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## **Global Burden of Mental Disorders: Meeting the Challenge**

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### **SUMMARY**

Mental disorders are one of the major contributors to the global burden of disease, constituting about 14% of the burden. Both severe mental disorders (SMDs) as well as the common mental disorders (CMDs) contribute to the global burden of disease and are responsible, and need active intervention on the part of mental health experts and the health planners. Inadequate mental health resources and a large untreated population are important contributors to the burden. Thus the global burden of disease due to mental disorders imposes a major challenge. Possible solutions include enhancing the manpower resources, improving the mental health literacy, integration of mental health in general medical care and active community participation. Under the National Mental Health Programme of India, a number of such activities have been undertaken. The primary care doctors are also an important resource, since they provide care to a vast majority of the patients with CMDs. Strengthening primary care for the mental disorders, raising community awareness, mental health promotion, and control of alcohol and substance abuse could be important strategies in meeting the challenge. There is also need for creating services for enhancing welfare measures for the patients with disability due to mental disorders. Barriers to the mental health care and services also need to be tackled.

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## INTRODUCTION

Neuropsychiatric disorders are a major contributor to the global burden of disease, responsible for around 14% of the disease burden (1). Depression, bipolar disorder, schizophrenia, and alcohol and substance-use disorders are the major contributors to this burden. The World Health Organization (WHO) estimates the life time prevalence of mental disorders at about 25%. About 20-25% of the patients attending various medical settings suffer from an underlying psychiatric disorder (2). The burden caused by mental disorders imposes a major challenge to the mental health professionals and the health planners, especially in the low resource countries like India. There is a need to develop well planned strategies to deal with this burden.

This presentation discusses the concept of global burden of disease, extent of problem due to mental disorders, characteristics of the burden caused by mental disorders, challenges imposed by it, barriers and strategies to meet the challenges.

### **Global Burden of Disease :**

Historically, mental disorders were never a global health priority, especially when compared with communicable diseases and non-communicable diseases such as cancer or cardiovascular disease, because in health planning the focus was always on mortality statistics. With the publication of the World Development Report in 1993

by the World Bank, global attention was also directed to the relative burden associated with disease morbidity, rather than mortality alone. Mental and substance use disorders were identified as major contributors to the global burden of disease. The Harvard School of Public Health in collaboration with the World Bank and the WHO assessed the Global Burden of Disease (GBD) study in 1993. To estimate burden of disease, the GBD study used the concept of the disability adjusted life years (DALYs), besides assessing the mortality and morbidity statistics (3). DALY is a health gap measure, which combines the impact of premature death, and disability and other non-fatal health outcomes. One DALY can be thought of as one lost year of healthy life. DALYs for a disease are the sum of the years of life lost due to premature mortality (YLL) and the years lost due to disability (YLD).

The GBD 1990 showed that mental and neurological disorders accounted for 10.5% of the total DALYs (3). WHO reassessed the GBD for 2000 and estimated that the neuropsychiatric disorders (mental, neurological and substance use disorders) accounted for more than a quarter of all non-fatal burden, measured in years lived with disability (YLD). Depression was the most disabling disorder worldwide measured in YLDs, and the fourth leading cause of overall burden measured in disability adjusted life years (DALYs). Depression was associated with the largest amount of disability, accounting for almost 12% of the YLDs. The

contribution of mental and neurological disorders to the global burden increased to 12.3% in 2000 (2) and 14% in 2005 (1). In the GBD 2000 study, mental and neurological conditions accounted for 30.8% of all YLDs. Depression, alcohol use disorders, self-inflicted injuries, schizophrenia and bipolar disorder were amongst 10 leading causes of DALYs in the most productive age group of 15-44 years. Six neuropsychiatric conditions figured in the top twenty causes of YLDs in the world. These included unipolar depression, alcohol use disorders, schizophrenia, bipolar affective disorder, Alzheimer's and other dementias, and migraine (2).

