

A Policy Analysis of Child and Adolescent Mental Health in India: Gaps and Prospects

**A Capstone project submitted to
Johns Hopkins Bloomberg School of Public Health & IIHMR University
in partial fulfillment of the requirements for
the award of the degree of
Master of Public Health**

by

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October 2017.

Acknowledgement

My deepest gratitude to my capstone guide and faculty adviser, Dr. Neetu Purohit, for encouraging my ideas and guiding me throughout the course as a supportive mentor.

I am grateful to Dr. S D Gupta for giving inspirations of lifetime to achieve the unachievable in the world of public health.

My special gratitude to all the faculty members of IIHMR and JHSPH, for making a great difference in my life through their valued knowledge, experience and blessings. I am also grateful to Mr. Gowthamghosh B., coordinator of the MPH program, for his cordial support in this journey.

I would like to recall the contributions of my first professional supervisor Dr. Pulak Debnath who encouraged me to leave my homeland for seeking the greatest wealth of the world, knowledge. I am also grateful to my family, friends, teachers and my students in Bangladesh who supported all my endeavors with faith and love.

Last but not the least, I am thankful to my peers without whom the book of my MPH life would remain left with blank pages.

Thanks to all of you for being with me in the most memorable journey of my life!

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Executive Summary

A large child and adolescent population of more than 435 million is present in India, which is heading towards an enormous demographic dividend by 2030. It is critical to ensure the highest attainable status of health for this young population- both physically and mentally. Although previous efforts at policy level were aimed to reduce infant and childhood mortalities, very poor attention have been given to the mental wellbeing of child and adolescent population in India.

The overall prevalence of mental disorders among child and adolescent ranges from 12.1 to 29.4% in different states of India. It is estimated that, more than 50 million child and adolescent in India require mental health services at any given point of time.

The cost for mental disorders can range from 3% to 4% of Gross National Product and it can incur high out of pocket expenditure which can be as high as 71.4% for the developing countries like India. Moreover, the indirect cost of treating mental disorders is often greater than the direct cost comprising lost days due to disabilities, loss of productivity during adulthood and overall impact on the national economy. To mitigate these impacts and protect the mental health of child and adolescent, the existing measures are far from what is required. The gap in treatment ranges from 22% to 97.2% for different mental disorders. However, the mental health services for child and adolescent have been growing slowly in tertiary institutions and most of them lack adequate resources and coverage of services. In addition, the National and District Mental Health Programs doesn't have specific provision of care for the child and adolescent population. Although India has several national policies and legislations related to child rights and development, very few of them emphasized on mental health problems. Furthermore, the National Mental Health Policy 2014 didn't address the mental health issues among child and adolescent population.

There are several barriers for developing child and adolescent mental health policy including social stigma about mental health, lack of required resources, unavailability and inaccessibility

of health facilities, absence of mental health as a policy thrust and lack of public health advocacy in this regard. These barriers must be addressed during developing a mental health policy for child and adolescent in India. Further, the policy makers must adopt a broader vision and values that are needed to be shared with other stakeholders for successful designing and implementing the policy. The principles for the policy development should consist- establishment of a specific mental care system for young population, integration of services in the primary healthcare, ensuring availability and accessibility of services in all geographic areas and social classes, reducing risk factors and promoting protecting factors for mental disorders, creating positive environment for the child and adolescent and involve them in decision making for improving the mental health services at community and national level.

Also, several policy areas for action should be considered in the policy development process which include financing for child and adolescent mental health, legislations for protecting rights of young population, policy advocacy, mental health information systems, research on child and adolescent mental disorders, quality improvement of the policy and services, organization of the services, developing adequate resources, and intersectoral collaboration. A national child and adolescent mental health policy for child and adolescent can facilitate the health system to understand the attributes of mental health problems among the child and adolescent as well as in the society with a stewardship approach. It will also create enabling environment for positive mental health and set a national vision to ensure the prevention of mental disorders and promotion of mental wellbeing among the child and adolescent population of India.

