counselling and pharmacotherapy, as appropriate.\textsuperscript{83, 85} Most of this evidence comes from high-income countries, with very little evidence from low- and middle-income countries (including the WHO South-East Asia Region). One study from India found liquor taxation had favourable effects on consumption patterns, and the authors recommended keeping consumption of liquor legal (instead of prohibition) and that the pattern of taxation and pricing should be redesigned such that embedded seller incentives to promote sales volume are removed.\textsuperscript{86} Increasing the costs of liquor by 80–90% through excise taxes was projected to be a viable option to reduce alcohol consumption among rural youth in India.\textsuperscript{87} However, a potential confounder is the easy availability of home-brewed alcohol in India, which remains unaffected by taxation.\textsuperscript{88} Some policy-makers in the region have favoured prohibition or a blanket ban on alcohol products, such as in Madhives and certain states of India (e.g. Gujarat). Experience from other countries, including the United States of America, seems to offer limited support for prohibition. In India, Andhra Pradesh and Haryana repealed their alcohol prohibition laws in the 1990s, while Gujarat continues to have complete prohibition, in place since 1949, and the state of Bihar has adopted prohibition on alcohol in the recent past. The impact of the prohibition on alcohol across different states in India has not been studied systematically. One study from India estimated that the expected reduction in participation in alcohol consumption resulting from prohibition will at most be about 40% of what could be achieved with imposition of a minimum age limit for alcohol purchase of 21 years.\textsuperscript{87} Another study found that prohibition reduced the consumption of arrack (an indigenous distilled alcoholic drink), Indian-made foreign liquor (non-indigenous distilled liquor) and beer in the urban sector in India, but the effects on the rural sector were much lower. Moreover, it had no effect on the consumption of home-brewed alcohol. Also, spill-over effects of prohibition led to increased consumption of other substances like bidi and cigarettes.\textsuperscript{89} Mahal (2000) also reported that benefits are likely to be seen by increasing the minimum age for purchase of alcohol in states where it is 18 years, but there are hardly any gains from increasing the minimum age for purchase of alcohol beyond 21 years; this author therefore recommended setting the minimum age at 21 years rather than 25 years, which is the legal lower limit in certain regions of India.\textsuperscript{87} All the aforementioned studies are limited by a host of methodological issues like small sample sizes, unaccounted confounders, lack of generalizability, etc. Moreover, it has been seen that similar policies might not ensure similar rates of alcohol consumption across different countries, as shown in a secondary data analysis of the Global School-Based Student Health Survey from 12 low- and middle-income countries, which noted that countries with similar legislation had strikingly different rates of alcohol use among adolescents.\textsuperscript{33} This was attributed to differential enforcement of laws, together with regional, religious and cultural considerations. Evaluation of policy outcomes is complex, and data on policy from India and other countries of the WHO South-East Asia Region are too scarce to be able to generate any credible conclusions about effective measures in a particular sociocultural environment.

To override this problem, WHO is actively involved in strengthening national responses to alcohol-related public health problems. The \textit{Global strategy to reduce harmful use of alcohol},\textsuperscript{82} an initiative by WHO, currently has involvement from 126 Member States, including some from the South-East Asia Region. WHO co-hosted a Global Alcohol Policy Conference, “From the Global alcohol strategy to national and local action”, held in Thailand in February 2012,\textsuperscript{90} which provided a global platform for information exchange, sharing experiences, building partnerships to raise awareness of public health problems attributable to alcohol, and advocating for implementation of the global strategy at all levels. WHO has also developed the Global Information System on Alcohol and Health (GISAH),\textsuperscript{91} a comprehensive internet-based information platform, to make up for the lack of monitoring systems for alcohol-related indicators in most low- and middle-income countries (including the WHO South-East Asia Region).\textsuperscript{11} The data generated from this platform are likely to guide policy-makers in designing effective alcohol-related policies and their proper implementation.

\section*{Discussion}

The contribution of mental disorders and substance-use disorders to global disability is enormous. Frequent co-occurrence of depression and alcohol-use disorders is more than could be expected as a chance association. This co-occurrence is detrimental to the outcome for each disorder, with increased morbidity and disease burden, poor treatment response, high rates of relapse and higher suicide rates.

Epidemiological studies from the WHO South-East Asia Region focusing on co-occurring depression and alcohol-use disorders are few in number. Most of these are from India, followed by Thailand, Nepal, Myanmar and Indonesia. These studies do suggest that both depression and alcohol-use disorders each increase the risk of the other. However, there is limited evidence to comment on the extent or pattern of this association. Variations in the assessment instruments, cut-off points and diagnostic criteria applied also make it difficult to reach firm conclusions and make comparisons across the different studies. There is a need to generate meaningful data on the co-occurrence of depression and alcohol-use disorders from the Member States of the WHO South-East Asia Region.

Screening instruments are a promising tool to aid in the detection of mental disorders and alcohol-use disorders by lay community health workers in resource-poor settings like the nations of the WHO South-East Asia Region. However, lack of availability of these instruments in local language, along with wide regional variations in language and cultural factors, serve as an important barrier to effective screening and detection of this co-occurrence. Translation, adaptation and validation of the commonly used screening instruments in the local languages in the countries of this region can be a major impetus in the early detection and referral of such patients.
This review did not find any studies from Member States of the WHO South-East Asia Region addressing the effectiveness of pharmacological interventions available for depression and alcohol-use disorders. The WHO model list of essential medicines does not include the anti-craving and deterrent agents that are used as the first line of pharmacological intervention worldwide. This could be detrimental to the availability of these medicines in the WHO South-East Asia Region.

There is limited evidence from Member States of the WHO South-East Asia Region on non-pharmacological interventions for co-occurring depression and alcohol-use disorders, with only one study assessing brief intervention and another evaluating CBT.

The current review has certain limitations. It has not followed the rigour of a full systematic review and some relevant published studies might have been missed, as the search was limited to three electronic database, i.e. PubMed, WHO online repository and Google Scholar. Also, only English-language publications were included in the review.

Most of the countries of the WHO South-East Asia Region are low-resource settings with significant burden due to depression and alcohol-use disorders. There is a need to explore the effectiveness and cost effectiveness of various pharmacological and non-pharmacological interventions across the region. Also, the interventions for co-occurring depression and alcohol-use disorders need to be integrated into the existing health-care system at various levels of care. Finally, the countries in the region should formulate evidence-supported policy and a legislative framework to address alcohol-use disorders.

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Conflict of interest: None declared.

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References


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Suicide and depression in the World Health Organization South-East Asia Region: a systematic review

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Abstract

Background Depression is the most common comorbid psychiatric disorder in people who die by suicide and 39% of global suicides occur in the World Health Organization (WHO) South-East Asia Region. The aim of this systematic review was to identify, for countries of this region, first the prevalence of depression among people who (i) die by, or (ii) attempt, suicide, and second, the proportion of people with depression who attempt or die by suicide.

Methods PubMed, PsycINFO, EMBASE and Google Scholar were searched, together with five available national databases, for quantitative research papers published in English between 1956 and 4 September 2016 from the 11 countries of the WHO South-East Asia Region.

Results The 19 articles that met the predefined eligibility criteria were from five countries: Bangladesh (1), India (12), Indonesia (1), Sri Lanka (3) and Thailand (2); no eligible papers from the remaining countries of the region were retrieved. Eight studies, from Bangladesh, India, Indonesia and Sri Lanka, reported the prevalence of depression among people who had died by suicide. The study settings varied, as did the proportion of depression recorded (6.9–51.7%), and the study sample sizes ranged from 27 to 372. Eight studies from India and one from Sri Lanka investigated depression among people who had attempted suicide. Using a range of screening and diagnostic tools, the reported prevalence of depression ranged between 22.0% and 59.7%. The study sample sizes ranged from 56 to 949. Only two articles were found, both from Thailand, that reported on suicide in people with depression.

Conclusion Despite the high burden of mortality of suicide in the WHO South-East Asia Region, evidence on the relation between suicide and depression is scarce. There is a need to understand this phenomenon better, in order to inform suicide-prevention strategies in the region.

Keywords: depression, South-East Asia Region, suicide, systematic review, WHO, World Health Organization

Background

Suicide is estimated to have resulted in just over 800 000 deaths worldwide in 2012, representing an annual global age-standardized suicide rate of 11.4 per 100 000, the second-leading cause of death among 15–29 year olds and 15th most common cause of death worldwide.¹ In 2012, 76% of global suicide occurred in low- and middle-income countries,¹ and over the last few decades, the magnitude of the problem has been shifting from western Europe, to eastern Europe to Asia.² Compared with other countries, countries in Asia have a higher average suicide rate.³

While suicidal behaviour is influenced by several interacting factors – personal, social, psychological, cultural, biological and environmental – depression is the most common psychiatric disorder in people who die by suicide.⁴ About half of all individuals in high-income countries who die by suicide have major depressive disorder at the time of their death.⁴,⁵ Moreover, a history of suicide attempts is a robust risk factor for death by suicide.⁶

The World Health Organization (WHO) has estimated that the 26% of the world’s population living in the 11 countries of the WHO South-East Asia Region accounts for 39% of global suicides.¹ Therefore, a better understanding of the relationship between suicide and depression in the WHO South-East Asia Region is essential to inform and improve the region’s public health prevention programmes.

The aim of this systematic review was to identify, for countries of the WHO South-East Asia Region, first the prevalence of depression among people who (i) die by, or (ii) attempt, suicide, and second, the proportion of people with depression who attempt or die by suicide.
Methodology

A systematic review of peer-reviewed publications and grey literature was conducted in accordance with the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) statement for the optimal reporting of systematic reviews, and a narrative synthesis of the eligible articles was carried out. The PRISMA statement consists of a 27-item checklist and a four-phase flow diagram.

Search strategy

Identification of articles

PubMed, PsycINFO, EMBASE and Google Scholar were searched. In addition, the key national journal databases for five of the 11 countries of the WHO South-East Asia Region were searched: Bangladesh Journals Online (Bangladesh), medindia.net (India), Nepal Journals Online (Nepal), Sri Lanka Journals Online (Sri Lanka), and Thai Journals Online (Thailand); no databases were available for Bhutan, Democratic People's Republic of Korea, Indonesia, Maldives, Myanmar or Timor-Leste. Searches were carried out using the search terms: (“suicide” AND (“prevalence” or “epidemiologic studies”) AND (“depression” or “depressive disorder” or “mood disorder”) AND (“Bangladesh”) AND (“Bhutan”) AND (“North Korea”) AND (“India”) AND (“Indonesia”) AND (“Maldives”) AND (“Myanmar”) AND (“Nepal”) AND (“Sri Lanka”) AND (“Thailand”) AND (“Timor-Leste”). This search was limited to studies published between 1956 and 4 September 2016 and to titles, keywords and abstracts. To identify additional articles, a manual search was carried out, based on the bibliographies of the published studies (“snowballing”) on suicide and depression in each of the countries. Citations were managed using EndNote version X7.5. All information and documents were logged and subsequently checked and validated by members of the research team (HUA, MDH, AA and TRS).

Screening, eligibility, inclusion and exclusion

Papers were screened by reading the title and abstract. Studies not satisfying the inclusion criteria were excluded at this stage. Records published in languages other than English were excluded, as well as book chapters, conference proceedings, dissertations, editorials and commentaries. Papers were excluded if the type of depression-evaluation tool was not reported and if the study design was qualitative. The same inclusion and exclusion criteria were applied to the grey literature.

After removal of duplicates, the records were screened by two members of the research team (MDH, TRS), and independently cross-checked by others (HUA, AA and MTA). Any questions were resolved through discussion.

Subsequently, the full text of selected publications was assessed for eligibility by all the authors. MWAC and AU critically reviewed the papers and provided suggestions on the review process. They also provided suggestions for any additional sources of published or unpublished data. During the initial screening, articles where it was not clear whether the focus was on suicide attempts or deaths by suicide co-occurring with depression were included. The focus was assessed when reviewing the full-text version of these articles. In cases where this could not be determined by reading the full text, the papers were excluded. Any discrepancies were resolved by consensus.

Data extraction

All records included in the data set were read again and data were entered into a predefined spreadsheet. This format included details on the study objectives; period; methods; suicide/attempted suicide and depression metrics (including sex and age, if recorded); means of death by suicide; suicide definitions employed; and suicide reporting or registration system. For the purposes of this study, data on suicide ideation were included in the category on attempted suicide. All information in the spreadsheets was checked by three authors (MDH, AA and TRS) for accuracy and comprehensibility.

Quality appraisal

There is no clear consensus on a preferred tool for assessing the quality of observational studies. Some authors have used the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) method, but this practice is strongly discouraged since STROBE is a reporting tool and is not suitable for assessing the validity of published reports. The present study therefore applied a short quality-appraisal checklist that was previously used by Jordans et al. The tool consists of eight items:

- is the target/catchment population defined clearly?
- is the sampling method clearly described and adequate?
- do the characteristics of respondents match the target population?
- are the data-collection methods standardized?
- are the instruments/ways in which suicide was established reliable?
- are the survey instruments/ways in which suicide was established valid?

The articles were categorized and tabulated by (i) country; (ii) authors and year of publication; (iii) year of data collection; (iv) type and design of study; (v) study location and participant recruitment; (vi) sample size; (vii) tools used to identify depression among people who had died by suicide or attempted suicide; (viii) age ranges; and (ix) reported prevalence of depression in people who had died by or attempted suicide. All excluded studies and the reasons for exclusion were documented. The process for selection of the articles is displayed in Fig. 1.

Results

Selection of literature

A total of 688 articles were identified through the initial search – 669 through predefined database searching and 19 through other sources. One hundred and sixty-five articles were removed because of duplication and 523 articles were screened. A total of 252 studies met the inclusion criteria. The full text of 247 studies was assessed (full text could not be retrieved for five studies); 228 were excluded, mostly because they failed to meet the screening criteria or because they were found to have not focused on suicide attempts/deaths by suicide co-occurring with depression; not focused on the review objective; not mentioned the name of the tools used; or not fulfilled the required methodological
Depression among people who died by suicide

Table 1 summarizes the eight studies that reported the prevalence of depression among people who had died by suicide – one from Bangladesh, one from four from India, one from Indonesia, and two from Sri Lanka. Reported depression among people who had died by suicide varied widely among the eight studies (6.9–51.7%). None of the studies discussed the generalizability of their findings.

In the study from Bangladesh, 6.9% of 145 postmortem cases of people who had died by hanging were judged to have had depression. In the four studies from India, the proportions of people who died by suicide who had concurrent depression ranged from 8.7% to 27.8%. In Indonesia, of 60 people who died by suicide, 48 (80%) had at least one current psychiatric diagnosis, the most prevalent of which was major depressive episode (n = 31; 51.7%). In Sri Lanka, two community-based studies using psychological autopsy techniques reported similar findings, where more than one third of the people were thought to have moderate or severe depression at the time of their death by suicide.

Depression among the people who attempted suicide

Nine articles were found that reported on the prevalence of depression among people who had attempted suicide (see Table 2), eight from India and one from Sri Lanka. Almost all studies involved assessment of patients attending tertiary-care emergency services following a known or suspected suicide attempt. One involved community follow-up of such patients.

Table 1. Depression among people who died by suicide

<table>
<thead>
<tr>
<th>Country: author, year of publication</th>
<th>Study year: participants and setting</th>
<th>Number of deaths by suicide (age, years)</th>
<th>Proportion with depression, %</th>
<th>Assessment method/tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh: Ahmad and Hossain, 2010</td>
<td>2003–2004: Postmortem cases of people who had died by hanging, from a government medical college morgue</td>
<td>145 (60)</td>
<td>6.9</td>
<td>Inquest reports and information from decedents' attendants</td>
</tr>
<tr>
<td>India: Khan et al., 2005</td>
<td>2003: Postmortem cases from the mortuary of a tertiary-level facility, of people who had died by suicide</td>
<td>50 (15–35)</td>
<td>10.0</td>
<td>Interviews with decedents' relatives and friends</td>
</tr>
<tr>
<td>India: Kanchan and Menezes, 2008</td>
<td>2000–2004: Postmortem cases from a tertiary-care facility, of people who had died by suicide by poisoning</td>
<td>137 (16–82)</td>
<td>10.9 (male) 27.8 (female)</td>
<td>Autopsy records; police inquest reports</td>
</tr>
<tr>
<td>India: Shukla et al., 1990</td>
<td>1986–1987: Deaths by suicide reported in two leading daily city newspapers cross-validated with police records</td>
<td>115 (10–75)</td>
<td>8.7</td>
<td>Interviews with the decedents' relatives</td>
</tr>
<tr>
<td>India: Vijayakumar and Rajkumar, 1999</td>
<td>1994–1995: Deaths in an urban zone certified as suicide by the police; case–control study</td>
<td>100 (15–60)</td>
<td>17.0</td>
<td>Interview with a key informant (relative) using a predesigned questionnaire based on FH-RDC; Paykel's scale; SAP; and SCID</td>
</tr>
<tr>
<td>Indonesia: Kurihara et al., 2009</td>
<td>2007: Case–control psychological autopsy of consecutive deaths by suicide extracted from police records</td>
<td>60 (13–87)</td>
<td>51.7</td>
<td>DSSI; negative life-events checklist; SCID-1</td>
</tr>
<tr>
<td>Sri Lanka: Samaraweera et al., 2008</td>
<td>2002: Psychological autopsy of Sinhalese people who had died by suicide</td>
<td>27 (15–74)</td>
<td>37.0</td>
<td>Interviews with closest relative and next of kin, using the Psychological Autopsy Checklist (Sinhala); prescription and medical records, ICD-10</td>
</tr>
</tbody>
</table>

Using a range of screening and diagnostic tools, the reported prevalence of depression among people attempting suicide in these studies ranged between 22.0% and 59.7%. The study sample sizes ranged from 56 to 949. Owing to the heterogeneity of sampling strategies and methodologies of the studies, it was not possible to conduct a meta-analysis of the data.