In 2007, a new GBD study was launched and the results for the Global Burden of Diseases, Injuries and Risk Factors Study 2010 (GBD 2010) were reported in December 2010(4). GBD 2010 was a comprehensive reanalysis of burden for 291 causes, 20 age groups, both sexes, and 187 countries in 21 world regions for 1990 and 2010. The number of specific mental and substance use disorders was expanded to 20 disorders, consisting of all anxiety disorders (compared with three in the original study), eating disorders (anorexia nervosa and bulimia nervosa), childhood behavioural disorders (attention-deficit/hyperactivity disorder and conduct disorder), pervasive developmental disorders (autism and Asperger's syndrome), and idiopathic intellectual disability, a residual category capturing intellectual disability not attributed to any of the other diseases and injuries.

Substance use disorders were expanded to include burden for alcohol use disorders (alcohol dependence and foetal alcohol syndrome) and illicit drug use disorders (opioid dependence, cannabis dependence, cocaine dependence, and amphetamine dependence).

Worldwide, mental and substance use disorders accounted for 183.9 million DALYs (95% UI 153.5 million– 216.7 million), or 7.4% (6.2–8.6) of total disease burden in 2010. Global burden caused by the mental disorders was higher than that due to HIV/AIDS and tuberculosis, and diabetes, urogenital, blood and endocrine diseases. Although the burden of mental and substance use disorders increased by 37.6% between 1990 and 2010, the change for mental disorders was almost entirely attributable to population growth and ageing. The group were the leading global cause of all non-fatal burden of disease (YLDs), and the fifth leading disorder category of global DALYs. It accounted for 175.3 million (95% UI 144.5 million– 207.8 million) YLDs, or 22.9% (18.6–27.2) of all non-fatal burden. The burden of mental and substance use disorders spanned all age groups. The highest proportion of DALYs occurred in adolescents and young to middle-aged adults (aged 10–29 years) (5). Cumulative global effect of mental disorders in terms of lost economic output has been estimated to the extent of US \$16 trillion in the next 20 years, which is equivalent to 25% of global GDP in 2010 (6).

### **Burden due to mental disorders :**

Broadly, from the public health point of view, the mental disorders can be divided into severe mental disorders (SMDs) and common mental disorders (CMDs). SMDs include schizophrenia, bipolar disorder, severe depression and other psychotic disorders, whereas CMDs mainly include anxiety disorders, depression, somatoform and other neurotic disorders. Both SMDs as well as CMDs contribute to global burden and disability (1, 3, 4, 5, 7-9). Burden imposed by the mental disorders is a major challenge to the public health, considering the high prevalence of the mental disorders, inadequate resources and a number of barriers to seeking care. There is a large untreated population of persons with mental disorders (2).

Burden due to the mental disorders is contributed by the effect of illness on the patient, the family and the society at large (2, 7, 9). Most mental disorders, both SMDs as well as the CMDs tend to last for a long time with duration varying from months to years to life long, and often have first onset at a young age. Hence, the illness affects the most productive period of the life. If the onset is during adolescence or early 20s, it affects the academic career and early professional growth, and if it occurs during the later period, it would affect the social, occupational and family functioning. The illness affects almost all spheres of life, personal, family, occupation and social. Persons with mental illness also face social stigma and

discrimination from the society. Mental disorders can be disabling, and the sufferer may not be able to function to the full capacity, further adding to the burden. The patient also has difficulty in getting a job, since the prospective employers often don't want to employ a person with mental illness because of the associated stigma, and a notion that the person may not be able to perform to full capacity. Persons with mental illness many times are perceived as prone to violent or disorganised behaviour, and also portrayed in the media in such a manner. All these factors add to the financial problems of the patient and his or her family.

The patients and their family members often face social ostracism, with the friends, neighbours and relatives often avoiding them and not maintaining relations with them. The family members also have to face the violent and disorganised behaviour of their patients in periods of relapse (7). In our country, the families are main caregiver of the persons with mental illness, and hence face considerable stress and burden. The caregiving role also takes a lot of time of the family members, affecting their functioning in different areas. The caregivers also face financial problems since they have to take leave from their job affecting their income (10, 11). Costs of the treatment including periodic visits to the doctor further add to the financial burden.