Introduction

India is one of the most populous countries in the world with a population of 1.236 billion(1). Amongst this huge population, there are more than 435 million children and adolescent who are aged 0 to 19 years(1). The nation is expected to have 250 million working population by 2030 which can be termed as an enormous demographic dividend(2). Such a working young population can be an asset for the country having high contribution to the nation's growth and development. To achieve such an advancement, the health of children and adolescent should be a priority in policy arena for optimal health as well as socioeconomic outcomes across the nation. Although the focus on infant and under five mortalities, immunization and nutrition have contributed to the overall improvement of physical health, with a very little emphasis given to child and adolescent mental health (CAMH) in India(3). The suboptimal care for CAMH has resulted in high burden of mental disorders among child and adolescent in India. At any given point of time, nearly 50 million children suffer from mental disorders and this number will increase if the adolescent population is considered as well(4).

According to World Health Organization, neuropsychiatric disorders among Indians are estimated to contribute to about 11.6% of the global burden of disease(5). Furthermore, the cost of treatment, lost days due to disabilities, lost productivity and overall impact on the national economy cannot be ignored anymore(6). Therefore, it is required to explore the true scenario of the untold sufferings affecting this large proportion of the population and address them for the early prevention of the disorders as well as improving millions of lives.

The thinking ability and having a feeling about themselves among children and adolescent is being recognized by the adults in the modern age, which was largely underestimated earlier. However, it was perceived well that the situations like genetic disorders, trauma, exposure to pathogens or toxins etc. can affect the physical health of the children(7). Similar and sometimes

more diversified conditions can make deep impacts on the brain and mind of the young person. It is also evident that, mental disorders at early ages can lead to continued disturbances in adult life and affect the lives of the individuals as well as their families(8). It is challenging to identify these disorders at early ages and often health professionals gather the characteristics and classify them according to the case definitions provided in different systems like International Classifications of Diseases 10th version (ICD-10) or Diagnostic and Statistical Manual, 5th edition (DSM-V)(9). The prevalence of different mental disorders can be found in literature but it is also necessary to recall that, only 10 to 22% of the cases had been identified by the primary health workers, leading to the underestimation of the true picture of the CAMH disorders in a broader context(9). Moreover, the sub-clinical cases are also progressing towards severe form of diseases, which could be prevented if earlier identification and intervention could be initiated. Furthermore, a large proportion of young population live in rural areas of India. These rural children and adolescent don't have availability and accessibility of mental health services, resulting in a gap between the problems and the services offered to them. In addition, difficult circumstances like physical trauma, living in poverty, emotional or sexual abuse, domestic violence, homelessness, substance abuse and many more are not uncommon in the developing countries like India. These factors can increase the risk of mental disorders among children and adolescent to a greater extend. To improve the CAMH in a massive young population in India, different stakeholders have to understand the severity of the disorders, burden of the diseases, psychosocial determinants of mental health and potential strategies to improve the situation. Unfortunately, the policies and programs centered on CAMH were never been designed and practiced widely in India and the field of CAMH has been neglected by the communities, professionals and policy makers. Till now, India has no specific or comprehensive CAMH policy for the huge population of 435 million child and adolescent. This analytical study aims to assess the present condition of CAMH in India, review the existing policies and services in

this area, identify the gap and barriers for improved CAMH and analyze the policy options for improvement of the mental health of the youngest population segment of the nation.

Objectives

1. To review the current mental health status among child and adolescent in India.
2. To review the existing health policies and programs in India for child and adolescent mental health.
3. To identify the barriers and gaps in treating as well as preventing mental illness among child and adolescent population.
4. To analyze the policy recommendations for child and adolescent mental health in India.

Methodology

Existing literature on child and adolescent mental health were searched at PubMed, PsycINFO, Embase, BioMed Central, Google Scholar and other search engines and relevant papers were shortlisted and reviewed. Moreover, published reports and policy documents from the Government of India, academic institutions and development agencies were searched online and reviewed. Relevant news and commentaries on child and adolescent mental health in national and global context were reviewed for analyzing the perspectives and recommendations on the same.