**Suicide or attempted suicide in people with depression**

Only two articles, both from Thailand (table not shown), were found that reported on suicide in people with depression.\(^27\),\(^28\) One study reported that of the 2102 patients with mood disorders admitted to a psychiatric hospital in northern Thailand during 2007–2009, 235 (11.2%) were admitted owing to a suicide attempt. Of these, seven died. Of the remaining 228 patients, 175 had major depressive disorder and 53 had bipolar disorder. Of the patients with major depressive disorder, 27 (15.4%) reattempted suicide during the 1-year follow-up period.\(^27\) In the second, a study of current or past major depressive disorder, diagnosis was confirmed by the Mini International Neuropsychiatric Interview, Thai version, in 190 (76%) of 250 outpatients attending a tertiary-care facility in Bangkok during 2012–2014.\(^28\) Of the 190 patients with major depressive disorder, 38 (20%), 8 (4.2%) and 15 (7.9%) were assessed as being at low, medium and high risk of suicide, respectively.\(^28\)

**Discussion**

The aim of this systematic review was to identify, for countries of the WHO South-East Asia Region, first, the prevalence of depression among people who (i) die by or (ii) attempt suicide, and second, the proportion of people with depression who attempt or die by suicide. Only 19 papers were identified that fulfilled the eligibility criteria, from only five of the 11 countries

<table>
<thead>
<tr>
<th>Country, author, year of publication</th>
<th>Study year: participants and setting</th>
<th>Number attempting suicide (age, years)</th>
<th>Proportion with depression, %</th>
<th>Assessment method/tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>India: Latha et al., 1996(^{18})</td>
<td>1988–1992: Consecutive patients attending the emergency medical unit of a tertiary-care hospital following first-known attempted suicide</td>
<td>63 (10–51)</td>
<td>22.0</td>
<td>BDI; DSM-III; SIS</td>
</tr>
<tr>
<td>India: Unni and Mani, 1996(^{19})</td>
<td>1988–1991: Patients attending a psychiatric outpatient facility serving a mainly rural population, who were screened for suicidal ideation</td>
<td>154 (&lt;15 to &gt;46)</td>
<td>59.7</td>
<td>ICD-10</td>
</tr>
<tr>
<td>India: Jain et al., 1999(^{20})</td>
<td>1994: Patients admitted to tertiary care via emergency services following attempted suicide</td>
<td>56 (&gt;80% younger than 30)</td>
<td>37.5</td>
<td>BHS; HRSD; ICD-10; SIQ</td>
</tr>
<tr>
<td>India: Bhatia et al., 2000(^{21})</td>
<td>No year given: Consecutive patients referred to the tertiary-care psychiatry department following attempted suicide</td>
<td>58 (&lt;15 to &gt;45)</td>
<td>34.6 (adjustment disorder with depression) 20.7 (mixed anxiety and depressive disorder)</td>
<td>ICD-10; SIQ</td>
</tr>
<tr>
<td>India: Narang et al., 2000(^{22})</td>
<td>1996–1997: Patients presenting at a tertiary-care facility following a suicide attempt</td>
<td>100 (14–50; 73% younger than 30)</td>
<td>35.0 (mood disorders)</td>
<td>ICD-10</td>
</tr>
<tr>
<td>India: Parkar et al., 2006(^{23})</td>
<td>2000–2001: Patients presenting at a tertiary-care emergency department after putative deliberate self-harm</td>
<td>196 (18–60)</td>
<td>38.8</td>
<td>EMIC; SCID</td>
</tr>
<tr>
<td>India: Chandrasekaran and Gnanaselane, 2008(^{24})</td>
<td>2002: 2-year follow-up of people presenting to the emergency department of a tertiary-care facility after their first suicide attempt</td>
<td>293 (≥18)</td>
<td>25.6 (45% of those who attempted suicide again; 20% of those who did not)</td>
<td>BHS; GAF; ICD-10; MADRS; MINI; MSPSS; PSLES; RRRS; SIS</td>
</tr>
<tr>
<td>India: Kar, 2010(^{25})</td>
<td>1994–1996: Consecutive patients who had attempted suicide and been admitted to a tertiary-care hospital</td>
<td>149 (18–60)</td>
<td>24.8</td>
<td>LASPCS; LSARS; PSLES; RRRS</td>
</tr>
<tr>
<td>Sri Lanka: Rajapakse et al., 2014(^{26})</td>
<td>2012–2013: Persons admitted to a tertiary-care hospital for medical management of non-fatal self-poisoning</td>
<td>949 (22, median)</td>
<td>51.1</td>
<td>AUDIT; GAD-7; PDS; PHQ-9</td>
</tr>
</tbody>
</table>

**Table 2. Depression among people who attempted suicide**

AUDIT: Alcohol Use Disorders Identification Test; BDI: Beck Depression Inventory; BHS: Beck Hopelessness Scale; DSM: Diagnostic and Statistical Manual of Mental Disorders; EMIC: Explanatory Model Interview Catalogue; GAD-7: Generalized Anxiety Disorder questionnaire; GAF: Global Assessment of Functioning; HRSD: Hamilton Rating Scale for Depression; ICD-10: International Statistical Classification of Diseases and Related Health Problems, 10th revision; LASPCS: Los Angeles Suicide Prevention Center Scale; LSARS: Lethality of Suicide Attempt Rating Scale; MADRS: Montgomery–Asberg Depression Rating Scale; MINI: Mini International Neuropsychiatric Interview; MSPSS: Multidimensional Scale of Perceived Social Support; PDS: Peradeniya Depression Scale; PHQ-9: Patient Health Questionnaire; PSLES: Presumptive Stressful Life Events Scale; RRRS: Risk Rescue Rating Scale; SCID: Structured Clinical Interview for DSM Disorders; SIQ: Suicidal Intent Questionnaire; SIS: Suicide Intent Scale.
in the region: Bangladesh, India, Indonesia, Sri Lanka and Thailand. No eligible data were found for Bhutan, Democratic People’s Republic of Korea, Maldives, Myanmar, Nepal or Timor-Leste. During the screening and selection process, it was clear that evidence on the relation between suicide and depression is scarce, due in part to poor-quality data, underreporting and misclassification. Factors such as the varying suicide registration systems used by different countries compound the challenges in assessing this public health issue.

**Depression among people who died by suicide**

This study located only eight papers, from four countries of the WHO South-East Asia Region, on depression among people who died by suicide. A previous review of the literature noted that the prevalence of depression or other diagnosable mental disorders recorded by psychological autopsy for people who died by suicide in Asian countries was lower than that in non-Asian high-income countries. In the present review, the prevalence of depression among people who died by suicide ranged from 6.9% to 51.7%. Despite wide ranges in prevalence estimates and variability among the studies, these data suggest that depression among people who died by suicide is a public health issue in the WHO South-East Asia Region that is worthy of further investigation.

In Bangladesh, the most recent estimate of the annual suicide rate is 39.6 per 10,000 population. The number of deaths by suicide in Bangladesh was 10,167, or 1.40% of the total deaths in 2012. A nationwide survey on suicide has not yet been conducted in Bangladesh but depressive disorders were the fourth-leading cause of disability in the country in 2015. In the single study from Bangladesh retrieved in the present study, depression was rarely reported by relatives as a cause of the suicide. The strong stigma associated with mental disorders in Bangladesh means this figure is likely to be an underestimation, with relatives being unwilling to disclose depression.

In Sri Lanka, between 1985 and 1989, male suicide rates were the second-highest in the world. A steady decline has been apparent in the past two decades. In 2014, WHO listed Sri Lanka as having the fourth-highest suicide rate globally, at 28.8 per 100,000 population. However, it should be noted that Sri Lanka was one of the 112 Member States for which the WHO report noted that the data quality was poor and so should be interpreted with caution. The Sri Lanka estimate for this WHO report was modelled using data submitted to WHO in 2006. A subsequent analysis, using annually collected police data, calculated the age-standardized suicide rate in Sri Lanka in 2012 as 17.1 per 100,000. In this review, nearly 40% of deaths by suicide reported in the two eligible articles were in individuals who had moderate or severe depression.

Suicide in Indonesia is an increasing concern. There were 9,105 suicide deaths in Indonesia in 2012, or 0.65% of total deaths, and depressive disorders were the fifth-leading cause of disability in 2015. For Indonesia, only one psychological autopsy study was found; this study had a high participation rate of family members of both people who had died by suicide and controls, and involved face-to-face direct interviews with key informants, all of whom were close relatives rather than non-family members such as friends or visiting nurses. Major depressive episode was diagnosed in more than half of the people who died by suicide.

India accounted for the highest estimated number of suicides in the world in 2012. The estimated suicide rate in the WHO South-East Asia Region is the highest of all WHO regions. Suicide rates show a peak among the young and the elderly. In India, a nationally representative survey estimated that, in 2010, about 3% of deaths at age 15 years and older (2684/95,335) were due to suicide. For example, among eligible studies in a systematic review of suicide in India, verbal-autopsy studies in several rural areas reported up to eight-fold higher suicide prevalence than the official national suicide data. The same review noted that the quality of the information about suicide in India is quite limited and also suggested that depression plays a less dominant role in suicide in India than in high-income countries.

**Depression among people who attempted suicide**

This systematic review identified nine studies in the WHO South-East Asia Region, from India and Sri Lanka, that provided data on the proportion of people attempting suicide who had depression. Although these studies noted other psychiatric disorders among people who attempted suicide, depressive disorders were the most prominent. Depressive episode was a significant clinical condition in people attempting suicide in India. Notably, the stigma associated with suicide and depression in India may indicate significant underestimation of both.

In one study from India, which followed up people who had been hospitalized after a first suicide attempt, baseline depression was present in a higher proportion of people who went on to attempt suicide again (45%) than those who did not (20%); baseline presence of major depression and social maladaptation were significant predictors for repeat suicide attempts. The one study retrieved from Sri Lanka reported that depression was present in 50% of males and over 50% of females who had attempted self-poisoning, and was the most important predictor of suicidal intent in both sexes.

**Suicide or attempted suicide in people with depression**

Only two studies were found reporting suicidal behaviour among people with depression, and both were from Thailand. In both, the population studied was patients receiving psychiatric care. A systematic review of all types of mortality associated with depression reported that suicide accounted for 16–19% of the mortality in the studies retrieved on deaths among patients with depression who were receiving psychiatric care. In South-East Asia, mental illness and suicide are widely stigmatized, both socially and culturally. Suicide risk varies with the type of depressive disorder and with a range of biopsychosocial factors, including age, sex, previous history, family history, social support, religious belief and occupations. Social, psychological, cultural and other factors can interact to lead a person to suicidal behaviour, but the stigma attached to mental disorders and suicide means that many individuals feel unable to seek help. In May 2013, the Sixty-sixth World Health Assembly adopted the first-ever WHO mental health action plan, to demonstrate their increased commitment to mental health by achieving specific targets. Suicide prevention is an integral part of the WHO Mental health action plan 2013–2020, with the goal of reducing the rate of suicide in countries by 10% by 2020.
Conclusion

Few reliable data were retrieved on depression and suicide in countries of the WHO South-East Asia Region. The main limitations to synthesizing the evidence retrieved were due to heterogeneity of the study populations, settings and design and assessment tools used. A major source of additional bias is the use of data extracted from police reports. In addition, there are significant inherent difficulties related to the retrospective assessment of depression in persons attempting or dying by suicide; thus, all data should be interpreted with caution.

Most of the studies found were from India. Not a single article was found focusing on depression and suicide from the Democratic People’s Republic of Korea or Timor-Leste. Moreover, during the evaluation phase, screened articles from Bhutan, Maldives, Myanmar and Nepal failed to qualify for inclusion. The study inclusion criteria were limited to cross-sectional studies, case-control studies, and baseline data of a cohort study where sample size and point prevalence were presented. Several articles had to be excluded because the findings were incomplete and/or self-contradictory. This review focuses only on the presence of depression at the time of suicide death or attempt. Data on other relevant factors, including severity of depression, social-personal circumstances and suicide method were not explored.

It is possible that the small number of studies found reflects the belief in countries of the WHO South-East Asia Region that the role of depression in suicide is not as important as in other regions, and so the topic has not been as extensively reviewed. This review highlights the lack of knowledge on depression and suicide in most countries of the South-East Asia Region and the need to understand this phenomenon better, to inform suicide-prevention strategies.

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References

Alcohol consumption among adults in Bangladesh: results from STEPS 2010

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Abstract

Background Alcohol use is a risk factor for the development of noncommunicable diseases. National data are needed to assess the prevalence of alcohol use in the Bangladeshi population. The objective of this study was to describe the prevalence and patterns of alcohol use among men and women of rural and urban areas of Bangladesh. Additionally, predictors of ever alcohol use were also identified.

Methods A nationally representative cross-sectional survey (STEPS 2010) was conducted on 9275 adults between November 2009 and April 2010. Participants were selected using multi-stage random cluster sampling. Data on several risk factors for noncommunicable diseases, including alcohol use, were collected by an interviewer-administered questionnaire.

Results Among the total population, 5.6% (n = 519) reported to have ever drunk alcohol and 94.4% (8756) were lifetime abstainers; 2.0% (n = 190) of participants reported to have drunk alcohol within the last 12 months. Of these, 94.7% (n = 180) were men. Only 0.9% (n = 87) of the total population had drunk alcohol within the last 30 days and were categorized as current drinkers. Among current drinkers, 77.0% (n = 67) were defined as binge drinkers, having had at least one episode of heavy drinking in this time period; 92.0% (n = 80) were current smokers and 59.8% (n = 52) had either no formal education or less than primary school education. Ever alcohol use was more common among men, those who live in urban areas and smokers.

Conclusion Alcohol use is low in Bangladesh; however, those who do use alcohol frequently binge drink, which is a public health concern. Targeted efforts should be made on these specific groups, to control and prevent the continued use of alcohol in Bangladesh.

Keywords: alcohol use, Bangladesh, noncommunicable disease, risk factors

Background

The global burden of noncommunicable diseases continues to be a significant public health issue and a priority of the World Health Organization (WHO).1 Currently, noncommunicable diseases are the leading cause of death globally: in 2012, they were responsible for 38 million (68%) of the world's total of 56 million deaths.1 Almost 75% of all deaths due to noncommunicable diseases, and the majority of premature deaths (82%), occur in low- and middle-income countries.1

In Bangladesh, the burden of noncommunicable diseases is also rising.2 According to the Global Burden of Disease Study 2015, the four top causes of death in Bangladesh are noncommunicable diseases: cerebrovascular disease, ischaemic heart disease, chronic obstructive pulmonary disease and diabetes.3 Alcohol use has been identified as a causal factor in more than 200 disease and injury conditions,4 and has been associated with a risk of developing various health problems, including alcohol dependence, liver cirrhosis, cancers and injuries.5 Additionally, alcohol use is estimated to contribute to 2.5 million deaths globally and 2.3% of all deaths in the WHO South-East Asia Region.6 As such, recent international policy frameworks and action plans, such as the WHO Global strategy to reduce the harmful use of alcohol,7 and the WHO Global action plan for the prevention and control of noncommunicable disease 2013–2020,8 have encouraged nations to place an increased national focus to address the harmful use of alcohol and to develop appropriate policies to control alcohol use.

In Bangladesh, an alcoholic beverage is defined as any liquor with an alcohol content of ≥0.5%. These alcoholic beverages include beer (5% alcohol in volume), wine (12% alcohol in volume), spirits (40% alcohol in volume) and locally made alcoholic beverages, which have variable alcohol
content. Locally produced alcoholic beverages are made from sorghum, maize, millet, rice, cider, fruit wine or fortified wine (tari, bangle mod, haria, choani, do chuani, mohua, etc.). In Bangladesh, the consumption of alcohol is strictly prohibited by law, for religious reasons. Despite this prohibition, alcohol is available across the country and is produced locally. There are government-approved alcohol-producing companies, which produce local brands of vodka, rum, whisky, gin and brandy. Additionally, Bangladesh is home to a privately licensed brewery, which uses imported malts and hops. Distilleries located in different areas of Bangladesh use molasses from local sugar mills as raw material for manufacturing spirits.9,10

In rural areas of Bangladesh, crude forms of alcohol are also produced, by fermentation of boiled rice, sugar-cane and molasses.11

Harmful use of alcohol is increasingly becoming a national concern and very few people with alcohol problems in Bangladesh seek de-addiction treatment.12 Anecdotal information obtained from law-enforcement authorities and local health-care providers indicates that alcohol misuse is becoming a common problem in Bangladesh, particularly in urban areas. However, national data are needed to assess this burden. In order to assess the prevalence and patterns of alcohol use in Bangladesh, the national survey of risk factors for noncommunicable disease13 was developed to include questions on alcohol consumption. This paper reports the prevalence and patterns of alcohol use and predictive factors associated with alcohol use in the population, gathered from this nationally representative survey.

Methods

The national survey of risk factors for noncommunicable disease was a cross-sectional study conducted by the Bangladesh Society of Medicine, under the guidance of the Directorate General of Health Services, and with technical assistance from the WHO Country Office for Bangladesh. This survey was carried out in Bangladesh from November 2009 to April 2010, utilizing the WHO STEPwise Surveillance (STEPS) approach.13 The survey used a multistage geographically clustered sample design to produce nationally representative data for Bangladesh. Data were collected from 200 mahalla (urban areas) and 200 mauza (rural areas) from 62 districts of Bangladesh, using digital technology. Targeted households (11 200) were marked as sites to recruit either male (5600) or female (5600) respondents, to ensure a gender balance. One person per household was randomly selected to be included in this study. A total of 9947 individuals from 10 991 households were approached to participate in the survey. A total of 9275 (4312 men and 4963 women) non-institutionalized adults aged ≥25 years agreed to participate, leading to a response rate of 93.2%. The sampling frame was updated by the Bangladesh Bureau of Statistics in 2009. Further details of the survey implementation and methodology have been previously reported.13

Survey questionnaires

The WHO STEPwise questionnaire was utilized,14 with minor adaptations. Data on sociodemographic and behavioural risk factors were collected during STEP 1. The household component of the questionnaire included a 20-item index to assess assets and wealth. Information on alcohol use was collected from all participants, in privacy. Relevant information on age, area of residence, education, current occupation and tobacco use was collected.

As per the WHO STEPwise core questions on alcohol, participants were asked whether they had ever consumed alcohol and whether they had consumed alcohol in the past 12 months and in the past 30 days. “Current alcohol users” were defined as those who had consumed alcohol in the past 30 days. Data on the number of standard drinks consumed and at what frequency over the past 12 months were also collected. One standard drink was defined as 10 g of ethanol. Interviewers utilized showcards, which included depictions of various types of standard drinks to improve the accuracy of participants’ responses. The types of standard drinks depicted included: one standard bottle of regular beer; one single measure of spirits; one medium-sized glass of wine; and one measure of aperitif. Participants were asked about the frequency of consuming alcohol and the number of standard drinks consumed during individual drinking sessions over the past 30 days. For the purposes of this study, “binge drinking” was defined as at least one occasion of “heavy” consumption, which was more than or equal to five standard drinks for a man and four for a woman (as defined by the National Institute on Alcohol Abuse and Alcoholism)15 during the past 30 days. The questionnaire was implemented in standard Bangla, and was field-tested before deployment of the professional field-team for data collection.

Data management and analysis

Data collected during survey administration were entered into handheld personal devices (iPAQ [iPAQ Windows Mobile 5.0 Operating System] by Hewlett-Packard Company, Palo Alto, California, United States of America [USA]) by interviewers. Data were transferred from the field to a file-transfer server on a daily basis, according to the standard protocol of the study. Data were standardized and cleaned by a professional data manager at central level. Univariate analyses of data were conducted to calculate proportions and identify patterns of alcohol use across the following subgroups: lifetime abstainers, ever alcohol users, alcohol use in the last 12 months, current alcohol users, and binge drinkers. Data on tobacco use (smoked and smokeless) were also collected.

The proportions of the population in each group were described and 95% confidence intervals calculated. Additionally, multivariable logistic regression was conducted to identify predictors of ever alcohol consumption. Initially, unadjusted logistic regression was conducted and later an adjusted model was developed to include demographic variables that were significant ($P < 0.05$) during univariate analyses. These variables included sex, area of residence, marital status, age, education, occupation and tobacco use. All analyses were conducted using Stata/SE 12.0 (StataCorp LP, Texas, USA) software package.