Suicide rate is also high in persons with mental disorders, with nearly 10-

15% of patients suffering from schizophrenia, bipolar disorder, depression and alcohol dependence ending their life by suicide (12).

Persons with mental illness are also prone to develop different medical problems. Patients suffering from schizophrenia, bipolar affective disorder and other psychotic disorders are at a higher risk to develop nutritional deficiencies, cardiovascular and metabolic disorders, and infectious diseases. Due to their poor communication ability and the treating doctor focussing on psychiatric symptoms, physical problems tend to be missed till in advanced state. The life span of patients with schizophrenia, bipolar disorder, depression, and substance use disorders is often shortened due to the associated severe physical problems, and also deaths due to accidents and suicide (13).

All the above factors add to the global burden of disease due to mental disorders, affecting the patient, the family, the society and the nation.

### **Challenges :**

Global burden of disease due to mental disorders is a major challenge to the mental health professionals and the health planners (2, 14). High prevalence of mental disorders, chronicity, inadequate mental health resources, a large untreated population and barriers to seeking treatment contribute to the burden.

### **Extent of problem :**

As per the WHO, one in four persons is likely to develop a mental disorder during life time. Point prevalence of mental disorders is about 10%. India with current population of about 1.28 billion has huge numbers of persons with mental disorders (15). A number of epidemiological studies of mental disorders have been undertaken in India. Reddy & Chandrashekar's (16) in a meta-analysis of various Indian epidemiological studies estimated the prevalence of mental disorders at 70 per 1000. Thus by a rough estimate, India has 90.3 million persons with mental illness, out of which about 9 million suffer from severe psychiatric disorders like schizophrenia and other severe mental psychotic disorders. This is a huge number.

### **Resources in LAMI Countries:**

Most of the low and middle income countries (LAMIC) have a gross deficiency of mental health care workers. Total number of mental health care workers in 58 countries from the LAMIC group were estimated at 362,000 in 2005, representing 22.3 workers per 100,000 in low income countries and 26.7 per 100,000 in the middle income countries, comprising 6% psychiatrists, 54% nurses and 41% psychosocial care providers. The figure adds up to a shortage of 1.18 million mental health workers in the 144 LAMIC countries (17). As per the WHO Mental Health Atlas of 2005, mental health resources in India consist of 0.25

psychiatric beds per 10,000 population, 0.2 psychiatrists, 0.03 clinical psychologists, 0.05 psychiatric nurses, 0.03 social workers per 100,000 of the population (18). Currently, by a rough estimate, India may be having currently about 5000 psychiatrists (about 0.4 psychiatrists per 100,000 of population). Relocation to the other countries like the USA, the UK, Australia and others has been an ongoing problem. There is a gross disparity between resources and needs. Figures for psychologists, psychiatric social workers and psychiatric nurses working in mental health care are equally inadequate.

Average national deficit of psychiatrists in India has been estimated at 77%. More than 1/3 population has >90% deficit of psychiatrists. Only the states /union territories of Chandigarh, Delhi, Goa and Puducherry have a surfeit of psychiatrists. Kerala and Maharashtra have less than 50% deficit, while all the other states have more than 50% deficit of psychiatrists (19).

There are 133 medical colleges and postgraduate institutes in India, which admit 327 MD degree students in psychiatry each year, besides which, 56 medical colleges, have training facilities for 125 DPM students. In addition, 50 to 60 postgraduates appear every year for examinations leading to the award of DNB in psychiatry by the National Board of Examinations (20). There has also been an increase in the training facilities in psychiatry, clinical psychology, psychiatric social work and psychiatric

nursing in the newly established centres of excellence under the National Mental Health Programme (NMHP) of India. But still the required numbers are difficult to achieve in near future (21).

### **Barriers to seeking treatment and care:**

Scarcity of available resources, inequities in their distribution and inefficiencies in their use have been identified as the three main obstacles to better mental health especially in LAMI countries (22). Stigma associated with mental disorders and poor community awareness about mental disorders are some other important barriers to seeking treatment and care for mental disorders. Due to inadequate mental health resources, a large section of the population suffering from mental disorders is unable to seek treatment for their problem.