Analysis Plan

The Child and Adolescent Mental Health Policies and Plans framework provided in the Mental Health Policy and Service Guidance Package by World Health Organization is used as the analytical matrix for this policy analysis(10). In addition, framework for policy development provided by Center for Disease Control and Prevention was also considered to analyze the policy recommendations(11).

Current Scenario of Child and Adolescent Mental Health in India: A Situational Analysis

The field of child and adolescent mental health in India hasn't been investigated deeply, which resulted in scattered picture of the existing situation in the world of scientific literature. In the published studies till date, there have been wide variations in epidemiological studies due to unstandardized assessment techniques and sampling methods that were non-representative in nature. A comprehensive review of available literature revealed different prevalence rates in different age groups across the country. A study conducted in Lucknow and Bangalore used two stage methodology comprising screening and diagnostic confirmations for mental disorders(9). Diagnostic criteria were determined as per the ICD-10 in different age groups. In Lucknow, the prevalence of child and adolescent mental disorders was 12.1% while disease specific prevalence was 4.16% for nocturnal enuresis, 2.38% for pica, 1.78% for conduct disorders and 1.26% for developmental disorders(9). The similar study conducted in Bangalore revealed an overall prevalence of 12.5% while the rate was 12.4% in rural areas, 10.8% in slums and highest 13.9% in urban areas of Bangalore(9). Moreover, the disorders were highest among children aged up to 3 years with a prevalence of

13.7%. Another study in Chandigarh estimated the overall prevalence as 9.34%, while the prevalence of reported cases by the teachers was 11.23%(9). There are several studies conducted at community level that reported the prevalence of child and adolescent mental disorders varied from 1.06% to 5.84% in rural areas, 0.8% to 29.4% in urban areas, and 12.5% to 16.5% in studies that were conducted in both rural and urban population(12). The studies were conducted in different states, in different timelines and used different diagnostic instruments, which is illustrated briefly in Appendix 1.

In many other investigations, the childhood mental disorders are studied in the school level. The prevalences were different in rural and urban areas. It also varied from time to time in different studies. Investigations conducted in rural schools of Haryana (Jilora, 1981) and West Bengal (Banerjee, 1997) have shown prevalence of CAMH disorders as 20.7% and 33.33% respectively(12). In contrast, the prevalence found in the urban school children in Tamil Nadu (Devsigamani, 1990) and Chandigarh (Malhotra, 2002) was 33.7% and 6.33% respectively(12). In two studies conducted in Punjab at 2001 and 2011 revealed the prevalence of CAMH disorders was 45.6% and 20.2% respectively(12).

Apart from such studies, National Mental Health Survey 2016 reported the prevalence of mental disorders is 7.3% among children aged 13 to 17 years and it is similar in both genders(13). The prevalence among urban children is nearly double (13.5%, 10.4-16.5, 95% CI) compared to the rural children (6.9%, 4.9-9.7, 95% CI). Major illnesses include depressive disorders (2.6%), disabilities affecting intellectual status (1.7%), agoraphobia (2.3%), autism (1.6%), psychotic disorders (1.3%) and phobic anxiety disorders (1.3%)(13). Moreover, the survey estimated the prevalence of depression as 6.9%, anxiety as 15.5%, tobacco as 7.6% and alcohol consumption as 7.2% in a particular study based on Himachal State. Furthermore, most frequent CAMH disorders were estimated in a sample size of 1191. It revealed that, 3.6% children were suffering