Ethical considerations

Ethical clearance was obtained from Bangladesh Medical Research Council (BMRC). Before the interview was conducted, written (or thumb-print) consent was obtained from each participant in Bangla, as per BMRC guidelines.
Results

Background characteristics
Sociodemographic details of this cohort have been presented and published previously.13 Of the 9275 respondents, 4312 (46.6%) were male and the total population’s mean age was 42.4 years, with a standard deviation of 13.5 years. Half of the participants resided in urban areas, as ensured through the recruitment method and study design. The median duration of schooling was 4.4 years (5.1 years in men and 3.8 years in women). About 10% were salaried government and nongovernment employees, 10.9% businessmen, 10.8% farmers, 10.4% labourers, 3.6% self-employed, 5.3% retired or unemployed, 44.9% homemakers and 4.6% in other occupations. Almost 90% were Muslims, which is consistent with Bangladesh census data.13

Alcohol consumption overall
Overall, 94.4% (n = 8756) of the total population reported they were lifetime abstainers from alcohol. Five hundred and nineteen (5.6%) participants reported they had ever drunk alcohol in their lifetime. Among men, this proportion was elevated at 11.7% (n = 504); however, very few (n = 15, 0.3%) women reported to have ever drunk alcohol; 2.0% (n = 190) of the population reported they had drunk alcohol in the last 12 months and 0.9% (n = 87) were categorized as current alcohol users, i.e. had consumed alcohol in the past 30 days. The majority of current alcohol users were male (n = 81) (see Table 1).

Current alcohol users
The mean age of current alcohol users was 39.4 years and their median duration of schooling was 5 years. The proportion of overall, male and female current drinkers was 0.9% (n = 87), 1.9% (n = 81) and 0.1% (n = 6) respectively. The prevalence of current alcohol users among all respondents was similar across all age groups; however, it was highest among the age group 35–44 years (1.1%) and lowest in the oldest age group (≥65 years; 0.1%). Of note, the highest absolute number of current drinkers was in the youngest age category of 25–34 years (n = 33) (see Table 1). The majority of current drinkers resided in urban areas (64.3%); 92.0% (n = 80) were current smokers; and 59.8% (n = 52) had either no formal education or less than primary school education. In the past 30 days, current drinkers had consumed at least one drink, an average of 5.8 (95% confidence interval [CI]: 4.2–7.4) times. The average number of standard drinks consumed per drinking occasion was 3.6 (95% CI: 2.7–4.4) (see Table 2).

Binge drinkers
Binge drinkers had a mean age of 39.7 years and a median duration of schooling of 5 years (data not shown). The prevalence of binge drinking (n = 67; 77.0%) among current drinkers (n = 87) was 77.0% (see Table 3). Binge drinkers had experienced an average of 3.9 (95% CI: 2.6–5.1) episodes of heavy drinking in the past 30 days and consumed an average of 3.9 (95% CI: 2.9–5.0) standard drinks per drinking occasion (see Table 2).

Predictors of ever alcohol use
In the study population, the adjusted odds of a user of alcohol being male were 11.6 (95% CI: 6.0–22.5) times those of being female (see Table 4). Additionally, the adjusted odds of alcohol use among those who resided in an urban area were 2.91 (95% CI: 2.35–3.59) times those of individuals residing in a rural area. Compared with those aged 25–39 years, there was a 13% decrease in odds (adjusted OR: 0.87; 95% CI: 0.69–1.08) of alcohol use among those aged 40–54 years, although this was not statistically significant. When compared with those aged ≥55 years, there was a 39% relative decrease in the odds of alcohol use and this decrease was statistically significant (adjusted OR: 0.62; 95% CI: 0.47–0.83). The odds of alcohol use among tobacco users were 3.38 (95% CI: 2.58–4.32) times the odds among non-tobacco users.

Discussion
To the authors’ knowledge, this study presents the first national survey data on alcohol use and predictors of alcohol use among Bangladeshi adults. Through this assessment, it was found that the prevalence of alcohol use was generally very low in the population. The prevalence of lifetime abstainers among the total population was 94.4%. Among current alcohol users (0.9%), a large proportion reported to be binge drinkers (77.0%). This is of particular concern, as, although alcohol use is low, those who do drink alcohol in Bangladesh consume it in high proportions. Such misuse of alcohol may lead to chronic health conditions among this subpopulation and should be examined closely. Additionally, it was found that alcohol users in Bangladesh are generally male, live in urban areas, and are likely to be smokers. Future interventions to reduce the burden of alcohol use and binge drinking should be targeted at these populations.

Results from this survey indicate the large majority of Bangladeshi adults are lifetime abstainers of alcohol. The Global status report on alcohol and health 2014 reported a similar prevalence of lifetime abstinence from alcohol among men and women in Bangladesh (90.7% and 99.7% respectively), based on 2010 data.5 As Bangladesh is a predominantly Muslim country and alcohol consumption is illegal, it is not surprising that lifetime abstainers were identified at a higher proportion than in studies conducted in other countries in South Asia. Between 2005 and 2006, a nationally representative sample of 5000 adults was assessed in Sri Lanka for alcohol use among the general population.16 It was found that 51.9% of men and 1.2% of women were categorized as current drinkers, indicating that less than half of men are lifetime abstainers; however, women appear to have similar drinking patterns. In India, the prevalence of lifetime abstainers among the overall population, men and women is 74.2%, 90.0% and 59.3% respectively.6

Current alcohol consumption in Bangladesh is very similar to that in some other predominantly Muslim countries such as Pakistan (1.2%).5,6 In contrast, high-income countries have a much higher prevalence of alcohol use in men and women.17 However, it should be noted that current proportions of drinking may be significantly underreported, owing to social stigma and prohibition of alcohol use within both Bangladesh and the broader subcontinent.18 According to the present study, current alcohol drinkers were most likely to be aged 25–44 years. This finding is similar to many other regional studies.19–21 The majority of the current drinkers reported binge drinking (77.0%). Similar to previous studies done elsewhere,22–24 the majority of binge drinkers were men, from urban areas, and reported that they smoked.
Table 1. Prevalence of alcohol use by selected sociodemographic factors among 9275 adults in the noncommunicable disease risk-factor survey of Bangladesh, 2010

<table>
<thead>
<tr>
<th>Sociodemographic factor</th>
<th>Number of subjects</th>
<th>Total</th>
<th>Men</th>
<th>Women</th>
<th>Total</th>
<th>Men</th>
<th>Women</th>
<th>Total</th>
<th>Men</th>
<th>Women</th>
<th>Total</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age group, years</strong></td>
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<tr>
<td>25–34</td>
<td>3164</td>
<td>2995 (94.7)</td>
<td>1966 (99.7)</td>
<td>169 (5.3)</td>
<td>163 (13.9)</td>
<td>6 (0.3)</td>
<td>85 (2.7)</td>
<td>83 (7.1)</td>
<td>2 (0.1)</td>
<td>33 (1.0)</td>
<td>32 (2.7)</td>
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<tr>
<td>35–44</td>
<td>2531</td>
<td>2388 (94.4)</td>
<td>1450 (99.7)</td>
<td>142 (5.6)</td>
<td>137 (12.7)</td>
<td>5 (0.3)</td>
<td>60 (2.4)</td>
<td>56 (5.2)</td>
<td>4 (0.3)</td>
<td>28 (1.1)</td>
<td>26 (2.4)</td>
<td>2 (0.1)</td>
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<tr>
<td>45–54</td>
<td>1847</td>
<td>1731 (93.7)</td>
<td>873 (99.7)</td>
<td>116 (6.3)</td>
<td>113 (11.6)</td>
<td>3 (0.3)</td>
<td>26 (1.4)</td>
<td>23 (2.4)</td>
<td>3 (0.3)</td>
<td>16 (0.9)</td>
<td>14 (1.4)</td>
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<tr>
<td>55–64</td>
<td>1015</td>
<td>949 (93.5)</td>
<td>429 (99.7)</td>
<td>66 (6.5)</td>
<td>65 (11.1)</td>
<td>1 (0.2)</td>
<td>15 (1.5)</td>
<td>14 (2.4)</td>
<td>1 (0.2)</td>
<td>9 (0.9)</td>
<td>8 (1.4)</td>
<td>1 (0.2)</td>
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<tr>
<td>≥65</td>
<td>718</td>
<td>692 (96.4)</td>
<td>210 (100)</td>
<td>26 (3.6)</td>
<td>25 (5.1)</td>
<td>0 (0.0)</td>
<td>4 (0.6)</td>
<td>4 (0.8)</td>
<td>0 (0.0)</td>
<td>1 (0.1)</td>
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<td><strong>Area of residence</strong></td>
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</tr>
<tr>
<td>Rural</td>
<td>4646</td>
<td>4502 (96.9)</td>
<td>2500 (99.6)</td>
<td>144 (3.1)</td>
<td>135 (6.3)</td>
<td>9 (0.4)</td>
<td>55 (1.2)</td>
<td>47 (2.2)</td>
<td>8 (0.3)</td>
<td>31 (0.7)</td>
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<td>5 (0.2)</td>
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<td>Urban</td>
<td>4629</td>
<td>4254 (91.9)</td>
<td>1986 (99.7)</td>
<td>375 (8.1)</td>
<td>369 (16.9)</td>
<td>6 (0.2)</td>
<td>135 (2.9)</td>
<td>133 (6.1)</td>
<td>2 (0.1)</td>
<td>56 (1.2)</td>
<td>55 (2.5)</td>
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<tr>
<td>No education</td>
<td>3888</td>
<td>3728 (95.9)</td>
<td>2248 (99.5)</td>
<td>160 (4.1)</td>
<td>149 (9.2)</td>
<td>11 (0.5)</td>
<td>59 (1.5)</td>
<td>50 (3.1)</td>
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<td>27 (0.7)</td>
<td>21 (1.3)</td>
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<td>Primary or less</td>
<td>2476</td>
<td>2351 (95.0)</td>
<td>1368 (99.9)</td>
<td>125 (5.0)</td>
<td>124 (11.2)</td>
<td>1 (0.1)</td>
<td>45 (1.8)</td>
<td>45 (4.1)</td>
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<td>25 (2.3)</td>
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<tr>
<td>Secondary school</td>
<td>2053</td>
<td>1890 (92.1)</td>
<td>1027 (99.9)</td>
<td>163 (7.9)</td>
<td>162 (15.8)</td>
<td>1 (0.1)</td>
<td>59 (2.9)</td>
<td>59 (5.8)</td>
<td>0 (0.0)</td>
<td>24 (1.2)</td>
<td>24 (2.3)</td>
<td>0 (0.0)</td>
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<tr>
<td>College or postgraduate</td>
<td>858</td>
<td>787 (91.7)</td>
<td>305 (99.6)</td>
<td>71 (8.3)</td>
<td>69 (12.5)</td>
<td>2 (0.7)</td>
<td>27 (3.1)</td>
<td>26 (4.7)</td>
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<tr>
<td><strong>Occupation</strong></td>
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<tr>
<td>Unemployed/retired</td>
<td>530</td>
<td>487 (91.9)</td>
<td>76 (100)</td>
<td>43 (8.1)</td>
<td>43 (9.5)</td>
<td>0 (0.0)</td>
<td>13 (2.5)</td>
<td>13 (2.9)</td>
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<td>5 (0.9)</td>
<td>5 (1.1)</td>
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<td>Professional employment</td>
<td>3516</td>
<td>3140 (89.3)</td>
<td>360 (98.9)</td>
<td>376 (10.7)</td>
<td>372 (11.8)</td>
<td>4 (1.1)</td>
<td>138 (3.9)</td>
<td>134 (4.6)</td>
<td>4 (1.1)</td>
<td>70 (2.0)</td>
<td>67 (2.1)</td>
<td>3 (0.8)</td>
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<td>Industrial worker/day labourer</td>
<td>678</td>
<td>621 (91.6)</td>
<td>101 (98.1)</td>
<td>57 (8.4)</td>
<td>55 (9.6)</td>
<td>2 (1.9)</td>
<td>22 (3.2)</td>
<td>20 (3.5)</td>
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<td>Housemaker</td>
<td>4161</td>
<td>4156 (99.9)</td>
<td>4134 (99.9)</td>
<td>5 (0.1)</td>
<td>0 (0.0)</td>
<td>5 (0.1)</td>
<td>2 (0.0)</td>
<td>0 (0.0)</td>
<td>2 (0.1)</td>
<td>0 (0)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td></td>
</tr>
<tr>
<td>Otherc</td>
<td>390</td>
<td>352 (90.3)</td>
<td>277 (98.6)</td>
<td>38 (9.7)</td>
<td>34 (31.2)</td>
<td>4 (1.4)</td>
<td>15 (3.8)</td>
<td>13 (11.9)</td>
<td>2 (0.7)</td>
<td>3 (0.8)</td>
<td>2 (1.8)</td>
<td>1 (0.4)</td>
<td></td>
</tr>
<tr>
<td><strong>Tobacco use</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-tobacco user</td>
<td>4546</td>
<td>4457 (98.0)</td>
<td>3248 (99.8)</td>
<td>89 (2.0)</td>
<td>83 (6.4)</td>
<td>6 (0.2)</td>
<td>26 (0.6)</td>
<td>22 (1.7)</td>
<td>4 (0.1)</td>
<td>7 (0.2)</td>
<td>6 (0.5)</td>
<td>1 (0.0)</td>
<td></td>
</tr>
<tr>
<td>Tobacco user</td>
<td>4729</td>
<td>4299 (90.9)</td>
<td>1700 (99.5)</td>
<td>430 (9.1)</td>
<td>421 (13.9)</td>
<td>9 (0.5)</td>
<td>164 (3.5)</td>
<td>158 (5.2)</td>
<td>6 (0.4)</td>
<td>80 (1.7)</td>
<td>75 (2.5)</td>
<td>5 (0.3)</td>
<td></td>
</tr>
<tr>
<td><strong>Total (unadjusted)</strong></td>
<td>9275</td>
<td>8756 (94.4)</td>
<td>4948 (99.7)</td>
<td>519 (5.6)</td>
<td>504 (11.7)</td>
<td>15 (0.3)</td>
<td>190 (2.0)</td>
<td>180 (4.2)</td>
<td>10 (0.2)</td>
<td>87 (0.9)</td>
<td>81 (1.9)</td>
<td>6 (0.1)</td>
<td></td>
</tr>
<tr>
<td><strong>Total (adjusted)</strong></td>
<td>9275</td>
<td>8728 (94.1)</td>
<td>4948 (99.7)</td>
<td>510 (5.5)</td>
<td>496 (11.5)</td>
<td>10 (0.2)</td>
<td>176 (1.9)</td>
<td>177 (4.1)</td>
<td>10 (0.2)</td>
<td>87 (0.9)</td>
<td>78 (1.8)</td>
<td>6 (0.1)</td>
<td></td>
</tr>
</tbody>
</table>

*aDrank alcohol in the last 30 days.
*bProfessional includes: government employees, nongovernment employees, business owners, farmers, agricultural workers and other self-employed individuals.
*cOther includes: beggars, rickshaw pullers, cooks, carpenters, tailors, security guards, migrant workers and fishermen.
*dTobacco use includes smokeless and smoked tobacco.
*eTotal age-specific prevalence standardized to WHO-recommended global age distribution.
Table 2. Drinking patterns among current drinkers in the noncommunicable disease risk-factor survey of Bangladesh, 2010

<table>
<thead>
<tr>
<th>Drinking pattern</th>
<th>Current drinkers, % (95% CI)</th>
<th>Binge drinkers*(^a,b), % (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total (n = 87)</td>
<td>Men (n = 81)</td>
</tr>
<tr>
<td>Average number of occasions with at least one drink</td>
<td>5.8 (4.2 to 7.4)</td>
<td>5.6 (4.0 to 7.23)</td>
</tr>
<tr>
<td>Average number of standard drinks(^c) consumed on one occasion</td>
<td>3.6 (2.7 to 4.4)</td>
<td>3.7 (2.7 to 4.6)</td>
</tr>
<tr>
<td>Average of largest number of standard drinks consumed on one occasion</td>
<td>4.5 (3.0 to 5.9)</td>
<td>4.7 (3.1 to 6.3)</td>
</tr>
<tr>
<td>Average number of episodes of heavy drinking</td>
<td>3.1 (2.0 to 4.1)</td>
<td>3.2 (2.0 to 4.3)</td>
</tr>
</tbody>
</table>

CI: confidence interval.
*Prevalence among current users.
*Defined as consumption of ≥50 g of ethanol in men and ≥40 g in women on at least one occasion in the past 30 days.
*Standard drink = 10 g of ethanol.

Table 3. Prevalence of binge drinking among current alcohol users in the noncommunicable disease risk-factor survey of Bangladesh, 2010

<table>
<thead>
<tr>
<th>Sociodemographic factor</th>
<th>Total number of current drinkers(^c)</th>
<th>Binge drinkers*(^a,b), n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Men</td>
</tr>
<tr>
<td>Age group, years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25–34</td>
<td>33</td>
<td>23</td>
</tr>
<tr>
<td>35–44</td>
<td>28</td>
<td>25</td>
</tr>
<tr>
<td>45–54</td>
<td>16</td>
<td>12</td>
</tr>
<tr>
<td>55–64</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>≥65</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Area of residence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>31</td>
<td>23</td>
</tr>
<tr>
<td>Urban</td>
<td>56</td>
<td>44</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No education</td>
<td>27</td>
<td>22</td>
</tr>
<tr>
<td>Primary or less</td>
<td>25</td>
<td>16</td>
</tr>
<tr>
<td>Secondary school</td>
<td>24</td>
<td>19</td>
</tr>
<tr>
<td>College or postgraduate</td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployed/retired</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Professional employment((^d)</td>
<td>70</td>
<td>53</td>
</tr>
<tr>
<td>Industrial worker/day labourer</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>Housemaker</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other((^e)</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Tobacco use((^f)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-tobacco user</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>Tobacco user</td>
<td>80</td>
<td>63</td>
</tr>
<tr>
<td>Total (unadjusted)</td>
<td>87</td>
<td>67</td>
</tr>
<tr>
<td>Total (adjusted)*(^g)</td>
<td>87</td>
<td>69</td>
</tr>
</tbody>
</table>

*Percentages were calculated using the total number of current alcohol users as the denominator for each subgroup.
*Defined as consumption of ≥50 g of ethanol in men and ≥40 g in women on at least one occasion in the past 30 days.
*Drank alcohol in the last 30 days.
\(\(^d\)|Professional includes: government employees, nongovernment employees, business owners, farmers, agricultural workers and other self-employed individuals.
\(\(^e\)|Other includes: beggars, rickshaw pullers, cooks, carpenters, tailors, security guards, migrant workers and fishermen.
\(\(^f\)|Tobacco use includes smokeless and smoked tobacco.
\(\(^g\)|Total age-specific prevalence standardized to WHO-recommended global age distribution.

In this study, the mean age of the current alcohol consumers was 39.4 years and for binge drinkers it was 39.7 years. Previous studies have found that the mean age of alcohol consumers in Kolkata, India was 31.4 years, and all hazardous or harmful consumers (i.e. binge drinkers) were aged 20–39 years. Data from Sri Lanka, collected between 2005 and 2006, estimated that the mean age of current drinkers was 46.1 years and the overall prevalence of current alcohol users was 23.7%, a prevalence that was higher than in neighbouring countries in the subcontinent. These patterns have been linked to cultural differences among these subpopulations, which may be present in the current study population as well.
Previous studies have shown a strong association between current smoking and both current and binge drinking. In this study, a similar association was found: 92.0% of current drinkers and 94.0% of binge drinkers were current smokers. Therefore, a combined intervention may have an added benefit in the population to reduce the prevalence of both smoking and alcohol use.