Stigma associated with mental disorders further prevents patients with mental disorders from seeking treatment. Due to the fear of stigma, patients and their families don't access the treatment facilities because of the fear of being labelled as mentally ill. Lack of awareness about the mental health problems being an illness needing treatment, and about the treatment facilities often delays the treatment, further adding to the disability due to mental illnesses (23).

Mental health has always been at low priority in policy making and budget allocation despite a large uncovered population and inadequate manpower. Health budget has been one of the lowest



in India as compared to the developed as well as underdeveloped countries, and funding for mental health is abysmally low.

### **Strategies at Meeting the Challenges :**

Key Strategies for meeting the challenges could include transforming health systems and policy responses, building human resource capacity, improving treatment and expanding access to care, prevention and implementation of the early interventions, and identifying the root causes, risks and protective factors (14).

### **Transforming health systems and policy responses :**

Health systems need to be transformed in the direction of strengthening the mental health component by establishing and implementing minimum health-care standards for mental disorders around the world, and redesigned to integrate the care of mental disorders with the care of other chronic diseases. Investments in treatment, training, research and prevention in the mental health needs to be augmented (14).

A number of changes have taken place in the last 3-4 decades in the health system in India, many of which have been a part of the NMHP of India, which was launched in 1982 (24). Recently, India has declared its Mental Health Policy in October 2014 (25).

NMHP has the objectives of ensuring availability and accessibility of minimum mental healthcare for all in the foreseeable future, particularly to the most vulnerable and underprivileged sections of the population; encouraging the application of mental health knowledge in general healthcare and in social development; and promoting community participation in the mental health service development and to stimulate efforts towards self-help in the community (24). Since in the initial years there was a slow development, districts were taken up as the units to implement the programme under the District Mental Health Programme (DMHP).

The focus in DMHP has been on early detection and treatment, training of manpower and raising public awareness about the mental disorders. Mental health services have been developed at the district level and also at peripheries to make them easily accessible to the community. Training component has included imparting short term training to the medical officers in diagnosis and treatment of common mental illnesses with limited number of drugs, and training of the health workers in identifying persons with illness and raising community awareness. Public awareness programmes are undertaken periodically in form of information, education and communication (IEC) activities. The programme had covered 123 districts across the country till 2012, and is expected to cover most of the districts by the end of the current five year plan (21, 26).

India did not have a mental health policy till recently. The Government of India launched its Mental Health Policy on 10th October 2014. It aims at providing universal access to mental health care, increasing access to and utilisation of comprehensive mental health services, and reducing prevalence and impact of risk factors associated with mental health problems. The policy has a vision to promote mental health, prevent mental illness, enable recovery from mental illness, promote destigmatisation and desegregation, and ensure socioeconomic inclusion of persons with mental illness by providing accessible, affordable and quality health and social care to all persons through their life span, within a right based framework. There is emphasis on the principles of equity, justice, integrated care, evidence based care and quality, following a participatory and rights based approach in all training and teaching programmes. It also discusses the issues of inter sectoral collaboration, funding and research (25).

To cover the deficiency in the mental health resources, the WHO in 2008 launched the mental health Gap Action Programme (mhGAP) to address the lack of care for people suffering from mental, neurological, and substance use disorders, especially for the low- and middle-income countries (27). mhGAP asserts that with proper care, psychosocial assistance and medication, tens of millions could be treated for depression, schizophrenia, and epilepsy, prevented from suicide, and can begin to lead normal lives, even where the resources are scarce. mhGAP has

prepared intervention guides for prevention and management for each of these priority conditions, which can be used in primary care settings.