from phobic anxiety disorder, 2.3% had agoraphobia. 1.7% had intellectual disabilities and 1.6% were affected by autism spectrum disorder (13). The survey concluded that, the real estimation of nationwide child and adolescent mental health was beyond the scope of the survey. Such an enormous public health issue had to be investigated thoroughly to understand the picture of mental health in this age group. It is estimated that, about 9.8 million of Indian aged 13 to 17 years are suffering from serious mental illness, and the number is expected to be bigger in the entire age spectrum of children and adolescent is considered(13). Other studies have reported disease-specific data in different states of India. For instance, a study among 2160 children aged between 6 to 12 years shown the prevalence of hyperactivity disorders is 4.67% and 65.62% of those had at least one of the sleep disorders(13). In another study, the prevalence of conduct disorder was demonstrated as 4.58% which was more common among boys compared to the girls of same age group(13). In other studies, the prevalence of the same disease was found to be 11.13%(13). The prevalence of antisocial behavior ranged between 0.2% to 7.1% in different studies conducted in different population. Neurotic disorders are considered as common psychiatric problems found among children. Among the patients with neurotic disorders most were suffering from hysteria (40-70%). Moreover, mental diseases often manifested with other co-morbid conditions(13). For instance, 68% patients with nephrotic syndrome suffers from behavioral disorders(13). Furthermore, the attention deficit hyperactivity disorder is found to be co-morbid among those who suffers from conduct disorders. In addition, a study by Bansal et al. revealed the prevalence of substance abuse was as high as 45% among the child laborers from six slums in Surat, India(13). It is estimated that, India as nearly 15 to 45 million child laborers and epidemiological investigation about their mental health must be carried out for future actions. Another study conducted on suicide related disorders found that the prevalence of suicidal thoughts was 15.5% while 5.1% attempted suicide at least once in lifetime(4). Another report published by WHO shown the prevalence of suicide is 21.1 Per 100000

population and nearly 258075 Indians committed suicide in 2012 among which a large proportion are students aged 0 to 19 years(14). Therefore, the impact of mental illness is far beyond the imagination of the society in which the awareness about the severity of these diseases are least. Such a high magnitude of mental disorders cannot be underestimated and requires effective and evidence-based interventions.

Economic Burden of Mental Health Disorders among child and adolescent

Several studies have been conducted to estimate the cost of various mental disorders in different countries. It is evident that, the economic burden of neuropsychiatric disorders outweighs other non-communicable diseases which is illustrated in Figure-1.

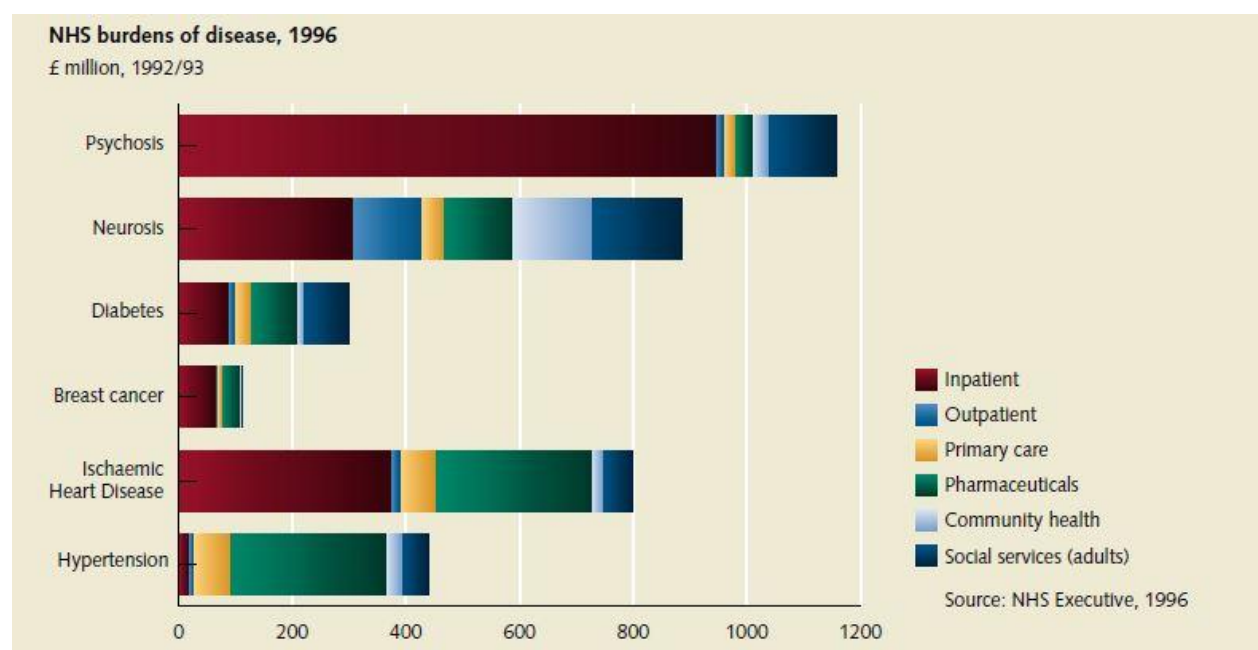


Figure-1: Economic burden of noncommunicable diseases in UK, 2003 adopted from WHO(8)