In 1990, the Ministry of Home Affairs in Bangladesh published the Narcotic Control Act (NCA), which outlines national policies on alcohol tax rates, selling and serving of alcohol, alcohol advertisements, legal blood alcohol concentration when driving, and alcohol licences. However, the non-Muslims residing in the country and foreigners visiting the country are not subject to such restrictions, as long as they confine their alcohol consumption to their private spaces. Some restaurants, night-clubs, hotels and bars in the country, especially those in tourist destinations, are allowed to sell alcohol. Although the NCA provides clear restrictions on alcohol use for the citizens of Bangladesh, enforcement of these policies is minimal, which has led to the continued use of alcohol within the population. Additionally, as alcohol is both produced and available in Bangladesh, it is necessary to recognize the pressing need for data-supported development of alcohol policy, as alcohol consumption within the population is inevitable. Furthermore, despite these strict policies, there is clear evidence that alcohol is still consumed in both urban and rural areas of Bangladesh. As such, policies should be updated to address these gaps in the guidelines. Emphasis should be placed on raising public awareness of alcohol misuse within the country. Additionally, national action plans and regular monitoring systems for alcohol use and associated risk factors in Bangladesh should be enacted.

Table 4. Predictors of ever alcohol use among 9275 adults in the noncommunicable disease risk-factor survey of Bangladesh, 2010

<table>
<thead>
<tr>
<th>Sociodemographic factor</th>
<th>Ever alcohol consumption, n (%)</th>
<th>Prevalence</th>
<th>Crude OR (95% CI)</th>
<th>Adjusted OR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>15 (0.30)</td>
<td>Ref</td>
<td>43.6 (26.1–73.1)</td>
<td>11.6 (6.0–22.5)</td>
</tr>
<tr>
<td>Male</td>
<td>504 (11.7)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Area of residence</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>144 (3.1)</td>
<td>Ref</td>
<td>2.76 (2.26–3.35)</td>
<td>2.91 (2.35–3.59)</td>
</tr>
<tr>
<td>Urban</td>
<td>375 (8.1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>478 (5.7)</td>
<td>Ref</td>
<td>2.18 (1.55–3.06)</td>
<td>1.76 (1.19–2.59)</td>
</tr>
<tr>
<td>Unmarried a</td>
<td>41 (11.6)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age, years</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25–39</td>
<td>249 (5.5)</td>
<td>Ref</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40–54</td>
<td>178 (5.9)</td>
<td></td>
<td>1.10 (0.91–1.35)</td>
<td>0.87 (0.69–1.08)</td>
</tr>
<tr>
<td>≥55</td>
<td>92 (5.3)</td>
<td></td>
<td>0.97 (0.76–1.24)</td>
<td>0.62 (0.47–0.83)</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No education</td>
<td>160 (4.1)</td>
<td>Ref</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary or less</td>
<td>125 (5.1)</td>
<td></td>
<td>1.24 (0.97–1.57)</td>
<td>1.11 (0.86–1.43)</td>
</tr>
<tr>
<td>Secondary school</td>
<td>163 (7.9)</td>
<td></td>
<td>2.01 (1.60–2.51)</td>
<td>1.61 (1.25–2.08)</td>
</tr>
<tr>
<td>College or postgraduate</td>
<td>71 (8.3)</td>
<td></td>
<td>2.10 (1.57–2.80)</td>
<td>1.25 (0.89–1.74)</td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployed/retired</td>
<td>40 (8.1)</td>
<td>Ref</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professional employment b</td>
<td>376 (10.7)</td>
<td></td>
<td>1.36 (0.98–1.89)</td>
<td>1.10 (0.76–1.59)</td>
</tr>
<tr>
<td>Industrial worker/day labourer</td>
<td>57 (8.4)</td>
<td></td>
<td>1.04 (0.69–1.57)</td>
<td>0.76 (0.47–1.22)</td>
</tr>
<tr>
<td>Housemaker</td>
<td>5 (0.1)</td>
<td></td>
<td>0.01 (0.01–0.03)</td>
<td>0.17 (0.05–0.52)</td>
</tr>
<tr>
<td>Other c</td>
<td>41 (9.7)</td>
<td></td>
<td>1.22 (0.77–1.93)</td>
<td>3.20 (1.87–5.48)</td>
</tr>
<tr>
<td>Tobacco use d</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-tobacco user</td>
<td>89 (1.9)</td>
<td>Ref</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tobacco user</td>
<td>430 (9.1)</td>
<td></td>
<td>5.01 (3.97–6.32)</td>
<td>3.38 (2.58–4.32)</td>
</tr>
</tbody>
</table>

CI: confidence intervals; OR: odds ratio; Ref: reference category.

aUnmarried includes: never married, divorced, widowed and separated

bProfessional includes: government employees, nongovernment employees, business owners, farmers, agricultural workers and other self-employed individuals.

cOther includes: beggars, rickshaw pullers, cooks, carpenters, tailors, security guards, migrant workers and fishermen.

dTobacco use includes smokeless and smoked tobacco.
Alcohol use in Bangladesh is low. However, there is concern about binge drinking among alcohol drinkers. Alcohol use is prevalent among men, younger age groups, labourers, salaried government and nongovernment employees and businessmen, current smokers, and those with a low educational background. Effective integrated interventions among these groups can be targeted to reduce the prevalence of alcohol use and other risk factors for noncommunicable disease, such as smoking, to improve the control of noncommunicable diseases in Bangladesh.

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**Conflict of interest:** None declared.

**References**

Islam et al.: Alcohol consumption among adults in Bangladesh


Perinatal care practices in home deliveries in rural Bangalore, India: a community-based, cross-sectional survey

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Abstract

Background A slowing in the decline in neonatal mortality in India has hindered progress made in reducing overall child mortality. The persisting use of unsafe home deliveries and harmful neonatal care practices may contribute to this stagnation in neonatal mortality rates.

Methods A community-based cross-sectional study of mothers residing in rural Bangalore, India, who had given birth within 42 days of the day of home visit was done during 2013–2014. Trained health workers interviewed women who delivered at home about perinatal care practices. The questionnaire used was adapted from previous studies assessing perinatal care practices according to World Health Organization guidelines. Descriptive analyses of perinatal practices were reported as frequencies. The association of various factors with the outcomes clean cord care, thermal care and early initiation of breastfeeding were assessed using multivariate logistic regression analyses.

Results Of a total of 2230 deliveries, 945 (42.4%) took place in hospitals, while the remainder were at home (57.6%). Among home deliveries, only 30.6% were attended by a skilled worker; a safe-delivery kit was used in 40.6% and 47.1% of attendants had washed their hands before delivery. In most cases (94.6%), the umbilical cord was cut after delivery of the placenta and a non-sterile instrument was used in 26.6% of births. Harmful practices of applications on the cord stump (35.0%), bathing within 6 h (61.6%), pre-lacteal feeding (30.8%) and delayed initiation of breastfeeding (73.3%) were reported. Wrapping was usually delayed, and most (64.7%) neonates were wrapped between 10 min and 60 min after birth. Being Hindu was positively associated with good perinatal care practices, and attending antenatal care at least once was associated with clean cord care and early breastfeeding. Having a trained birth attendant at delivery was associated only with clean cord care. Having a medical doctor/nurse in attendance was associated with only early initiation of breastfeeding. Being a member of a scheduled caste/tribe was positively associated with clean cord care and thermal care.

Conclusion Appropriate and culturally acceptable behaviour-change communication strategies are needed to improve delivery and neonatal care practices in Bangalore.

Keywords: home delivery, India, neonatal mortality, perinatal care

Background

Annually, 2.6 billion babies born worldwide die during the neonatal period,1 and nearly 98% of these deaths occur in low-income countries while infants are being cared for by mothers, relatives or traditional birth attendants (TBAs).2 Important causes of neonatal deaths are infections (tetanus, sepsis/pneumonia and diarrhoea) and complications arising from premature birth, birth injuries and birth asphyxia.3 Over the last decade, the infant mortality rate has declined steadily, owing to effective child-survival interventions.2 However, this rate of declining infant mortality has recently stagnated, owing to a very slow decline or static rate of neonatal mortality.4 This could be attributed to improper delivery and neonatal care practices that follow immediately after birth, particularly in home deliveries.6

The World Health Organization (WHO) has outlined a set of practices called “essential newborn care”, to prevent neonatal morbidity and mortality. These include hygiene during delivery; keeping the neonate warm; early initiation and exclusive breastfeeding; care of the eyes; care during illness; and immunization and care of low-birth-weight neonates.6 Family members need to understand these childbirth and essential neonatal care practices, in order to seek appropriate and timely care during birth and the neonatal period.7

In India, the infant mortality rate is 40 per 1000 live births and neonatal mortality is about 29 per 1000 live births.3 The third National Family Health Survey, 2005/2006, reported that, in India, 65.4% of all deliveries and 75.3% of deliveries in rural areas take place in a home setting.8 Several studies from south-Asian and African countries have reported that high-risk traditional neonatal
care practices during home deliveries persist in rural[] as well as in urban areas. Estimation of the proportion of hospital deliveries and skilled birth attendance, and an understanding of traditional community and household neonatal care practices, are necessary for implementation of culturally sensitive and acceptable behaviour-change communication programmes aimed at changing practices. This report quantitatively describes the perinatal care practices in a rural area of India near Bangalore.

Methods

Study setting
This study was carried out in the field practice area covering three primary health-care centres (PHCs) affiliated to Bangalore Medical College and Research Institute (BMCRI), Karnataka, India. The three PHCs are located 25 km north west of Bangalore and the field practice area covered by these three PHCs has a total population of 88,000, the majority of whom are farmers, or semiskilled or unskilled labourers.

Study design
This was a community-based cross-sectional study of mothers giving birth at home who resided in the field practice area of BMCRI. Prospective recruitment of mothers was carried out by field auxiliary nurse midwives (ANMs) during routine home visiting between 1 January 2013 and 31 December 2014.

Study population
All women who resided in the field practice area of BMCRI and had given birth within 42 days of the date of the visit were included.

Ethics and informed consent
Before the start of the interview, all eligible women were given an explanation about the purpose of the interview and invited to participate. They were free to refuse participation or not answer any of the questions. Verbal consent was sought and confidentiality of information was assured. The study received ethical approval from the independent research ethics committee of BMCRI.

Questionnaire and interviewers
The questionnaire and conceptual framework were adapted from those of two studies carried out in Nepal. The questionnaire was developed in English and translated into Kannada. The translated questionnaire was pretested among 20 mothers living outside the study area. The necessary modifications were made to the questionnaire after pretesting. The questionnaire contained sections on sociodemographic profile and the antenatal, intranatal, postnatal and neonatal periods. Six ANMs from each of the PHCs, were trained in administering the questionnaire and in interview techniques.

Data collection
All the women who resided in the field practice area and had given birth within 42 days of the date of their visit were included by the ANMs during routine home visits. The field ANMs identified all the births and collected information about neonatal care practices for home births only. For all deliveries identified by the ANMs, the questionnaire interviews covered the following aspects:

• the place of delivery, principal person who conducted the delivery and the use of a clean home-delivery kit;
• the type of instrument used to cut the umbilical cord and whether the instrument was sterilized;
• the type of material used to tie the umbilical cord and whether it was sterilized;
• whether substances (dressings) were applied to the cut end of the cord;
• the time of wrapping the baby in relation to delivery of the placenta, and the time after birth when the neonate was bathed;
• whether the neonate was given any pre-lacteal food or drink;
• the number of hours after birth that breastfeeding was initiated;
• whether the baby was taken to a health facility for a check-up and whether BCG vaccine was given.

Variables
Clean cord care was defined as use of a clean instrument for cutting, a clean cord tie and no substance application to the cord. Thermal care was defined as drying or wrapping the baby before the delivery of the placenta and delaying the first bath for 1 or 2 days. Early initiation of breastfeeding was defined as initiating breastfeeding within 1 h of birth without giving pre-lacteal feeds. Other factors considered in the analysis were age, religion, education, caste, asset score (as a proxy for income), antenatal care, parity and attendance at the birth. The asset score was calculated based on five pairs of household items possessed by the family. Each pair of items, if present, was given a score of one and if absent given a score of zero. The maximum score if all items were present was five and the minimum score if none were present was zero.

Data analysis
The data were analysed using SPSS (Statistical Package for Social Sciences) version 18.0. For all births identified over the 2 years studied (n = 2230), frequency distributions were calculated for each of the childbirth practices, such as place of birth and presence of a birth attendant. However, to better understand perinatal care practices during home births, the frequency distributions of safe delivery, hand washing by a birth attendant, instrument used to cut the cord, and dressing applied to the stump of the umbilical cord are presented for home deliveries only (n = 1285). In the sample of births that took place at home, clean cord care, thermal care and early breastfeeding were treated as binary outcome variables. Multivariate logistic regression, with clean cord care, correct thermal care and early breastfeeding as separate outcomes, was performed to determine their associations with risk factors such as religion, education, caste, asset score (as a proxy for income), antenatal care, parity and attendance at the birth. All the independent variables were entered into the regression models simultaneously (enter method). Odds ratios (ORs) and 95% confidence intervals (CIs) were obtained for factors related to care practices. All P values below 0.05 were considered statistically significant.

Results
During the 2-year study period, a total of 2292 singleton births and 15 twin births were identified; 63 stillbirths, 14 mothers
with whom interviews were either incomplete or interview was not possible, and the second baby in the case of twins, were excluded from analyses. A total of 945 deliveries took place in hospitals; the remaining 1285 deliveries were home deliveries and formed the final sample for the analyses. The total sample of 2230 births was analysed for sociodemographic profile (see Table 1) and the 1285 births that took place at home were analysed for place of birth and principal birth attendant and safe delivery and neonatal care practices (see Tables 2 to 5).

Sociodemographic profile of all participants

The background sociodemographic profile of all 2230 participants is shown in Table 1. The median age of the mothers was 25 years (interquartile range [IQR]: 21–28 years). Most mothers were in the age group 20–29 years (64.2%). However, 192 (8.6%) women did not know their exact age. The religion of the respondents was Hindu for 1822 (81.7%) mothers, followed by Muslim for 314 (14.1%) mothers. A majority (1156, 51.8%) of the mothers belonged to a scheduled caste or tribe or other backward class. A total of 1189 (53.3%) mothers had not attended school beyond primary level, and a majority (1447, 64.9%) of the mothers owned some agricultural land.

Obstetric and antenatal-care histories of all participants

The median age at marriage for all 2230 participants was 18 years (IQR: 18–20 years) and their age at first pregnancy was 19 years (IQR: 18–21 years). The median number of pregnancies was 2 (IQR: 1–4) and 1140 (51.1%) women were pregnant for the first time. The median number of antenatal visits was 4 (IQR: 2–6) and 589 (26.4%) mothers had had no antenatal check-up during their previous pregnancy (data not shown).

Place of delivery and delivery attendant

Only 945 (42.4%) deliveries took place in hospitals – 499 in private, 410 in government, and 36 in charitable hospitals. Most deliveries (1285, 57.6%) took place at home or in other places, such as a field. For the purposes of this study, these are all

Table 1. Sociodemographic characteristics of study participants

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>All participants (n = 2230), number (%)</th>
<th>Participants who gave birth at home (n = 1285), number (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;20</td>
<td>187 (8.4)</td>
<td>96 (7.5)</td>
</tr>
<tr>
<td>20–29</td>
<td>1432 (64.2)</td>
<td>825 (64.2)</td>
</tr>
<tr>
<td>≥30</td>
<td>419 (18.8)</td>
<td>273 (21.2)</td>
</tr>
<tr>
<td>Don’t know</td>
<td>192 (8.6)</td>
<td>91 (7.1)</td>
</tr>
<tr>
<td>Religion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hindu</td>
<td>1822 (81.7)</td>
<td>1050 (81.7)</td>
</tr>
<tr>
<td>Muslim</td>
<td>314 (14.1)</td>
<td>181 (14.1)</td>
</tr>
<tr>
<td>Christian</td>
<td>89 (4.0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Other</td>
<td>5 (0.2)</td>
<td>54 (4.2)</td>
</tr>
<tr>
<td>Classification</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scheduled caste or tribe</td>
<td>515 (23.1)</td>
<td>344 (26.8)</td>
</tr>
<tr>
<td>Other backward class</td>
<td>641 (28.7)</td>
<td>347 (27.0)</td>
</tr>
<tr>
<td>General caste</td>
<td>752 (33.7)</td>
<td>482 (37.5)</td>
</tr>
<tr>
<td>All other castes</td>
<td>322 (14.4)</td>
<td>112 (8.7)</td>
</tr>
<tr>
<td>Schooling</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never went to school</td>
<td>297 (13.3)</td>
<td>171 (13.3)</td>
</tr>
<tr>
<td>Primary</td>
<td>891 (40.0)</td>
<td>514 (40.0)</td>
</tr>
<tr>
<td>Secondary</td>
<td>522 (23.4)</td>
<td>286 (22.3)</td>
</tr>
<tr>
<td>Higher secondary</td>
<td>473 (21.2)</td>
<td>289 (22.5)</td>
</tr>
<tr>
<td>Bachelor and above</td>
<td>47 (2.1)</td>
<td>25 (1.9)</td>
</tr>
<tr>
<td>Have agricultural land</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>1447 (64.9)</td>
<td>786 (61.2)</td>
</tr>
<tr>
<td>No</td>
<td>781 (35.0)</td>
<td>467 (38.7)</td>
</tr>
<tr>
<td>Don’t know</td>
<td>2 (0.1)</td>
<td>2 (0.2)</td>
</tr>
</tbody>
</table>

Table 2. Place of home delivery and principal birth attendant (n = 1285)

<table>
<thead>
<tr>
<th>Circumstances of delivery</th>
<th>Number (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Place of delivery</td>
<td></td>
</tr>
<tr>
<td>Husband’s home</td>
<td>569 (44.3)</td>
</tr>
<tr>
<td>Mother’s home</td>
<td>671 (52.2)</td>
</tr>
<tr>
<td>Field/farm</td>
<td>16 (1.2)</td>
</tr>
<tr>
<td>In transit to hospital</td>
<td>4 (0.3)</td>
</tr>
<tr>
<td>Other</td>
<td>25 (1.9)</td>
</tr>
<tr>
<td>Birth attendant</td>
<td></td>
</tr>
<tr>
<td>Family member</td>
<td>306 (23.8)</td>
</tr>
<tr>
<td>TBA/ASHA</td>
<td>484 (37.7)</td>
</tr>
<tr>
<td>Auxiliary nurse midwife</td>
<td>322 (25.1)</td>
</tr>
<tr>
<td>Medical doctor</td>
<td>23 (1.8)</td>
</tr>
<tr>
<td>Nurse</td>
<td>48 (3.7)</td>
</tr>
<tr>
<td>Village doctor</td>
<td>33 (2.6)</td>
</tr>
<tr>
<td>Self/alone</td>
<td>40 (3.1)</td>
</tr>
<tr>
<td>Other</td>
<td>29 (2.3)</td>
</tr>
</tbody>
</table>

ASHA: accredited social health activist worker; TBA: traditional birth attendant.