There have been some more developments in the mental health sector in India in the area of welfare from the policy perspective. Mental illness was included in the list of illnesses eligible for disability benefits in the Rights of Persons with Disabilities Act, 1995. The intent was good, but it had a limited reach due to various procedural and legal limitations (28). The Rights of Persons with Disabilities Bill, 2012 has broadened the definition of mental illness for purpose of various disability benefits. Disability pension for various disabled persons with more than 40% disability has been introduced in some states of India. These are the beginnings, and the steps may bring some relief to the caregivers at reducing burden. In India, there is no insurance for persons with mental illness, though it exists in most of the developed world. Various insurance companies offering health insurance have put mental illness under 'general exclusions' (suicide, self-inflicted injury or illness, mental disorder, anxiety, stress or depression, use of alcohol or drugs are the categories excluded). An initiative has been taken in the proposed Mental Health Care Bill (MHCB), 2013 to rectify this deficiency. The MHCB has included a section which states that the Insurance Regulatory Development Authority established under the Insurance Regulatory Development Authority Act, 1999 shall endeavour to ensure that all insurers make provisions



for medical insurance for treatment of mental illness on the same basis as is available for treatment of physical illness (29).

### **Build human resource capacity :**

Building human resource capacity is integral to meet the challenge of the global burden of disease including the mental disorders. Strategies could include creating regional centres for mental-health research, education, training and practice that incorporate the views and needs of local people, and develop sustainable models to train and increase the number of culturally and ethnically diverse lay and specialist providers to deliver evidence-based services. There is also a need to strengthen the mental health component in the training of all health care personnel (11).

Mental health resources are generally scarce across most of the low and middle income (LAMI) countries. Government spending on mental health in LAMI countries is far lower than required. Most care is institution based. There is an inequitable distribution between countries, between regions, and within communities. Populations with high rates of socioeconomic deprivation have the highest need for mental health care, but the lowest access to it (17).

India has taken a number of initiatives under the NMHP as well as independently. There has also been a focus on creating more manpower by developing new facilities and expanding

the existing ones. Upgrading of the mental health services and training facilities in the state run medical colleges and general hospitals, and modernisation of the state mental hospitals has been done under the NMHP. To expand the training facilities in the field of mental health, centres of excellence in mental health have been opened in collaboration with the existing services, which have also started postgraduate training programmes in psychiatry, clinical psychology, psychiatric social work and psychiatric nursing all across the country. All these steps are likely to ease the burden associated with mental disorders by early detection and treatment of the mental health morbidity in the community (21, 26). Number of postgraduate training centres in psychiatry and allied disciplines in the country has shown a tremendous growth from about 10 in early 1970s to about 200 (20). However, relocation of the trained manpower to the western countries remains an ongoing problem. It is known fact that the number of psychiatrists of Indian origin in the Western countries is much more than those available in India.

Expansion of the mental health training facilities for the mental health professionals may not generate manpower sufficient to meet the demand. Thus the alternatives to the specialised care are to be explored, where the primary care physician remains an important resource, since most of the patients with mental health problems especially those with CMDs are seen in the primary care. Early research in community psychiatry in India had shown that most cases of common

mental illnesses can be effectively managed in the primary care settings (30, 31). Therefore the focus under DMHP has also been on strengthening mental health services in the primary care as discussed earlier. Task shifting has been an important strategy at creating alternate sources to provide mental health care, when there is a deficiency of the trained manpower (17).

Since most patients with mental health problems are seen in the primary care settings, NMHP has also undertaken periodic short term training programmes for the primary care doctors and para medical workers. Sensitising the primary care doctors in providing treatment for common mental problems occurring in primary care has been the objective of such programme (21, 32, 33). Different kinds of training modules varying from one day sensitisation to 2 weeks long programmes have been used (32).

### **Improve treatment and expand access to care :**

Screening for mental disorders and basic mental health care can be integrated into routine primary health care. Cost effective treatment and medications need to be ensured in primary care settings as well as in secondary and tertiary care. Treatments which can be conveniently used by the non-specialists, including lay health workers with minimal training, need to be developed and introduced. Assessment of the functional impairment and disability due to the mental disorders should also be

included at appropriate settings. There is also a need to provide effective and affordable community-based care and rehabilitation (34). Children with mental health problems also need to be attended to. The modern developments in the mobile and IT technologies (such as telemedicine) can be used to increase access to evidence-based care (11).