In the European countries, the cost of mental disorders was estimated between 3 to 4% of the GNP in 1990 among which nearly 2% was accounted for treating mentally ill people(8). In the same point of time, the aggregated cost for all mental disorders was USD 148 billion(8). The study also concluded that, the indirect cost for mental disorders was equal or more than the direct cost. In further studies it was found that, the cost increasing every year and by 1997 the cost for treating mental illness became USD 85.3 billion of which 11.9 billion was spent for substance abuse and 73.4 billion was spent for treating other mental disorders(8). Similar studies conducted in Canada at 1998 revealed the cost of treatment was 6.3 billion Canadian dollars and cost of lost productivity was 8.1 billion Canadian dollars(15). Another study conducted in UK demonstrated the cost of mental illness was 32 billion GBP in 1996/97 of which 45% was due to the lost productivity(16).

The cost of mental illness during childhood is huge both in short and long term. Treating mental illness increases the burden in early ages and consequences of these disorders in adulthood can increase the burden to a higher level which is shown on Figure-2.

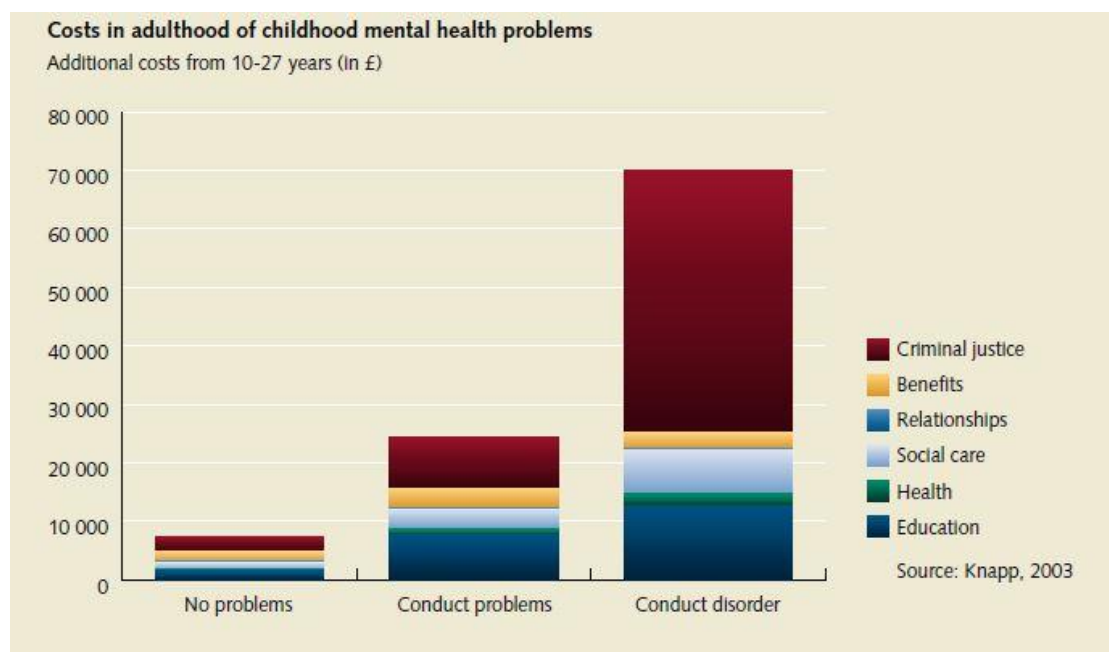


Figure-2: Cost in adulthood due CAMH disorders adopted from WHO(8)

In addition, the loss of education and subsequent employment contributes to the socioeconomic burden for the individual, families and the nation. A comparative study shows extremely high burden of conduct disorder in adulthood, of which the larger proportion incurred due to societal cost of mental illness.