Table 3. Cleanliness and hygiene practices during home deliveries (n = 1285)

<table>
<thead>
<tr>
<th>Cleanliness/hygiene practice</th>
<th>Number (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safe-delivery kit was used</td>
<td>522 (40.6)</td>
</tr>
<tr>
<td>Birth attendant washed his her hands</td>
<td>605 (47.1)</td>
</tr>
<tr>
<td>Instrument used to cut umbilical cord</td>
<td></td>
</tr>
<tr>
<td>New blade</td>
<td>943 (73.4)</td>
</tr>
<tr>
<td>Old blade</td>
<td>210 (16.3)</td>
</tr>
<tr>
<td>Scissor</td>
<td>19 (1.5)</td>
</tr>
<tr>
<td>Kitchen knife</td>
<td>5 (0.4)</td>
</tr>
<tr>
<td>Don’t know</td>
<td>46 (3.6)</td>
</tr>
<tr>
<td>Others (split bamboo, arrow, maize leaf etc.)</td>
<td>62 (4.8)</td>
</tr>
<tr>
<td>Dressing applied to the stump of umbilical cord</td>
<td></td>
</tr>
<tr>
<td>Nothing</td>
<td>835 (65.0)</td>
</tr>
<tr>
<td>Oil</td>
<td>292 (22.7)</td>
</tr>
<tr>
<td>Turmeric</td>
<td>121 (9.4)</td>
</tr>
<tr>
<td>Antiseptic</td>
<td>23 (1.8)</td>
</tr>
<tr>
<td>Animal dung</td>
<td>33 (2.6)</td>
</tr>
<tr>
<td>Ash or soot</td>
<td>27 (2.1)</td>
</tr>
<tr>
<td>Vermilion</td>
<td>4 (0.3)</td>
</tr>
<tr>
<td>Other (mud, talcum powder, cloth etc.)</td>
<td>31 (2.4)</td>
</tr>
<tr>
<td>Cloth used to wrap the neonate</td>
<td></td>
</tr>
<tr>
<td>New/washed cloth</td>
<td>965 (75.1)</td>
</tr>
<tr>
<td>Old/unwashed cloth</td>
<td>153 (11.9)</td>
</tr>
<tr>
<td>Don’t know</td>
<td>167 (13.0)</td>
</tr>
</tbody>
</table>

*Percentages may not add up to 100, since more than one dressing may have been applied.
categorized as home births. The place of delivery and main birth attendant for these home births are shown in Table 2. The attendance at birth was classified as (i) skilled (doctors, nurses, ANMs); (ii) semiskilled (village health workers, outreach health workers, who do not receive formal training in delivery and neonatal care); (iii) TBAs (not technically trained in childbirth); and (iv) others (friends family members, neighbours). According to this classification, a skilled birth attendant (medical doctor, nurse, ANM) was present for 30.6% of deliveries.

**Childbirth and neonatal care practices in home deliveries**

Cleanliness and hygiene practices are shown in Table 3. Safe-delivery kits, which contain a clean razor blade, a surface for cutting the cord, soap to wash hands, a plastic sheet and a clean cord tie, were used in only 522 (40.6%) of the home deliveries. The safe-delivery kit was mainly obtained from accredited social health activist workers (ASHAs), TBAs or ANMs. The birth attendant had washed his/her hands before attending the delivery in only 605 (47.1%) of the deliveries. Most attendants (73.4%) used a new blade, while others used potentially harmful instruments, such as an old blade (16.3%), scissors (1.5%) or a kitchen knife (0.4%), to cut the cord. Only 191 (14.9%) mothers responded that the instrument used to cut the cord was sterilized by boiling in water (data not shown). After the cord was cut, 835 (65.0%) mothers did not apply any substance to a small number of cord stumps. The practices related to the maintenance of warmth to prevent neonatal hypothermia are shown in Table 4. Most (86.1%) neonates were wiped within 1 h but wrapping immediately after birth was done for only 9.6%. The cloths used to wrap babies after birth were mostly new or washed (75.1%) (see Table 3). Wrapping was usually delayed, and most (64.7%) neonates were wrapped between 10 min and 60 min after birth. A total of 61.6% of the neonates received a bath within 6 h after birth. The majority of neonates (83.0%) were placed on their mother’s skin within 4 h after birth. The neonatal feeding practices are shown in Table 5. A total of 69.2% were breastfed. Initiation of breastfeeding within 1 h after birth was noted in 26.7% of neonates. However, within 24 h, 79.8% of the mothers had initiated breastfeeding. The common pre-lacteal feeds given were animal’s milk (12.8%) and honey (8.5%). Other pre-lacteal feeds given were rice water (3.3%), sugar water (3.5%) and formula feeds (1.5%). Almost one third (30.8%) of the mothers had given something other than breast milk after birth.

**Multivariate analysis of factors determining neonatal care practices**

The results of the multivariate logistic regression of neonatal care practices during home delivery, namely clean cord care, thermal care and early initiation of breastfeeding, are shown in Table 6. Compared with other religions, being Hindu was positively associated with clean cord care (adjusted OR: 1.96, 95% CI: 1.56–2.32), correct thermal care (adjusted OR: 2.26, 95% CI: 1.80–2.83) and early initiation of breastfeeding (adjusted OR: 1.46, 95% CI: 1.22–1.76). Similarly, having made at least one antenatal care visit was positively associated with clean cord care (adjusted OR: 1.87, 95% CI: 1.61–2.18) and

### Table 4. Practices related to neonatal thermal care (n = 1285)

<table>
<thead>
<tr>
<th>Thermal care practice</th>
<th>Number (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Time after birth when the baby was wiped</strong></td>
<td></td>
</tr>
<tr>
<td>Immediately (&lt;10 min)</td>
<td>382 (29.7)</td>
</tr>
<tr>
<td>10–30 min</td>
<td>392 (30.5)</td>
</tr>
<tr>
<td>30–60 min</td>
<td>333 (25.9)</td>
</tr>
<tr>
<td>&gt;4 h</td>
<td>83 (6.5)</td>
</tr>
<tr>
<td>Baby was not wiped</td>
<td>28 (2.2)</td>
</tr>
<tr>
<td>Don’t know</td>
<td>53 (4.1)</td>
</tr>
<tr>
<td><strong>Time after birth when the baby was wrapped</strong></td>
<td></td>
</tr>
<tr>
<td>Immediately (&lt;10 min)</td>
<td>123 (9.6)</td>
</tr>
<tr>
<td>10–30 min</td>
<td>374 (29.1)</td>
</tr>
<tr>
<td>30–60 min</td>
<td>457 (35.6)</td>
</tr>
<tr>
<td>&gt;4 h</td>
<td>135 (10.5)</td>
</tr>
<tr>
<td>Baby was not wrapped</td>
<td>40 (3.1)</td>
</tr>
<tr>
<td>Don’t know</td>
<td>141 (11.0)</td>
</tr>
<tr>
<td><strong>Time after birth when the baby was bathed</strong></td>
<td></td>
</tr>
<tr>
<td>Immediately (&lt;10 min)</td>
<td>167 (13.0)</td>
</tr>
<tr>
<td>Within 6 h</td>
<td>625 (48.6)</td>
</tr>
<tr>
<td>7–24 h</td>
<td>279 (21.7)</td>
</tr>
<tr>
<td>&gt;24 h</td>
<td>122 (9.5)</td>
</tr>
<tr>
<td>Baby was not bathed</td>
<td>77 (6.0)</td>
</tr>
<tr>
<td>Don’t know</td>
<td>15 (1.2)</td>
</tr>
<tr>
<td><strong>Time after birth when the baby was placed on the mother’s skin</strong></td>
<td></td>
</tr>
<tr>
<td>Immediately (&lt;10 min)</td>
<td>43 (3.3)</td>
</tr>
<tr>
<td>10–30 min</td>
<td>108 (8.4)</td>
</tr>
<tr>
<td>30–60 min</td>
<td>474 (36.9)</td>
</tr>
<tr>
<td>&gt;4 h</td>
<td>442 (34.4)</td>
</tr>
<tr>
<td>Baby was not placed on the mother’s skin</td>
<td>18 (1.4)</td>
</tr>
<tr>
<td>Don’t know</td>
<td>14 (1.1)</td>
</tr>
</tbody>
</table>

### Table 5. Neonatal-feeding practices (n = 1285)

<table>
<thead>
<tr>
<th>Neonatal-feeding practice</th>
<th>Number (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>First feed</td>
<td></td>
</tr>
<tr>
<td>Breast milk</td>
<td>889 (69.2)</td>
</tr>
<tr>
<td>Goat’s milk</td>
<td>147 (11.4)</td>
</tr>
<tr>
<td>Cow’s milk</td>
<td>18 (1.4)</td>
</tr>
<tr>
<td>Honey</td>
<td>109 (8.5)</td>
</tr>
<tr>
<td>Rice water</td>
<td>42 (3.3)</td>
</tr>
<tr>
<td>Sugar water</td>
<td>45 (3.5)</td>
</tr>
<tr>
<td>Formula feed</td>
<td>19 (1.5)</td>
</tr>
<tr>
<td>Others (buffalo’s milk, plain water etc.)</td>
<td>8 (0.6)</td>
</tr>
<tr>
<td>Don’t know</td>
<td>8 (0.6)</td>
</tr>
<tr>
<td><strong>Time to initiation of breast feeding</strong></td>
<td></td>
</tr>
<tr>
<td>Immediately (&lt;10 min)</td>
<td>27 (2.1)</td>
</tr>
<tr>
<td>10–30 min</td>
<td>53 (4.1)</td>
</tr>
<tr>
<td>30–60 min</td>
<td>263 (20.5)</td>
</tr>
<tr>
<td>&gt;4–24 h</td>
<td>319 (24.8)</td>
</tr>
<tr>
<td>Baby was never put to breast</td>
<td>4 (0.3)</td>
</tr>
<tr>
<td>Don’t know</td>
<td>20 (1.6)</td>
</tr>
</tbody>
</table>
made at least one visit for antenatal care (adjusted OR: 1.29, 95% CI: 1.10–1.52) and delivery attended by a medical doctor or a nurse (adjusted OR: 1.61, 95% CI: 1.20–2.18) were the significant determinants.

**Discussion**

This study describes the perinatal care practices during home deliveries in a rural community in Bangalore, India. A significant proportion of the deliveries took place at home, where the presence of a skilled attendant at birth was not common, and hygiene practices during delivery were unsatisfactory. Wrapping the neonate after birth was generally delayed and neonatal bathing was an almost universal practice. Initiation of breastfeeding was also usually delayed for more than an hour and pre-lacteal feeding was very common.
Place of delivery and birth attendance
The proportion of home deliveries in this study (57.6%) was close to the national average of 65.4%, but lower than that for Nepal and Bangladesh. Though the health facility is in close proximity to Bangalore city, it is surprising that almost two thirds of births were home deliveries. However, it can be argued that home deliveries are prevalent in urban areas as well.14-16 The cost of care in private hospitals, poor-quality services or waiting periods in government hospitals may be the cause for persistence of home deliveries in this rural area.19 Skilled attendance for home deliveries has been prioritized, yet it was common for TBAs and unskilled persons to conduct deliveries.20 However, a meta-analysis has reported that training TBAs may bring about improvements in performance and perinatal mortality.21 Government outreach workers like ANMs and ASHAs trained in delivery care were present in a very small proportion of births, which is of concern for the functioning of primary health-care services in this area.22

Hygiene during delivery
WHO recommends “five cleans” to maintain hygiene during delivery. These are: clean surface, clean hands of attendant, clean cord, clean cord tie without dressing and clean and dry wrapping of the baby.6 To maintain these “cleans”, kits for safe home delivery are manufactured and distributed free of charge, but, discouragingly, in 60% of the deliveries no kit was used and only half of the birth attendants had washed their hands. These practices are reportedly better in Nepal.11,16 Encouragingly, in nearly 70% of the home deliveries, a new blade was used to cut the umbilical cord and no dressing was applied to the stump of the cord. Practices like application of harmful substances (dressing) to the stump of the umbilical cord have been well described in earlier studies and were also prevalent in this study area.11,13,14,16 It is well known that application of substances like ghee (clarified butter) to the umbilical cord is a risk factor for neonatal tetanus.24 The present study found that, in addition to being Hindu and being from a scheduled caste or tribe, use of antenatal care services and delivery attendance by a TBA/ASHA were positively associated with clean cord care. A study from Uttar Pradesh has reported that home visits and antenatal counselling improved delivery care practices.5 The present results suggest that women who had at least one antenatal visit may have received counselling about the “cleans” during delivery and therefore practised clean cord care.

Thermal care
WHO has emphasized that thermal control of the neonate is an essential part of neonatal care, and bathing the neonate either immediately or within half an hour negatively affects thermal control.26 In the present study, bathing of the neonate seems to be a universal practice, since more than 90% of the neonates were bathed after birth, as in south Asian countries.5,11,13,16 Religious or cultural beliefs may be responsible for such practices because it is thought that vernix is “dirty looking” and bathing is “ritual cleansing”.14 Neonates should be dried and wrapped immediately after birth. Wrapping was usually delayed, since just under 10% of neonates were wrapped immediately, which was similar to previous studies.5,11,13,16 Being a Hindu was positively associated with thermal care, while not belonging to scheduled caste or tribe, and delivery attended by a medical doctor or nurse, were negatively associated with thermal care. This latter finding is consistent with other studies from India, which have suggested that health-care providers may not recognize the need for thermal care to prevent neonatal hypothermia.27

Neonatal feeding
The delayed initiation of feeding and pre-lacteal feeding is contrary to the findings from a rural population in Uttar Pradesh, where pre-lacteal feeding was a universal practice and breastfeeding was delayed for several days.9 Breastfeeding initiation rates (26.7% within an hour after birth) were very low compared to those reported in studies from Nepal, Pakistan and Bangladesh.11,14,28,29 Traditional practices of giving non-breast-milk food, usually only once immediately after birth, are thought to be unnecessary and potentially harmful. In a study from rural Uttar Pradesh, early initiation of breastfeeding was positively associated with being Hindu, attendance for at least one antenatal visit and the presence of a skilled birth attendant.5

Policy implications
Though from a small area of rural India, the results from this study are important for safe-motherhood programmes, to either ensure the presence of skilled personnel during delivery or provide accessible and acceptable services, as at least one antenatal visit and skilled birth attendance were associated with clean cord care and early initiation of breastfeeding. It is important to continue the provision of community outreach services, satellite birthing facilities, and training of TBAs and ASHAs, to improve neonatal care.17,20 Culturally appropriate and sensitive strategies to change behaviour and practices are necessary to avoid the high-risk neonatal care practices that are prevalent in this rural population.

Limitations
This study had some limitations. Therefore, interpretation of the results needs caution. Nearly half the mothers were educated up to primary level only (4 years of schooling), which may have resulted in inaccurate reporting about delivery and neonatal care practices. An attempt was made to minimize recall bias by interviewing mothers within 42 days after birth but there could also have been some reporting bias from the mothers. Some questions about some reported risky neonatal care practices like oil massage, discarding colostrum, etc. were not asked. Many such practices are a result of traditional customs/beliefs and there was no opportunity to qualitatively explore such traditions during this study. Finally, the study was limited to a small area; hence, extrapolation of the results to the other populations of India is limited.

Conclusion
Harmful delivery and neonatal care practices are prevalent in this rural population and there is a need for interventions to encourage community members, family members, TBAs and ASHAs to change practices. Skilled birth attendance or utilization of health facilities for childbirth, as well as neonatal care practices, should be improved in this community. Improving maternity care facilities, the quality of maternity care and community health education would help to improve uptake of facility deliveries.
Acknowledgements: We thank the auxiliary nurse midwives for identifying the births and interviewing the mothers at home. We also thank the interns posted at primary health centres, and staff, for their cooperation and help with conducting this study.

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Conflict of interest: None declared.

Authorship: Both the authors contributed equally towards conceptualization of the study, acquisition of data and analyses, interpretation of results and writing and reviewing the manuscript for publication.


References


Motivating and demotivating factors for community health workers: a qualitative study in urban slums of Delhi, India

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Abstract

Background Community health workers play an important role in delivering health-care services, especially to underserved populations in low- and middle-income countries. They have been shown to be successful in providing a range of preventive, promotive and curative services. This qualitative study investigated the factors motivating or demotivating community health workers in urban settings in Delhi, India.

Methods In this sub-study of the ANCHUL (Ante Natal and Child Healthcare in Urban Slums) implementation research project, four focus-group discussions and nine in-depth interviews were conducted with community health workers and medical officers. Utilizing a reflexive and inductive qualitative methodology, the data set was coded, to allow categories of motivating and demotivating factors to emerge.

Results Motivating factors identified were: support from family members for their work, improved self-identity, job satisfaction and a sense of social responsibility, prior experiences of ill health, the opportunity to acquire new skills and knowledge, social recognition and status conferred by the community, and flexible work and timings. Negative experiences in the community and at health centres, constraints in the local health system in response to the demand generated by the community health workers, and poor pay demotivated community health workers in this study, even causing some to quit their jobs.

Conclusion Community-health-worker programmes that focus on ensuring the technical capacity of their staff may not give adequate attention to the factors that motivate or discourage these workers. As efforts get under way to ensure universal access to health care, it is important that these issues are recognized and addressed, to ensure that community health worker programmes are effective and sustainable.

Keywords: community health workers, demotivation, India, job satisfaction, motivation, urban

Background

For several decades, community health workers have been playing an important role in the delivery of health-care services, especially to underserved populations in low- and middle-income countries. With the emphasis on universal health coverage, many countries have begun to focus on utilization of community health workers to improve population health. While community health workers have primarily been used as motivators and link workers, who increase the demand for health services in their communities by encouraging patients to attend health facilities, successful examples of community health workers providing a range of curative services for malaria, tuberculosis and the care of the elderly have also been established. Despite the positive effects that community-health-worker programmes have shown on the health of the populations they serve, high dropout rates, and hence the sustainability of such programmes, has been a concern. Some of the key factors that have been shown to contribute to attrition among community health workers are low motivation and lack of job satisfaction. Several factors have been shown to influence motivation and satisfaction among health-care providers. These include provision of both financial and non-financial incentives. As governments in low- and middle-income countries increasingly use the services of community health workers to strengthen their health systems and deliver services, there is a greater need to understand the factors that might influence the performance of these workers.

In 2013, India launched the National Urban Health Mission (NUHM) as a sub-mission of the National Health Mission, to meet the health needs of the urban poor. Currently, both the National Rural Health Mission (NRHM) and NUHM are part of a larger single programme, the National Health Mission. Following on the experience of the accredited social health activist (ASHA) programme under NRHM, NUHM introduced the concept of the urban community health worker, or urban social health activist, who would provide services similar to those of the rural counterpart, the ASHA. Currently this intervention is being rolled out across several states but is in its initial stages.

This paper discusses some of the key motivating and demotivating factors reported by community health workers who worked on the Ante Natal and Child Healthcare in Urban Slums (ANCHUL) implementation research project, which
was carried out to assess the effectiveness of a complex intervention targeted at community health workers under Delhi State Health Mission, in improving utilization of maternal, neonatal and child health services in urban-poor settlements of Delhi. The data for the study findings were collected as part of a qualitative sub-study that was carried out among community health workers in both the intervention and the control arms of the study, to understand what motivated and demotivated them during their work.