A delay in seeking treatment is an important contributor to the burden. Even in developed countries, treatment is often delayed by many years after the onset of illness (35). Establishing the community based mental health care facilities will reduce the distances travelled by the patients with mental illness and their caregivers to seek treatment. Making the mental health services easily accessible, available and affordable is essential to meet the challenge of the global burden of the mental disorders, and has also been one of the objectives of the NMHP of India. Attempts have been made under the DMHP to provide services at the district level by a psychiatrist and at peripheral hospitals by providing satellite services as well as by training the primary care doctors in short term sensitisation programmes in psychiatry (26, 35). Till recently only 123 districts had been covered under the DMHP. It is proposed to cover all the districts in the 12th Five Year Plan, which is good in intent but appears overambitious considering the available resources.

In the recent past, a number of new initiatives have taken place in our country both in voluntary sector as well as the

government sector. Efforts from the voluntary sector as well as from the mental health professionals have been successful in bringing law towards welfare of the mentally ill and their caregivers (36). A number of non-governmental organisations (NGOs) have been working in area of providing community support to the persons with mental illness and their caregivers. Some of these include Ashadeep (Assam), AMEND (Bangalore), Aasha (Chennai), SAA (Pune), NAMI India (Mumbai), Turning Point (Kolkata) and SCARF (Chennai) (37).

### **Prevention and implementation of the early interventions :**

An effective prevention programme in psychiatry needs to act at multiple levels like acting on risk and protective factors, developing strategies to reduce risk and improve quality of life, reducing stressors and enhancing resilience, and targeting directly the psychiatric disorders (38).

Both mental health promotion and early intervention are important components of a prevention programme in psychiatry. Healthy life style, regular physical exercise and staying away from drugs and alcohol are some of the important preventive interventions in the field of mental health (39). Steps need to be taken to reduce the duration of untreated illness by developing culturally-sensitive early interventions across settings. Interventions also need to be developed to reduce the long-term

negative impact of low socioeconomic status on cognitive ability and mental health. Evidence based primary prevention interventions need to be developed for a range of mental and substance use disorders. Active measures need to be taken to act on risk factors like childhood abuse, alcohol and substance abuse, Child protection needs to be taken on priority. A number of steps have been taken in this direction in our country in the recent past (40).

In general, psychological distress is not considered as something requiring medical care or intervention. The modern medical care is considered as having only a limited expertise in the area. The mental health services have also only a limited availability in the public health services. Community awareness programmes need to focus on that mental disorders are like any other medical illness, and can be effectively treated and the patient can live a nearly normal life in the community. Media can play an important role in spreading the messages. An initiative has been taken by the NMHP in this direction by broadcasting and telecasting such messages on the audio-visual media. Similarly a number of such initiatives have taken place in the print media in the last 2-3 decades (21, 40, 41).

India has a tradition of giving importance to mental health, evidence of which can be found in Hindu philosophy. Yoga, meditation and spiritual ways of understanding adverse life situations have always been popular in the Indian culture since time immemorial. But there is also a

need to disseminate new knowledge on these practices and strengthen those that are helpful in order to benefit the persons in need (21, 41).

Mentally ill persons are also discriminated in the society. Finding a house on rent for a family with a mentally ill person often is major ordeal for the family. Often they may be forced to change the house frequently. It is not only with psychotic disorders. Even illnesses like obsessive compulsive disorder may become highly stigmatizing. In India, it is not uncommon for families to give a fictitious name while registering in the hospital, so that the case records may not be traced in future by the prospective spouse or his/her family or a prospective employer. The improved mentally ill person faces great difficulty in finding a suitable job in South East Asia, as part time jobs are often not available, and more so, no employer wants to employ a person with a mental illness (40). Raising community awareness about treatability of mental disorders and correcting misconceptions can go a long way in reducing stigma and increase support for persons with mental illness (23). The steps will also help integration of persons with mental illnesses in the society, and in turn reduce the stresses faced by the caregivers (41).