The provision for budget specific to CAMH is rarely found in national budgets across the globe. In most of the countries, the financial expenses for CAMH are met by out of pocket (OOP) expenditures. This burden of OOP ranges from 12.5% to 71.4% in developed and developing countries respectively(6). Although the OOP is lower in developed countries, but a larger proportion of the entire CAMH financing is funded by temporary and vulnerable sources. According the WHO's Child Mental Health Atlas, there is no social insurance for CAMH in the low-income countries, whereas about 21% high and middle income countries are supported by such insurance schemes(6).

The economic costs of treating or non-treating CAMH disorders are being considered critically in the mental health policy and service guidance package published by WHO. It is perceived that the cost of treating CAMH disorders can be very high, but the non-treatment becomes extremely expensive in the long run and none of the nations can afford such luxury to underestimate the consequences.

The costs of mental illness are different in the affected children and their families. The child may be unable to attend school, join household and external activities and earn money. In addition, CAMH disorders can result in huge expense in the late adolescence and adulthood(17). Another study demonstrated that the cost of behavioral abnormalities were 10 times higher in adulthood for those who suffered from mental illness as a child (15). On the other hand, the families incur cost of treatment, miss the opportunities to earn livelihood as they have to spend more time with the affected children(6).

The efficiency and effectiveness of both psychiatric and psychological interventions for CAMH are studied in different context. It is evident that, timely interventions in major psychiatric diseases can reduce disability in a cost-effective and sustainable manner as illustrated in Figure 3.

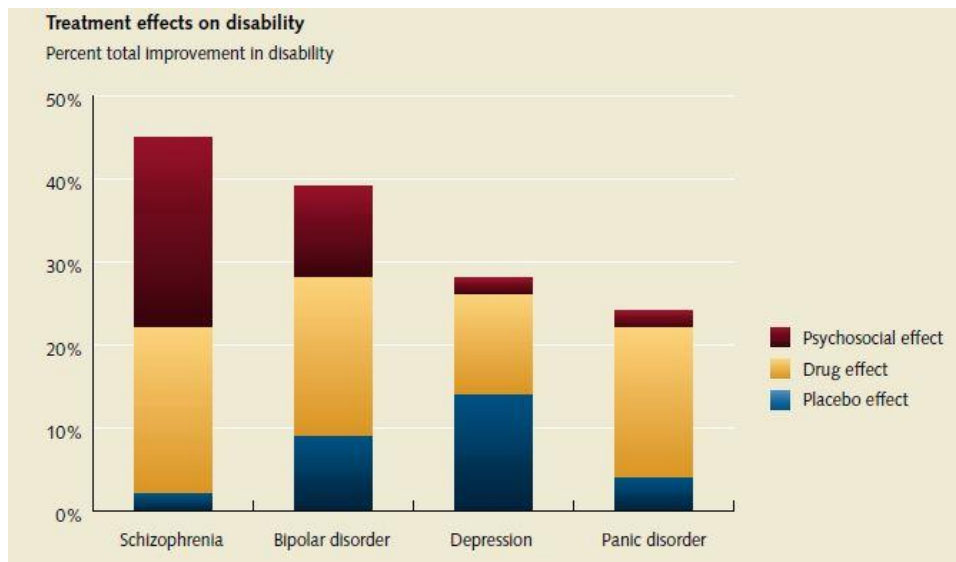


Figure-3: Effects of treatment in reducing disabilities among individuals with mental disorders adopted from WHO(8)

The improvement seen in a group following a treatment is more than 50% compared to the non-treated group(8). But, this isn't considered optimal for designing programs and policies as therapeutic interventions do not cure the diseases completely, leading to less adherence to the treatments and lesser focus in investing on CAMH. Apart from such interventions, community based outreach care comprising low cost drugs and basic psychological support can reduce the disease burden to a greater extent. A study in rural India demonstrated the gradual reduction of cost of treatment as well as dramatic improvement of schizophrenia over a follow-up period of 18 months(8). It is critical to explore the evidences and associated opportunities to design

CAMH policies for low and middle-income countries like India, so that the initiatives are cost-effective and sustainable to improve the mental health of child and adolescent.