Methods

Study setting

Sarita Vihar subdivision of the south-east district of the state of Delhi was assigned by the Delhi State Health Mission, the government body tasked with the implementation of the National Health Mission in the state of Delhi, for the implementation of the ANCHUL project. Within Sarita Vihar, Lal Kuan, which consisted of 11 administrative blocks of varying sizes, was selected to be the control arm of the study, while Sangam Vihar, which also consisted of 11 administrative blocks, was chosen to be the interventional arm of the study. As per the household listing conducted during the baseline survey, the intervention area in Sangam Vihar consisted of 8607 households, while in Lal Kuan there were 7614 households. In both arms, families had been living in the area for a considerable period of time (more than 10 years) and consisted of households whose members belonged to different castes and followed various religious traditions. Both areas were found to be similar on a range of factors related to maternal health, such as literacy, number of children in a household, age of marriage, etc. In terms of infrastructure, Sangam Vihar was rated better than Lal Kuan in, for example, the number of pucca households, houses with toilets located within the house, as well as households having a piped water supply. Both Sangam Vihar and Lal Kuan had a primary urban health centre located within their respective areas. In addition to the primary urban health centre, these two areas each had several private practitioners who operated in the area.

In the control arm of the study, the National Health Mission was responsible for selection, training and induction of community health workers, called ASHAs, while in the interventional arm of the study the ANCHUL team was responsible for selection, training and induction of ASHAs. These administrative blocks were further demarcated into clusters with a single community health worker, called an ASHA (modelled after the ASHA from the NRHM), expected to cover the area and provide services. Each ASHA service formed a cluster with approximately 400 households. Such a cluster mapping led to 19 clusters under Lal Kuan and 20 clusters in Sangam Vihar. The purpose of collecting data from both the intervention and control arms of this sub-study was not to compare the two but to understand key motivators and demotivators among all the community health workers working across the two areas.

Data collection

The duration of the entire ANCHUL project, starting from the baseline survey, was from April 2011 to November 2015. The data for this sub-study were gathered between October 2014 and July 2015. Community health workers in both arms of the study were informed about the focus-group discussions and invited to participate and share their views. Initially, two focus-group discussions with community health workers were conducted in each of the study arms, each with 8–10 community health workers who had been working for a period of over 6 months. Following the focus-group discussions, seven in-depth interviews were conducted with a subsample of community health workers in both arms, to further explore the key issues that had arisen in the focus-group discussions. Out of the seven in-depth interviews, three were conducted with community health workers who had left the programme, in order to understand the reasons why they dropped out. In-depth interviews were also conducted with the medical officer in the intervention and control arms of the study. A team of two was tasked with the collection of data. One of the team members with prior experience in conducting interviews and focus-group discussions (SP) facilitated the discussions with the community health workers and the medical officers, while the second team member (MSG) took down detailed notes during the focus-group discussions and in-depth interviews. The focus-group discussions were conducted at the primary urban health centres in a separate area that was allotted for this purpose. Care was taken to ensure that other staff members of the primary urban health centre were not around during the discussion.

The topic guides used for the focus-group discussions were organized around the themes of understanding the community health workers’ knowledge of the health profile of the area in which they worked, their experience of functioning as a community health worker, what motivated them and demotivated them during their work, and finally their assessment of the impact of their work on the community. During the data-collection process, the key issues that emerged were noted and maintained in the field diary by a team member who led the data collection (SP). This was reviewed by the second person on the team (MSG) as the data collection progressed, to check for saturation. At the point where no more new issues were brought up by the participants, it was assumed that saturation had been achieved and data collection was stopped.

Data management and analysis

All audio-recorded interviews in Hindi were transcribed and checked by the person who conducted the data collection, to ensure accuracy. The Hindi transcripts were then translated into English and cross-checked for any errors or loss of meaning, by another member of the team well versed in both Hindi and English. This was done by listening to the original recording in Hindi and reviewing the English transcript. The final translated transcripts were produced as a result of this collaborative effort between the transcriber and the team member who reviewed the English transcript. The translated transcripts were coded using the software package Atlas ti 7, employing a reflexive and inductive approach to allow codes and categories to emerge from within the data. Both members of the study team who were carrying out the qualitative data collection separately coded a representative sample of the transcripts. Codes that emerged were compared and discussed to ensure that there was internal validity in the coding process. After an initial round of coding with the sample of transcripts, the list of codes that were generated was reviewed, in order to develop a structured code list, which was then applied to the remaining transcripts. Illustrative quotations that captured the key issues reported by the participants have been included in the results.
Ethical approval
The nature of the study was explained to each participant in detail and written informed consent was obtained before the start of any focus-group discussion or in-depth interview. The study protocol of the ANCHUL project was approved by the Health Ministry Screening Committee of the Government of India, and institutional ethics committees of the Public Health Foundation of India, New Delhi; All India Institute of Medical Sciences, New Delhi; World Health Organization (WHO), Geneva, Switzerland; and Harvard School of Public Health, Boston, United States of America. In addition to approval for the original protocol that contained details of the qualitative study, annual approvals were obtained from WHO in Geneva for specific phases of the study.

Results
This section presents the study results grouped into three broad categories based on the level at which the motivating and the inhibiting factors were experienced, namely the personal level, the community level and the health-system level.

The profile of the community health workers was similar in both arms of the study. Their mean age was 33 years (range 22–45 years). Most were educated between the 10th and the 12th classes, with a small minority of participants having only education below the 10th standard. Nearly half of the participants in the intervention arm had some form of vocational training after their schooling, whereas most in the control arm did not report this. All ASHAs were married and were members of the local community who had lived in the area for more than 8 years. Except for one participant in each of the arms, none of the community health workers had any experience relevant to maternal or child health prior to joining the ASHA programme.

Factors at the personal level

Family support
The work of a community health worker involved being available right through the day and sometimes even round the clock, depending on any health-related emergency that arose in the community. Many of the ASHAs felt that they were able to work in this manner and respond to calls for help only because of the support they received from their family members, especially their husbands and in-laws. ASHAs narrated instances of how husbands accompanied them when they had to attend a call late in the evening or at night and how other family members (mother-in-law) supported them by stepping in to take care of household chores that were the responsibility of the ASHA during days when she had to go to make field visits or accompany someone to the hospital.

My husband is also very supportive. His work is also related to health. He is a chemist. He has his own shop. I have a problem. My children are very small now but then my mother-in-law takes care of them when I go for work. I have complete support of my family. (ASHA worker, control arm)

If my sister do[es] not look after my son then it would be impossible for me to work as an ASHA. My mother also completely supports me. Now my husband also has no objection because I have to work in the area where we live. (ASHA worker, intervention arm)

Personal experience of ill health
While discussing their experiences as community health workers, many of the ASHAs made repeated references to their

Self-identity
While describing their functions as ASHAs, participants referred to the feeling of being independent and how their work had enabled them to value themselves more. Being recognized for their work in the field enabled them to feel a sense of independent identity that they did not experience when they were confined to their homes. Being able to contribute something to the household income, and making productive use of their time, were also reported as positive factors about their work and motivated them to continue working even if conditions were difficult and the incentives they received were meagre.

Actually, I wanted to have any part-time job because I was just sitting idle at home at that time. So I thought that I could serve the society and I will have my own identity too. (ASHA worker, control arm)

But now the biggest achievement is that we are serving people, we are self-dependent whether we earn more or less. But we are doing something very fruitful and that makes me feel good about myself. (ASHA worker, intervention arm)

Job satisfaction and social responsibility
Most of the ASHAs looked at their work as a form of social service that they were rendering to their community. The valued highly the feeling of saving lives and improving the health of their community members, and this was referred to repeatedly in focus-group discussions and in-depth interviews as one of the key motivating factors that inspired them to continue their work as a community health worker. They felt this was different from and more valuable than doing any other job that would have given them a salary.

If we are working in a company they make us work for their own interest and we work for our own interest. That means we get money for the work that they make us do. But in this job of being an ASHA, we help the community. Therefore, we are able to help people and also we are able to earn. This motivates me a lot to work because when we help someone in the community to get well, it makes lot of difference. (ASHA worker, control arm)

The value that they attached to their work made them feel responsible for the improved health of the community that they served. This, in turn, motivated ASHAs to go the extra mile to ensure that their services were made available to all and that the quality of the services they provided was good.

Yes. We are more concerned about the people than other things. So if we don’t get enough benefit it’s fine. But if we get to hear from the field that we have given them some wrong information then we won’t feel good for sure. So we want to work for their health. We don’t bother much about monetary benefits as such. (ASHA worker, intervention arm)
own experience of pregnancy or as a young mother. Those who had negative experiences or lacked the appropriate knowledge about caring for themselves or their newborn children felt that they should ensure that such situations do not occur in the lives of other women, and this acted as a motivating factor in delivering services to the community. ASHAs with such experiences reported feeling far more compassionate about the situation of the community they served than those who did not have such experiences.

My child had pneumonia. He was very weak and I gave him a bath. I still remember that scene when my child was serious. I fainted after looking at him. So I especially convince mothers of small children to keep your child in such a way that he should not get any disease. (ASHA worker, intervention arm)

We didn’t know that we should go for registration in [the] third month and this check-up should be done during pregnancy. Now we have got knowledge and we want to give such knowledge to them. Whatever facilities we couldn’t get, we want to give to them. (ASHA worker, intervention arm)

**Upgradation of skills and knowledge**

The training received by the ASHAs, as well as constant interaction with the community and the health system, increased their knowledge about various issues and changed their perceptions about life. Training that they received, and regular visits to the dispensary, increased their technical knowledge in the field and also gave them higher credibility. The life experiences and stories shared by the community during their household visits helped them to see things from a different perspective and some felt that this even helped them as an individual and aided their personal development.

I have learnt many new things. Such as what to eat during pregnancy, how a pregnant woman should sleep during the night, about antenatal check-ups, etc. I didn’t have so much knowledge when I was pregnant myself ... so this motivates me about being an ASHA. (ASHA worker, intervention arm)

Even we have learnt many things from the people here too. These women have taught us so many things. Like how someone is keeping her family, how someone is handling his family. So we learnt a lot from them which we were not aware of. (ASHA worker, intervention arm)

The role of new knowledge and skills in motivating ASHAs in their work was confirmed by medical officers in the intervention arm, who remarked that they found the ASHAs to be very curious to know more about their health and about how they could use the information they received in their training to serve the community and also their own family.

**Factors at the community level**

**Social recognition and status**

Social recognition of ASHAs, and the work that they did, emerged as the most important motivating factor and was referred to by all ASHAs from both the arms of the study. The respect and trust that the community gave them was regarded as the greatest incentive to continue as an ASHA. While describing their work, all ASHAs described in detail how they met with resistance during their initial days in the community and how this changed with time. Initially, they were denied access to any information and some households were even inimical to their presence. Later on, this changed as a result of the community understanding the value of their work and they were welcomed. Further, ASHAs were considered as valuable sources of information on matters related to health and some were also consulted in general, even when the issue at hand was not directly related to health. Some of the ASHAs mentioned being recognized publicly by the community for their work, while others mentioned that when they went on leave and returned to work later, community members told them that they were missed during the period when they were absent, which gave them a feeling of being valued by the community.

All of this meant that young mothers, who were mostly confined to their homes before they began their work as an ASHA, came to be known and respected in their communities and began to interact in a much broader social network. This, in turn, made them value themselves and the work they did.

People from my community look up to me for my opinion regarding their problems. People feel that my opinion would be very useful to them, because they think we have knowledge about various things. When people of my community think about me in such a manner, it feels good. (ASHA worker, control arm)

The role of social recognition and status as a strong motivator for ASHAs was confirmed by other stakeholders from the health system, who felt that ASHAs valued the respect and recognition they received from the community far more than any monetary incentives.

They get recognition, they receive I-card and bag, and they have the authority to come directly inside of the dispensary. They get respect and recognition in their locality and community and dispensary. They get their community people with authority to the dispensary and get a sense of pride in doing some work for their community. (medical officer, intervention arm)

**Negative experiences in the field**

When ASHAs went to deliver their services in the community, not all of them experienced positive and welcoming households who valued their services. Quite a few of the ASHAs referred to instances where they were not allowed to enter a house or when community members spoke to them rudely and questioned their role and utility. This was especially the case when they began their work in an area and were relatively unknown. Negative experiences were also reported from other established stakeholders in the health systems, such as medical officers, nurses and auxiliary nurse midwives. ASHAs referred to doctors and other staff treating them with disdain and speaking to them rudely in front of the patients whom they had brought to the health centre.

Once an elderly person was sitting outside a house. When I was asked his permission to enter the
Factors at the health-system level

Flexible work and timings

Most ASHAs were young women with household responsibilities, and in many cases this included taking care of their children. Some of the ASHAs felt that the flexible nature and relative autonomy of the work that they did was a factor in their continuing to work as an ASHA. Given the flexible nature of their jobs, and as they were mostly working in the same community where they lived, the ASHAs felt it gave them the flexibility to work and, if the need arose, to attend to urgent tasks at their home during the day. Some of them stated that, given this advantage, they chose to work as an ASHA despite getting other opportunities with a higher salary but requiring more uncompromising working schedules.

Salary doesn’t matter a lot. Timing suits us. We can manage home and outside work also. (ASHA worker, control arm)

Lack of recognition as valuable partners

Some of the ASHAs described instances where they felt that others in the health system did not value them or the work they did. This did not occur at the health centre where they worked but was an issue especially when they accompanied community members to the referral centres to seek treatment.

Nurses in hospitals get irritated when they see ID card of ASHA. Not in the dispensary. Everyone in dispensary knows us. As soon as they see the I-card they start shouting, “You are an ASHA worker? Why have you come? Who called you here? What work do you have here? Go from here!” They misbehave a lot. Don’t ASHAs deserve respect? Are ASHAs useless? Why do they misbehave with us? (ASHA worker, control arm)

Health-system constraints

The work of the ASHAs involved not only providing health education and information but also facilitating access to services for the community, especially in the field of maternal and child health. Many of the ASHAs referred to how they had taken people or referred people to health facilities, only to realize that the services that they were meant to receive were not available. This was referred to as a demotivator, since they realized that the services that they were meant to receive were not available. This was referred to as a demotivator, since they felt that their efforts to motivate the community to come forward and access the health system were fruitless, owing to the poor infrastructure at these facilities.

The biggest problem is the dispensary which is our place of work. I can motivate people in community but the place where I am referring them cannot provide the required services, I have to face problems then. (ASHA worker, control arm)

There is no provision of drinking water for the patients that come to the dispensary. There is no toilet for patients. Also there is no fan in the room outside where patients stand for their turn. When we take pregnant ladies, their weight is not measured, as the weighing machine is not working. The blood pressure instrument sometimes it stops working. (ASHA worker, intervention arm)

Inadequate remuneration

Poor remuneration came up almost universally as a demotivating factor for ASHAs to continue in their work. Even those who mentioned that they were happy with the nature of their work did feel that the remuneration they received was low for the type of work that they were expected to do. Low pay meant that ASHAs who had to augment the family income faced additional pressure to give up their jobs and look for other avenues that provided better financial compensation. More significantly, this came up as a key reason why some of those who trained to be ASHAs left their jobs.

Yes, four of them left the job because they felt the amount we get as salary was very low. (ASHA worker, control arm)

I come to know from many ladies who come from village that ASHA workers in villages get a fixed salary. They tell us that for institutional delivery ASHA workers in village get ₹600 and here we get ₹200. I feel weird as to why such differences exist. (ASHA worker, intervention arm)

Discussion

Community health workers discharge their duties in a complex context that involves the interplay of personal, professional and systemic factors, and these factors have an impact on whether they feel satisfied in their work or are dissatisfied and choose to leave (see Fig. 1). At the personal level, a host of factors determine whether an individual community health worker feels motivated or demotivated about the performance of her duty, such as the role played by her family, the new identity that she feels during the performance of her tasks, job satisfaction, prior experience of ill health in her family, and upgradation of skills and knowledge.

Family support

A key finding in the study was the role played by the families of the community health workers. Community health workers with supportive families who valued their work described how this was a key element in their effective discharge of duties. Previous studies across various settings have shown that one of the factors that motivate community health workers is the support they receive from their own families. Family support reported from these studies included moral support received for the work that they did, as well as helping community health workers with household work, in order to reduce their workload at home and enable them to spend more time delivering health services. The findings of the current study reaffirm this as an important factor in motivation. However, the study did not find either explicit or implicit recognition of this aspect anywhere in the ongoing ASHA programme. Hence, policy-makers and programme managers would do well to take this into account.
and consider ways in which the families of the community health workers can be considered to be allies in the larger effort to improve health in the community. It is important to come up with simple ways of recognizing the important role of the families of the community health workers and appreciating their support. This could involve simple measures such as periodic recognition of the families of community health workers at the level of the health centre where they are based. Such measures would also motivate family members to provide the required support to the community health workers to discharge their duties effectively.

**Self-identity**
Participants in this study also pointed to the satisfaction and the new identity that they felt as health workers as key motivating factors that were enabling at the personal level. These factors have also been reported in the past in multiple studies, and have been the focus of various programmes that have looked at retaining and improving community health workers’ motivation.

**Social recognition**
Social recognition has been shown to be a key factor motivating health workers across various contexts. This was also found to be true in the present study sample. Appreciation of the work carried out by members of the community, and being recognized personally because of their home visits, proved to be motivating factors for the community health workers. At the same time, negative experiences, both at the community level and at health centres, made the community health workers in this study feel let down. Such negative experiences were reported more during the initial period after the community health workers were inducted into their respective areas. Hence, training programmes for community health workers need to specifically address this component and teach them strategies to cope with initial disappointments in the field. In addition to initial training, this should be built into periodic assessments by the health system, so that community health workers are able to share and learn from each other’s experience on how best they could handle such negative experiences without letting them affect their work. Another avenue where community health workers felt let down was during their interaction with other established stakeholders in the health system, such as medical officers, nurses etc. At present there are no formal channels of communication, and many misconceptions exist about the role and nature of the community health workers. Instead of seeing them as partners, established health-care workers see them more as competitors who do not add real value to the health system. Hence, there is an urgent need to sensitize health-system staff to the role and importance of community health workers and to consider them as valuable allies.

**Incentives**
The payments made to community health workers, and their role in motivating or demotivating these workers, has been the focus of several studies. In the past, the concept of community health workers being volunteers motivated by a spirit of idealism has been reported, with some arguing that they cannot be paid full salaries by ministries of health as they are not full-time employees. However, most recent studies have stressed the fact that adequate remuneration is an important factor that motivates community health workers.

In the present study, it was found that the payments made to the community health workers were an important aspect of whether they felt satisfied about their work or not. Even those who mentioned that their salaries did not matter made it a point to mention that they did consider they were not on par with the extent of the work that they had to do. Given that community health workers provide very important functions and are key to achieving universal health coverage, especially for the poor, policy-makers and programme managers need to periodically review the financial incentives that are offered to these workers and whether they are in keeping with the extent of the work they are expected to perform. While community health workers have been shown to perform their tasks motivated by a sense of social responsibility,
it might be unsustainable and even unfair to expect them to work primarily out of a sense of social responsibility. There is also a need to formalize and improve upon the existing systems of performance monitoring that are directly linked to the amount of remuneration a community health worker receives, such as records of the number of immunizations that she has facilitated, the number of deliveries that she has accompanied, etc.

Supply side
While community health workers work on the demand side of the health system, it is equally crucial that adequate attention is given to the supply side. As shown in other contexts, situations where the community health workers motivate community members and accompany them to the health centre, only to find that basic infrastructure or personnel needed to deliver services is lacking, not only demotivate them but also dent their credibility within the community, thereby also affecting their future work.