Long stay facilities are required for persons with mental illness, who don't have any family members to look after or the family members are not in a position to take care of them due to ill health or old age (42). There have been some initiatives

in this area from the voluntary sector, but no such facilities exist in the Government sector (37).

### **Identifying the root causes, risks and protective factors :**

There is a need to identify modifiable social and biological risk factors across the life course so as to prevent development of mental disorders, especially in the face of major stressors. Impact of poverty, violence, war, migration and disaster on mental disorders can be studied to identify the risk and protective factors. Research is also required to identify the biomarkers for mental disorders. Relationship between early developmental factors and mental disorders needs to be investigated. Studies need to be done to identify phenotypes and endophenotypes of mental disorders. Role of gene–environment interactions associated with the increased risk for mental disorders needs to be investigated (11).

### **Changing realities :**

In India, most people suffering from psychiatric disorders do not receive any financial benefits from the state on account of their illness or unemployment. Those living in nuclear families are facing a new problem, because in the past families used to be bigger, and joint families provided human as well as material resources for the care of people with mental illness. In a nuclear household, it becomes an onerous duty for the already extremely busy family

members to look after the person with mental illness (7, 40).

The gradual breakdown of the joint families with urbanization and smaller nuclear families with both spouses working has introduced the new problem of increasing load on the family caregivers. Once a family member gets a chronic mental illness, there is a huge drain on the family resources. The caregiver may have to make considerable compromises on his or her job so as to extend constant care to the sick family member, and sometimes may even to have leave the job, further increasing the financial problems (10, 11, 41).

Sometimes, the family breaks down due to death or divorce and the role of caregiving may be taken by some other relative, such as parents or siblings. This creates a new crisis, which needs to be handled by the mental health professional. In many cases, the mental illness may itself be in the background of the marital breakdown. Sometimes, a female patient is deserted by her husband, and the mother extends all sorts of support to her ill daughter as well as to her grandchildren. Caregivers of women with schizophrenia and broken marriages are at a double disadvantage (43).

In this background, more and more families are looking up to the professionals for help. This further emphasizes the need for family based intervention programmes. Family caregivers who are in contact with treatment teams for a long time learn to

develop healthy coping methods to deal with the burden of caring for relatives with severe mental illness by both experience and prolonged therapeutic contact with the treating doctors (11).

### **Use of Modern IT Technologies :**

Using the recent developments in the field of information technology, it should be possible to create online peer support groups and introduce online family interventions like online psychoeducation programmes in mental health. India has got high mobile penetration, and offers an excellent opportunity to introduce mobile apps for psychoeducation and introducing mental health promotion skills. Mobile apps can also be used for reminders for taking medications, appointment and for taking up activities as a part of therapeutic interventions. However, one also needs to be careful because the excessive use of mobile applications also carries the risk of increasing social isolation, exposing the participants to misinterpreting advice or reducing engagement with the health care providers.

Recently, for the first time in India, a mobile telepsychiatry unit commissioned by Schizophrenia Research Foundation (SCARF) and supported by the TATA Educational Trust has been initiated in 2011. The programme includes a bus with tele conferencing facilities, a computer for data storage and a large television fixed at its rear. This television is used for awareness programmes in the villages.

The bus moves from village to village accessing persons with mental illness. After the psychiatric consultation through linking with Chennai SCARF office, the medicines are given from the pharmacy located within the bus (44). There have also been developments in telepsychiatry based services at other places like the All-India Institute of Medical Sciences, New Delhi and the Postgraduate Institute of Medical Education and Research, Chandigarh. Feasibility studies have taken place of providing telepsychiatry services to distant places (45).

### Conclusion :

Global Burden of mental disorders is a great challenge. Possible solutions include spreading community awareness, budget enhancement for mental health, early identification and treatment, improving treatment adherence, supporting the caregivers, manpower enhancement and integrating mental health component in primary care, and ensuring easy availability of psychotropics in primary care, and use of modern technology in mental health care.

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