Limitations of the study
The study findings need to be interpreted while keeping the following limitations in mind. The study district was allocated by the Delhi State Health Mission, the government body in charge of the delivery of health services and the deployment of ASHAs in the state of Delhi. Hence, it is possible that the population in which the study was carried out had certain characteristics that impose limits on the generalization of the study findings. Further, the ASHA programme was comparatively new when the study was carried out; as it stabilizes, some of the factors that have been discussed might be addressed, while other new factors that motivate or demotivate community health workers might emerge, which it has not been possible to capture in this study. Nevertheless, the authors believe that their findings add to the existing knowledge on what motivates community health workers, and adds value to policy-makers and programme managers who utilize community health workers for the delivery of health-care services to the urban poor.

Conclusion
Community health workers play an important role in reaching underserved populations and providing them with health services that they would otherwise be unable to access. This study has shown that factors at the personal, community and health-systems levels interplay to either motivate or demotivate community health workers in their discharge of duties in urban areas. As efforts get under way to ensure universal access to health care, it is important that these issues are addressed, to ensure that the urban community health worker programme is effectively able to deliver services through its community health workers and is sustainable in the long run.

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References


Adoption of the 2015 World Health Organization guidelines on antiretroviral therapy: programmatic implications for India

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Abstract

The therapeutic and preventive benefits of early initiation of antiretroviral therapy (ART) for HIV are now well established. Reflecting new research evidence, in 2015 the World Health Organization (WHO) recommended initiation of ART for all people living with HIV (PLHIV), irrespective of their clinical staging and CD4 cell count. The National AIDS Control Programme (NACP) in India is currently following the 2010 WHO ART guidelines for adults and the 2013 guidelines for pregnant women and children. This desk study assessed the number of people living with HIV who will additionally be eligible for ART on adoption of the 2015 WHO recommendations on ART. Data routinely recorded for all PLHIV registered under the NACP up to 31 December 2015 were analysed. Of the 250 865 individuals recorded in pre-ART care, an estimated 135 593 would be eligible under the WHO 2013 guidelines. A further 100 221 would be eligible under the WHO 2015 guidelines. Initiating treatment for all PLHIV in pre-ART care would raise the number on ART from 0.92 million to 1.17 million. In addition, nearly 0.07 million newly registered PLHIV will become eligible every year if the WHO 2015 guidelines are adopted, of which 0.028 million would be attributable to implementation of the WHO 2013 guidelines alone. In addition to drugs, there will be a need for additional CD4 tests and tests of viral load, as the numbers on ART will increase significantly. The outlay should be seen in the context of potential health-care savings due to early initiation of ART, in terms of the effect on disease progression, complications, deaths and new infections. While desirable, adoption of the new guidance will have significant programmatic and resource implications for India. The programme needs to plan and strengthen the service-delivery mechanism, with emphasis on newer and innovative approaches before implementation of these guidelines.

Keywords: access, AIDS, antiretroviral therapy, HIV, India

Background

Globally, there is a huge momentum for and commitment to expansion of access to antiretroviral therapy (ART) services.1 It is evident from recent studies that early use of ART results in better, long-term clinical outcomes for people living with HIV (PLHIV), as well as an improved broad public health outcome in terms of prevention. The therapeutic and preventive benefits of ART are now well established.2 Worldwide, there has been a steady decline in the incidence of, and mortality related to, HIV. New HIV infections and AIDS-related deaths have decreased dramatically since the peak of the epidemic, with an estimated 36.9 million people living with HIV, 2.0 million new HIV infections and 1.2 million deaths globally in 2014.3 The current focus is on the Sustainable Development Goals (SDGs),4 wherein the world is committed to ending the AIDS epidemic as public health threat by 2030.5 In 2014, the Joint United Nations Programme on HIV/AIDS (UNAIDS) launched the 90–90–90 target, that, by 2020, 90% of all PLHIV will know their HIV status; 90% of all people with a diagnosis of HIV infection will receive sustained ART; and 90% of all people receiving ART will have viral suppression.5 Although multiple strategies need to be devised to tackle this phase of the AIDS epidemic, the provision of HIV treatment and care for all who need it is central.5

India has the third-highest burden of HIV worldwide, with an estimated 2.1 million PLHIV, which accounts for 6% of the global burden.6 The continued efforts by the National AIDS Control Programme (NACP) in India resulted in a nearly 66% decrease in new HIV infections in the country, between 2000 and 2011.7 Over the last decade, the scaling up of ART services in low- and middle-income countries has saved an estimated 4.2 million lives and 0.8 million child infections.1,8 In 2003, the World Health Organization (WHO) recommended ART for all those in WHO-defined clinical stages 3 and 4 and those with a CD4 count of ≤200 cells/mm3.9 However, the 2010 revision of these guidelines recommended increasing the threshold for ART initiation to a CD4 count of ≤350 cells/mm3 for all PLHIV who are coinfected with tuberculosis (TB) or hepatitis B virus (HBV), irrespective of their CD4 count.10 In 2013, in its first-ever consolidated guidelines on the use of antiretroviral drugs, WHO recommended raising the threshold
for initiation of ART to a CD4 count of ≤500 cells/mm³. These recommendations were based on new scientific evidence from the Strategies for Management of Antiretroviral Therapy (SMART) trial and the HIV Prevention Trials Network (HPTN) O52 study. There was also a recommendation for initiation of ART irrespective of CD4 count in certain special groups, such as PLHIV who also have active TB disease or HBV infection with severe chronic liver disease, pregnant and breastfeeding women, children aged under 5 years, and those living in a sero-discordant relationship, to reduce HIV transmission to uninfected partners. In 2015, with the availability of newer scientific evidence from the TEMPRANO (Trial of Early Antiretrovirals and Isoniazid Preventive Therapy in Africa) and START (Strategic Timing of AntiRetroviral Treatment) trials, WHO recommended initiation of ART for all PLHIV, irrespective of WHO clinical staging and CD4 cell count.

Currently, the NACP in India is implementing the 2010 WHO ART guidelines, where all PLHIV with CD4 counts ≤350 cells/mm³, or with TB coinfection or evidence of active hepatitis, are initiated on ART, and children aged under 5 years are initiated on ART irrespective of their CD4 count. In addition, as partial implementation of the 2013 WHO guidelines, all pregnant and breastfeeding women, and children aged under 5 years, who are HIV positive are also eligible for ART. India has also adopted provision of a single pill of tenofovir disoproxil fumarate + 3TC (lamivudine) + EFV (efavirenz), as recommended in the 2013 WHO guidelines. India has, in principle, agreed to adopt the 2013 WHO guidelines for adults for initiation of ART at a CD4 count ≤500 cells/mm³ and is in the process of rolling out implementation.

However, with further revision of the ART guidelines by WHO in 2015, it is important to understand the impact of the additional number of patients on the existing health system and to plan for the required logistics for sustainable delivery of the required services. New recommendations will also have implications for service delivery, which involves an essential additional requirement for antiretroviral drugs, human resources and finances. In view of this, this study aimed to estimate the number of PLHIV who will be additionally eligible for ART on adoption of the 2015 ART guidelines and the implications for the national programme in India.

Provision of antiretroviral therapy in India

India has a heterogeneous HIV epidemic that is highly concentrated geographically in six states, and socially in vulnerable populations, with an estimated national adult prevalence of 0.26% (lower and upper uncertainty bounds: 0.22%, 0.32%) in 2015. The total number of PLHIV in India was estimated at 2.12 million (lower and upper uncertainty bounds: 1.71 million, 2.65 million) in 2015. The delivery of care and treatment services for people living with HIV/AIDS is provided through ART centres. All PLHIV diagnosed at testing centres are referred to the nearest ART centre for registration, where they are assessed for ART eligibility based on WHO clinical staging, CD4 counts and certain conditions. If they are assessed as being eligible for ART according to national guidelines, they are initiated on treatment. The ART centres have been established mainly at tertiary-care hospitals (medical colleges/district or subdistrict hospitals) in the public sector, and all the services of patient management are integrated with the general health system. The NACP supports human resources, CD4 testing, antiretroviral drugs and drugs for management of opportunistic infection. Further, in states with a high prevalence of HIV, the ART services are decentralized to link ART centres, which are established at subdistrict hospitals to improve accessibility for patients. Some well-performing high-load ART centres have been upgraded and designated as centres of excellence and ART-plus centres, to provide second-line ART drugs. All the ART-related services like diagnosis of HIV, assessments of CD4 counts, and ART drugs are provided to patients free of charge. In India, there are more than 880 000 PLHIV receiving ART at 512 ART and 1080 link ART centres.

Methodology

This cross-sectional study involved retrospective review of records and reports routinely recorded under the NACP. The study population was all PLHIV registered at the ART centres for HIV care under the NACP up to 31 December 2015. The data were extracted from electronic databases maintained in ART centres for PLHIV. The data source included pre-ART registers, ART registers, patients’ treatment cards maintained at each of the ART centres routinely for monitoring and evaluation, and the monthly progress report submitted to the National AIDS Control Organisation India (NACO). The key variables recorded were pre-ART numbers, age, sex, baseline CD4 count at the time of registration (for new PLHIV registered during the last year) and the last available CD4 count (for PLHIV already registered in pre-ART care).

The data abstracted from the electronic databases were analysed to estimate the number of PLHIV who would additionally become eligible for ART. The data were already present in electronic format and were analysed using Microsoft Excel. The necessary approval for analysis of data and projections was obtained from NACO. Since this was a retrospective review of existing programme data and did not involve any direct patient interaction, individual informed consent was not required. Personal identifiers in the data were not redacted.

Review outcomes

As of December 2015, nearly 1.17 million PLHIV were registered in active HIV care under the programme, of which 0.92 million were registered for ART care, while 250 865 were registered for pre-ART care. A person living with HIV is said to be on active pre-ART care, if he or she is not on ART but has undergone CD4 counts in the last year. For the purpose of analysis, the study only considered those who were in active pre-ART care under the programme; those patients reported as deceased, lost to follow-up, or opted out of the programme in pre-ART care were excluded.

Estimates were made to assess the impact of implementation of the revised 2015 WHO guidelines on ART service delivery at two levels, (i) the immediate increase in the number of PLHIV requiring ART as a result of individuals already registered in active pre-ART HIV care under the programme; and (ii) the recurring annual increase in the number of PLHIV requiring ART, of those newly registering under the programme.
Estimates for the immediate increase in the number of people living with HIV needing antiretroviral therapy

In addition to those treated under the programme, all PLHIV who are in active pre-ART with a CD4 count ≥350 cells/mm³ and ≤500 cells/mm³ become eligible for ART according to the 2013 WHO guidelines, and all PLHIV irrespective of CD4 count become eligible for ART according to the 2015 WHO guidelines.\(^{16}\)

Out of the 250,865 PLHIV in pre-ART care at December 2015, 135,593 had a CD4 count ≤500 cells/mm³ and thus became eligible according to the 2013 WHO guidelines (see Box 1).\(^{11}\) Another 100,221 would be eligible if the recommendation in the 2015 WHO guidelines to “treat all” is adopted,\(^{16}\) thereby moving all PLHIV who are in pre-ART care to ART.

Estimates for the recurring annual increase of new enrolment of people living with HIV in the programme

The trend in the number of PLHIV registered under the programme suggests that nearly 0.18 million become newly registered in HIV care in India every year. In 2015, a total of 0.179 million were registered for HIV care, although the eligibility could be assessed for only 0.162 million for whom a baseline CD4 count was done. Of the total registrants, 0.107 million (59.7%) were eligible for ART at the time of enrolment, according to the 2010 WHO guidelines (CD4 count <350 cells/mm³).\(^{10}\) Therefore, if the newer WHO criteria were implemented, the remaining 0.07 million of the total 0.179 million would become eligible for treatment. Based on the known proportions of baseline CD4 counts, new eligibility would be attributable for an estimated 0.028 million (15.8%) due to the 2013 WHO guidelines (CD4 count ≤500 cells/mm³);\(^{11}\) for 0.030 million (16.8%) due to the 2015 WHO guidelines (CD4 count ≥500 cells/mm³; see Box 1);\(^{16}\) and for 0.014 million (7.7%) PLHIV whose ART CD4 counts cannot be determined for various operational reasons.

Overall estimated increase

The projected numbers of eligible PLHIV who will be eligible for ART, according to the 2013\(^{11}\) and 2015\(^{16}\) WHO guidelines for the next 3 years, are shown in Table 1.

<table>
<thead>
<tr>
<th>Year</th>
<th>WHO guidelines</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010(^{10})</td>
<td>0.92</td>
<td>1.03</td>
<td>1.13</td>
<td>1.24</td>
<td></td>
</tr>
<tr>
<td>2013(^{11})</td>
<td>—</td>
<td>1.19</td>
<td>1.33</td>
<td>1.46</td>
<td></td>
</tr>
<tr>
<td>2015(^{16})</td>
<td>—</td>
<td>1.35</td>
<td>1.53</td>
<td>1.71</td>
<td></td>
</tr>
</tbody>
</table>

Discussion

Adoption of the 2015 WHO guidelines on ART\(^{16}\) would be a pivotal step towards universal access for treating and preventing HIV in India. The country may expect a significant additional number of PLHIV at the existing ART centres, on adoption of the 2015 guidelines.\(^{16}\) In addition, nearly 0.070 million will be added annually each year, over and above the current pace of enrolment, if the newer criteria are implemented. A patient on ART takes it for life; hence, the NACP will have to ascertain the availability and sustainability of funding. It is expected that the benefits of implementation of the 2015 guidelines will outweigh the upfront investment needed and have the potential to change the course of the epidemic in the country.

The HIV modelling consortium used multiple mathematical models on data sets from five countries, including India, to assess the impact and cost effectiveness of implementation of newer guidelines, and found that it would be beneficial.\(^{11}\) For India, the costs from the health-system perspective of extending eligibility to all PLHIV were modelled as US$ 131–241 per disability-adjusted life-year averted, which was classified as “very cost effective”.\(^{11}\)

There are several programmatic implications of adoption of these guidelines. First, there will be a marginal increase in the workload at ART centres. However, since the HIV epidemic is concentrated in six high-prevalence states and among vulnerable populations, the workload at ART centres is unlikely to increase in a uniform manner. The distribution of additional PLHIV requiring ART will be higher in ART centres that already have higher load. Differential indicators and strategies for service delivery will need to be adopted to strengthen the existing ART centres to match the workload. To avoid congestion at ART centres, the following strategies may be adopted: (i) giving 3 months’ drug stock at a time to PLHIV who are clinically stable; (ii) giving patients scheduled appointments and calling them on a fixed date and time of the month; and (iii) integrating ART services into the general health system. Expansion of decentralized delivery of services via “closer-to-home” link ART centres, a model currently employed in high-prevalence states, may also help in mainstreaming ART services. Implementation of the above strategies would resolve the additional human-resource requirements and streamline the procurement, supply and delivery of drugs to the patients.

Secondly, there should be a sustainable and continued supply of logistics. Robust procurement and supply-management systems are needed to ensure continued supply of ARV drugs, diagnostics and other commodities across various levels of programme implementation. A real-time supervisory mechanism to monitor the supply-chain management of logistics needs to be established for improvement of the programme. In addition to drugs, there will be a need for additional CD4 tests and tests of viral load.
Thirdly, the programme will also need to gear-up to take care of the changing needs of PLHIV on such long-term ART, for example, by providing adherence support, chronic care and checks for drug resistance, as well as other future options for ART for cases of treatment failure. Development of novel tracking mechanisms to keep a tab on pre-ART patients will decrease the likelihood of loss to follow-up. The national programme should prioritize operational research to evaluate the newer approaches and provide feasible solutions to deliver quality services under the programme. Critically, there is a need to strengthen monitoring and evaluation mechanisms. A framework to expand and strengthen HIV testing and counselling is also needed, to engage those who are difficult to reach and bring people who need treatment into the continuum of care.

Fourthly, it is crucial for any health programme to engage with other stakeholders and line departments. There is an absolute need to optimally link HIV interventions with other partners, such as the medical services of large employers like the railway and defence department, as well as the private sector, to increase coverage, optimize resources and ensure long-term sustainability for the programme. It is clear that early initiation of ART will decrease morbidity and mortality; this opportunity should be utilized to engage with health-insurance providers and HIV should be covered under insurance schemes.

To conclude, in view of the benefit to patients, as well as considering the long-term vision of the programmes, the adoption of newer guidelines is of utmost benefit to PLHIV, as well as for achievement of the larger goal of the NACP. However, the programme should plan and strengthen its delivery mechanism, with emphasis on newer and innovative delivery approaches before progressing to implementation.

The study has some limitations. The concluded implications are based on the available programme data and current trends. The newer initiatives being taken by the programme to increase testing and HIV diagnosis, aiming towards the vision of 90–90–90,6 and also to improve patient retention within the HIV-care system, have not been taken into consideration in the estimated data.

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Conflict of interest: None declared.

Authorship: The idea was conceived by RBB, RA and RAS. RA, SS and SBN contributed to data analysis and writing and all authors contributed to writing and approving the final manuscript.


References


Delivery of antiretroviral treatment services in India: estimated costs incurred under the National AIDS Control Programme

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Abstract
Competing domestic health priorities and shrinking financial support from external agencies necessitates that India’s National AIDS Control Programme (NACP) brings in cost efficiencies to sustain the programme. In addition, current plans to expand the criteria for eligibility for antiretroviral therapy (ART) in India will have significant financial implications in the near future. ART centres in India provide comprehensive services to people living with HIV (PLHIV): those fulfilling national eligibility criteria and receiving ART and those on pre-ART care, i.e. not on ART. ART centres are financially supported (i) directly by the NACP; and (ii) indirectly by general health systems. This study was conducted to determine (i) the cost incurred per patient per year of pre-ART and ART services at ART centres; and (ii) the proportion of this cost incurred by the NACP and by general health systems. The study used national data from April 2013 to March 2014, on ART costs and non-ART costs (human resources, laboratory tests, training, prophylaxis and management of opportunistic infections, hospitalization, operational, and programme management). Data were extracted from procurement records and reports, statements of expenditure at national and state level, records and reports from ART centres, databases of the National AIDS Control Organisation, and reports on use of antiretroviral drugs. The analysis estimates the cost for ART services as US$ 133.89 (₹8032) per patient per year, of which 66% (US$ 88.66, ₹5320) is for antiretroviral drugs and 34% (US$ 45.23, ₹2712) is for non-ART recurrent expenditure, while the cost for pre-ART care is US$ 33.05 (₹1983) per patient per year. The low costs incurred for patients in ART and pre-ART care services can be attributed mainly to the low costs of generic drugs. However, further integration with general health systems may facilitate additional cost saving, such as in human resources.

Keywords: antiretroviral therapy, HIV, India, NACP, unit costs

Background
Despite substantial price reduction in recent years, the cost of antiretroviral therapy (ART) typically constitutes a significant component of a country’s overall expenditure on its national HIV/AIDS control programme.1 Adequate funding for ART programmes is critical to achieving universal access to HIV/AIDS services.2 With limited financial resources available, programmes must demonstrate cost effectiveness. As with other low- and middle-income countries, competing domestic health priorities and shrinking financial support from external agencies mean that India’s National AIDS Control Programme (NACP) needs sustainable funding mechanisms. Plans to expand the criteria for eligibility for ART in India will have significant financial implications in the near future.3 There are no cost data on delivery of care for people living with HIV (PLHIV) under the current (i.e. third) phase of the National AIDS Control Programme (NACP III) in India. This study therefore estimates the baseline unit costs for the programme, to inform budget planning, scaling up of services and delivery of the logistics for effective functioning of the programme on an annual basis.

Context of care for people living with HIV in India
In 2015, the estimated national prevalence of HIV for adults in India was 0.26% (lower and upper uncertainty bounds: 0.22%, 0.32%).4 The Government of India launched the free ART initiative on 1 April 2004 at eight institutions in six high-prevalence states, under NACP II, and scaled up the services to the entire country in a phased manner. The delivery of care and treatment services for people living with HIV/AIDS under the public sector is provided through ART centres, which are usually established in existing hospital settings like medical colleges and district hospitals. The ART centres provide comprehensive services to all PLHIV enrolled under the programme, which includes those fulfilling national eligibility criteria and receiving ART and those on pre-ART care. A person living with HIV is said to be on active pre-ART care, if he or she is not on ART but has undergone CD4 counts in the last year. The services include initial clinical evaluation, counselling, prophylaxis and management of opportunistic infections, and regular follow-up of patients.
The ART centres under the programme are financially supported (i) directly by the NACP; and (ii) indirectly by general health systems on a shared costs basis. The NACP supports human resources, including medical doctors, counsellors, nurses, pharmacists, data managers and care coordinators; it also supports capacity-building of the health-care providers in HIV care, infrastructure development, monitoring and evaluation, antiretroviral drugs, testing of CD4 cell count, and co-trimoxazole prophylaxis and treatment of complex opportunistic infections. Support from the general health systems for the ART programme in the country is provided in terms of infrastructure and space for service delivery; consultation services from the specialists of critical departments (medicine, microbiology, obstetrics and gynaecology, paediatrics, dermatology/venereology); provision of laboratory investigations, drugs for the treatment of opportunistic infections, and other essential drugs required for PLHIV; inpatient care for PLHIV; deputation of an institutional staff nurse to support the contractual staff at each ART centre; and maintenance of the centres (housekeeping services, provision of electricity and water supply and management of biomedical waste).

Methodology

This study was conducted to determine (i) the cost incurred per patient per year of pre-ART and ART services at ART centres; and (ii) the proportion of this cost incurred by the NACP and by the general health systems. The study used national data from April 2013 to March 2014. As of March 2014, nearly 1.1 million PLHIV were enrolled in active care, of whom nearly 0.77 million were receiving ART from 432 ART centres across the country. Nearly 10,000 PLHIV were receiving second-line ART at 10 centres of excellence and selected ART-plus centres.

Permission to conduct the study was obtained from the implementing authorities of the National AIDS Control Organisation (NACO), New Delhi, India.

Cost components

Different functional components of the ART programme were identified as cost categories: (i) laboratory tests; (ii) human resources; (iii) training for capacity-building; (iv) prophylaxis and treatment for opportunistic infections; (v) hospitalization; (vi) operational; and (vii) programme management. The costs of antiretroviral drugs were estimated separately. All the costs are expressed per patient per year. These costs were calculated for pre-ART and ART care services. For most cost categories, a top-down approach was used in calculation.

A key component of this costing exercise involved estimating shared costs, which includes the costs of inputs that are not exclusive to the ART programme, but are necessary for the programme to function. Therefore, further disaggregation was done into (i) direct costs; and (ii) shared costs, to understand the costs borne by the programme and by general health systems respectively. Direct costs are defined for operational reasons as the costs incurred directly by the programme to implement pre-ART/ART services. Shared costs, for operational reasons, are defined as the costs incurred by the general health system for the resources that are utilized by the programme. The costs for subsidiary items such as space, infrastructure and maintenance were not calculated because insufficient data were available to calculate meaningful national data, owing to variability in these factors among centres.

Sources of data and analysis

Programme costs were estimated from data for the financial year 2013–2014 (1 April 2013 to 31 March 2014). The data for calculation were obtained from procurement records and reports, statements of expenditure from national and state-level data, records and reports from ART centres, databases of the NACO central procurement and financial management software and strategic information management system software, and reports on use of antiretroviral drugs. Since the data on hospitalization were not uniformly maintained across all the ART centres under programmatic settings, information gathered from selected ART centres was extrapolated and an average cost was calculated.

The details of the cost categories, expenditure items and types, rationale for inclusion, sources of data, and other considerations are summarized in Table 1. The data were analysed using Microsoft Excel and the World Health Organization (WHO) Guidance for completing the financial indicators for ART programmes in the universal access questionnaire, which was adapted to include other cost categories in the context of the NACP.

Cost estimates

The various headings under which costing was calculated are shown in Table 2. The cost for the ART component and the rationale for inclusion are explained in the table.

Patients in ART care

The estimated cost for ART services is US$ 133.89 (5320) per patient per year, of which 66% (US$ 88.66, 5632) is for antiretroviral drugs and 34% (US$ 45.23, 5721) is for non-ART recurrent expenditures. Of the total non-ART expenditure of US$ 45.23 (5721) per person per year, US$ 32.51 (1949, 72%) is borne by the NACP and the remaining US$ 12.72 (763, 28%) is borne by health systems (see Table 2).

Patients in pre-ART care

The estimated cost for pre-ART care is US$ 33.05 (1983) per patient per year, of which, US$ 19.29 (1158, 58%) is borne by the NACP and US$ 13.76 (825, 42%) is borne by the health systems (see Table 3).

Discussion

To the best of authors’ knowledge, this is the first national study conducted in India to estimate the cost of delivery of care for PLHIV under the current (i.e. third) phase of the NACP (NACP III) in India, which started in 2007. The study found that the costs incurred for patients in ART and pre-ART care services are low. An earlier study carried out by Gupta et al. was based on data collected between 2004 and 2006 from seven selected ART centres in India. The programme components costed in that study included antiretroviral drugs, treatments for opportunistic infections, diagnostic tests and human resources but the health-systems costs were not included. The authors in that study extrapolated their estimates to project an average unit cost per patient per year of about US$ 350. The present study has used costs for 2013–2014 and drug costs had reduced significantly from the 2006 costs used in the study by Gupta et al.
Table 1. Details of the cost categories, expenditure types and items, rationale for inclusion, sources of data and other considerations

<table>
<thead>
<tr>
<th>Cost categories and expenditure items (expenditure types included)</th>
<th>Rationale for inclusion</th>
<th>Sources of data</th>
<th>Other considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laboratory tests and consumables (direct costs and shared costs): Total cost of laboratory services for the reporting period: - cost of CD4 testing - cost of testing viral load, and for routine examinations – haemoglobin, blood urea and liver function tests - cost of X-ray service, and cost of using and maintaining CD4 machines Includes the cost of consumables and human resources</td>
<td>The cost of laboratory tests is significant</td>
<td>The total costs of CD4 tests and tests of viral load have been calculated considering the total number of tests done during the reporting period and their cost according to the programme: - cost of sample transport (for linked centre) - expenditure on human resources - cost of reagents - cost of using and maintaining laboratory equipment - overheads and management costs. The cost of routine investigation is calculated considering the total number of tests done in a year and the average cost per test to the health system</td>
<td>The cost for pre-ART and ART patients could not be differentiated; an estimate of split was worked out using laboratory-test utilization and cost ratios based on country protocols. Laboratory costs for tests done in a health-care facility have been extrapolated from estimates from costing studies of facility-based testing and rates at which the tests are routinely provided to patients in government facilities.</td>
</tr>
<tr>
<td>Human resources (direct costs and shared costs): Total cost of all human resources with designated roles within the provision of ART programme services, whether on a full-time basis or a shared-staff basis Includes medical staff, paramedical staff and housekeeping staff at the centres</td>
<td>Human resources are the backbone of the ART programme. Human resources are managed directly by the programme management units</td>
<td>Facility-wise reports on staffing. Reports on staffing at state level (direct and shared) and at national level</td>
<td>Costs were excluded for staff not directly employed by or responsible for ART service delivery and for those spending a very small amount of time on the ART programme.</td>
</tr>
<tr>
<td>Training (direct costs): Total cost of all training programmes conducted for various levels of staff</td>
<td>Expenditure on training has direct bearing on the quality of services</td>
<td>The cost of all training is borne by SACS. Expenditure incurred by the SACS on account of training was taken into consideration</td>
<td>None</td>
</tr>
<tr>
<td>Prophylaxis and treatment of opportunistic infections (direct costs and shared costs): Total cost of providing prophylaxis and treatment for management of opportunistic infections in PLHIV</td>
<td>The number of PLHIV given co-trimoxazole prophylaxis or treatment for opportunistic infection was taken from ART reports. Expenditure incurred by the SACS was considered; in addition, costs for opportunistic infections, such as TB, that are managed by general health systems were taken from the respective sources.</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Hospitalization (shared costs): Total cost of treating patients suffering from opportunistic infection, HIV-related illness or severe adverse drug reactions requiring admission to hospital</td>
<td>A major portion of the cost incurred by health systems is on hospitalization of PLHIV. As records of hospitalization are not maintained at NACO or SACS level, the information was collected from a few ART centres that maintain these records and then extrapolated to all PLHIV registered under the programme.</td>
<td>As the records on hospitalization of PLHIV were not available, it was not possible to work out the cost of hospitalization; therefore, the average cost incurred by hospitals per day’s stay for patients was taken from other studies.</td>
<td></td>
</tr>
<tr>
<td>Operational costs (direct costs and shared costs): Includes recurring cost for routine maintenance of ART centres, i.e. consumables for maintenance of universal work precautions</td>
<td>These costs are routinely required for day-to-day functioning of ART centres</td>
<td>As the cost of all operational costs was considered, this cost was not included in the study.</td>
<td>None</td>
</tr>
<tr>
<td>Programme management, including monitoring and evaluation (direct costs): Total cost for staff at national, regional and state programme management units designated with specific roles and responsibilities</td>
<td>There are dedicated data managers at ART centres, varying according to the incremental load of patients. Expenditure by SACS for the salary of data managers</td>
<td>As the cost for pre-ART and ART patients could not be differentiated; an estimate of split was worked out using laboratory-test utilization and cost ratios based on country protocols. Laboratory costs for tests done in a health-care facility have been extrapolated from estimates from costing studies of facility-based testing and rates at which the tests are routinely provided to patients in government facilities.</td>
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<tr>
<td>Antiretroviral drugs (direct costs): Total cost of procuring and distributing antiretroviral drugs consumed for first-line treatment, and second-line treatment for the reporting period, including antiretroviral drugs for adult and paediatric patients. Includes the costs of programme supply-chain management and duties and tariffs on drugs</td>
<td>The cost of antiretroviral drugs has been shown to make up between one third and one half of the total cost of an ART unit. As the cost of antiretroviral drugs is based on the actual value of the drugs consumed during the reporting period; the source was consumption data from the ART monthly drug reports from each of the ART centres. The costs per tablet were obtained from the purchase orders. The costs of programme supply-chain management duties and tariffs were taken from procurement records and reports.</td>
<td>Warehouse and distribution costs have been included, based on expenditure reported by SACS in CPFMS for supply-chain management of drugs. The costs of drugs that expired during the period have been included and noted as wastage.</td>
<td></td>
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</tbody>
</table>

The United States President’s Emergency Plan for AIDS Relief (PEPFAR) is supporting ART treatment in many countries across the globe; their estimated costs per patient per year for 2006–2009 were US$ 436; the cost components included were similar to those in the present study. A report from Zambia suggests that the cost for a first-line HAART (highly active antiretroviral therapy) regimen is US$ 488 per patient per year, which also includes diagnostics. A systematic review conducted in 2011 on unit costs for delivery of ART and prevention of mother-to-child transmission of HIV estimated that the median cost of ART per patient per year was US$ 792 for lower-middle-income countries and US$ 1454 for upper-middle-income countries, about 47% of the costs were spent on antiretroviral drugs alone. The Multi-country Analysis of Treatment Costs for HIV/AIDS (MATCH) in 2010—2011, which included all the components of service delivery, revealed that the costs ranged from US$ 208 to US$ 682 per person per year across the countries studied (Ethiopia, Malawi, Rwanda, South Africa and Zambia).

In India, the cost per person per year is comparatively less when compared to PEPFAR-supported treatment sites across 12 countries. The use of generic drugs, bulk procurement of drugs and reagents at a national level, and reduction in drug costs over the years has contributed to a low cost for commodities. The lower cost in India may also be attributed to efficient use of general health systems. Also, India has the capacity to scale up its ART services, using the country-owned domestic drug manufacturing base. The low non-ART costs identified in this study may be attributed to expanded eligibility criteria for initiation of ART and improvement in the median CD4 count of PLHIV at the time of reporting, with a consequent reduction in the need for management of opportunistic infections, hospitalization and visits to ART centres.

The training cost incurred is low at below 1% of the total costs, which is due to the strategy adopted for strengthening and capacity-building of general health staff, through establishment of centres of excellence. However, aside from the costs for diagnostics and antiretroviral drugs, the costs of human resources contribute significantly to the programme. Therefore, the programme may still need to consider innovative approaches for delivery and monitoring of individual patients’ treatment, thereby saving the time and resources of general health staff while maintaining quality service delivery. This, and other areas for additional cost saving, may involve further integration between ART centres and general health systems.

The study has some limitations. It has focused on direct costs for providing services to PLHIV under pre-ART and ART care, through the perspective of the programme. However, indirect costs and capital costs (cost of space, infrastructure costs, laboratory establishment costs, depreciation rates of operational costs, human resources) contribute significantly to the programme.

### Table 2. Categories and costs considered for calculating the cost for patients on antiretroviral therapy (2013–2014)

<table>
<thead>
<tr>
<th>Cost categories</th>
<th>Borne by the NACP, US$ ($)</th>
<th>Shared by general health systems, US$ ($)</th>
<th>Total, US$ ($) (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-ART costs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laboratory tests and consumables</td>
<td>8.61 (516)</td>
<td>0.95 (57)</td>
<td>9.56 (573) (7.1%)</td>
</tr>
<tr>
<td>Human resources</td>
<td>17.17 (1030)</td>
<td>0.99 (59)</td>
<td>18.16 (1089) (13.6%)</td>
</tr>
<tr>
<td>Training</td>
<td>0.66 (39)</td>
<td>0.00 (0)</td>
<td>0.66 (39) (0.5%)</td>
</tr>
<tr>
<td>Prophylaxis and treatment of opportunistic infections</td>
<td>2.25 (135)</td>
<td>2.25 (135)</td>
<td>4.50 (270) (3.4%)</td>
</tr>
<tr>
<td>Hospitalization</td>
<td>0.00 (0)</td>
<td>8.18 (491)</td>
<td>8.18 (491) (6.1%)</td>
</tr>
<tr>
<td>Operational costs</td>
<td>3.14 (188)</td>
<td>0.30 (18)</td>
<td>3.44 (206) (2.6%)</td>
</tr>
<tr>
<td>Programme management, including monitoring and evaluation</td>
<td>0.68 (41)</td>
<td>0.05 (3)</td>
<td>0.73 (44) (0.5%)</td>
</tr>
<tr>
<td>Total non-ART costs</td>
<td>32.51 (1949)</td>
<td>12.72 (763)</td>
<td>45.23 (2712) (33.8%)</td>
</tr>
<tr>
<td>Cost of antiretroviral drugs</td>
<td>88.66 (5320)</td>
<td>0.00 (0)</td>
<td>88.66 (5320) (66.2%)</td>
</tr>
<tr>
<td>Total</td>
<td>121.17 (7269)</td>
<td>12.72 (763)</td>
<td>133.89 (8032) (100%)</td>
</tr>
</tbody>
</table>

**ART:** antiretroviral therapy; **NACP:** National AIDS Control Programme.

### Table 3. Categories and costs considered for calculating the cost per patient per year for patients on pre-ART care (2013–2014)

<table>
<thead>
<tr>
<th>Cost categories</th>
<th>Borne by the NACP, US$ ($)</th>
<th>Shared by general health systems, US$ ($)</th>
<th>Total, US$ ($) (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-ART costs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laboratory tests and consumables</td>
<td>7.81 (468)</td>
<td>1.79 (107)</td>
<td>9.60 (575) (29.0%)</td>
</tr>
<tr>
<td>Human resources</td>
<td>7.73 (464)</td>
<td>0.80 (48)</td>
<td>8.53 (512) (25.8%)</td>
</tr>
<tr>
<td>Training</td>
<td>0.23 (14)</td>
<td>0.00 (0)</td>
<td>0.23 (14) (0.7%)</td>
</tr>
<tr>
<td>Prophylaxis and treatment of opportunistic infections</td>
<td>2.21 (133)</td>
<td>2.21 (133)</td>
<td>4.42 (266) (13.4%)</td>
</tr>
<tr>
<td>Hospitalization</td>
<td>0.00 (0)</td>
<td>8.84 (530)</td>
<td>8.84 (530) (26.7%)</td>
</tr>
<tr>
<td>Operational costs</td>
<td>1.08 (65)</td>
<td>0.10 (6)</td>
<td>1.18 (71) (3.6%)</td>
</tr>
<tr>
<td>Programme management, including monitoring and evaluation</td>
<td>0.23 (14)</td>
<td>0.02 (1)</td>
<td>0.25 (15) (0.8%)</td>
</tr>
<tr>
<td>Cost of antiretroviral drugs</td>
<td>0.00 (0)</td>
<td>0.00 (0)</td>
<td>0.00 (0) (0%)</td>
</tr>
<tr>
<td>Total</td>
<td>19.29 (1158)</td>
<td>13.76 (825)</td>
<td>33.05 (1983) (100%)</td>
</tr>
</tbody>
</table>

**ART:** antiretroviral therapy; **NACP:** National AIDS Control Programme.
equipment, and maintenance costs of ART centres) were not included. The study has also not included the cost incurred for the functioning of ART care and support centres.

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References


Foreword

Editorial
Care for mental disorders and promotion of mental well-being in South-East Asia
Nazneen Anwar, Thaksaphon Thamarangsi

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Mental health policies in South-East Asia and the public health role of screening instruments for depression
Pratap Sharan, Rajesh Sagar, Saurabh Kumar

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Nazneen Anwar, Pooja Patnaik Kuppili, Yatan Pal Singh Balia

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Neil Fernando, Thirupathy Susveendran, Chithramalai de Silva

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Surendra Sherchan, Reuben Samwel, Kedar Marahatta, Nazneen Anwar, Mark Humphrey Van Ommere, Roderico Ofrin

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Lakshmi Vijayakumar

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Thararit Kongkaew, Sudha Supanya, Kedakamorn Kunbudsopha, Supranee Phimmra, Supattra Suhawaha, Jintana Leepongpoom

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Gampa Dorji, Sonam Tshoeri, Kings Jampel, Yathi Wangdi, Tandin Choigyal, Chensho Dorji, Damber Kumar Nirula

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Kedar Marahatta, Reuben Samuel, Pawan Sharma, Lorin Dott, Bhola Ram Shrestha

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Co-occurring depression and alcohol use disorders in South-East Asia: a narrative review
Yatan Pal Singh Balia, Prasant Gupta, Dewakshi Elawadi

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Bharat Bhusan Rewari, Reshu Agarwal, Suresh Shastri, Sharath Burungina Naganaja, Abhalekh Singh Rathore

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Reshu Agarwal, Bharat Bhusan Rewari, Suresh Shastri, Sharath Burungina Naganaja, Abhalekh Singh Rathore