Existing policies, programs and services for child and adolescent suffering from mental disorders: Gap analysis

The field of child and adolescent mental health involves professionals from different backgrounds to ensure the optimal development of children and adolescent, prevention of mental illness and promotion of positive mental health. Internationally, a concern for CAMH started to grow in 1935 when International Committee for child psychiatry was founded(18). It was further expanded and renamed as International Association for Child and Adolescent Psychiatry and Allied Professions (IACAPAP) in 1947(18). There was a trend of increasing research about the mental disorders, their magnitudes, attributable factors, sociocultural dimensions, economic impacts, so on and so forth. However, the research as well as awareness about these issues were slower in India. Establishment of first child guidance clinic in 1937 by Tata Institute of Social Sciences can be described as one of the earliest initiative to address the mental health problems of child and adolescents in India(19). Following that, Indian Council for Mental Hygiene was established in 1940s which started several programs in Mumbai and other cities of India(19). Till then, there was no emphasis on psychiatric education in the medical colleges. In 1950s, medical colleges of India started courses on psychiatry and awareness about mental health started to flourish in the medical community. During the same time, several child guidance clinics got started across the country. Within few years, the first school for differently abled children was established in Mumbai(19). Till 1980s, the number of child guidance clinics increased up to 120 and about 400 caregivers were engaged in these clinics(20). Moreover, there were 286 clinics across India with more than 2000 professionals and approximately 12000

children received mental health services from these institutions(20). Most of the services in this area are offered by private and non-profit organizations. The participation of government authorities was limited to teaching mental health in medical institutions and providing treatment to patients visiting the tertiary hospitals. Very few of these institutions had significant teaching and research provisions focused on child and adolescents. Only 20 centers were offering such specialized care. Such care is clearly suboptimal as 24% of the population was below 10 years and 23% were below 19 years, totaling about 47% of the nation's total population(20). It implies, more than 435 million child and adolescents are exposed to risk of mental health disorders of which nearly 10 to 15% are already suffering from such disorders(20). Therefore, it is evident that the services offered by these institutions was far below the need to maintain a healthy child and adolescent population in India. In 1991 to 1995, national authorities of medical sciences increasingly participated in the development of academic area of CAMH and CMEs as well as fellowships in child and adolescent psychiatry were held(20). Sometimes these initiatives were facilitated by international academic partners. Most of these developments were associated with NIMHANS, which has pioneered in providing academic as well as therapeutic contributions to general psychiatry as well as CAMH in India. Moreover, the contributions of other institutions like AIIMS New Delhi, CMC Vellore, CIP Ranchi etc. have also facilitated the academic growth of CAMH in India. Apart from these advancements in the academia, the growth of therapeutic and psychological services are also subjects to be considered. In the health system of India, CAMH related services are widely neglected in healthcare institutions over last 70 years since the independence. It is estimated that, less than one percent of the child and adolescent suffering from mental disorders receive treatment(4). Moreover, there are several critical disorders including learning, speech, visual, hearing and personality disorders that require multi-specialty care, which is not available even in the urban areas. Furthermore, very little attention has been given to the special population like orphans, street children, juvenile

homes, rescue homes and many other places where child and adolescents are exposed to the higher risk of mental illness(21).

It is evident from the national mental health survey 2016, there is wide gap of treatment of mental disorders in the total population, which is an indicator of disease burden, availability and accessibility of services and utilization of the same(13). Despite of the presence of evidence-based interventions to improve mental health services, this treatment gap persists in India resulting in the burden of disease which is largely affecting the national health. The treatment gap in overall population is about 50-60% for schizophrenia. 88% for depression, 97.2% for substance abuses, 22 to 95% for seizure disorders(13). The treatment gap for common mental disorders is 95% which is higher than the gap in severe disorders which is 76%(13). An illustration of treatment gaps in different diseases is given in Figure 4.

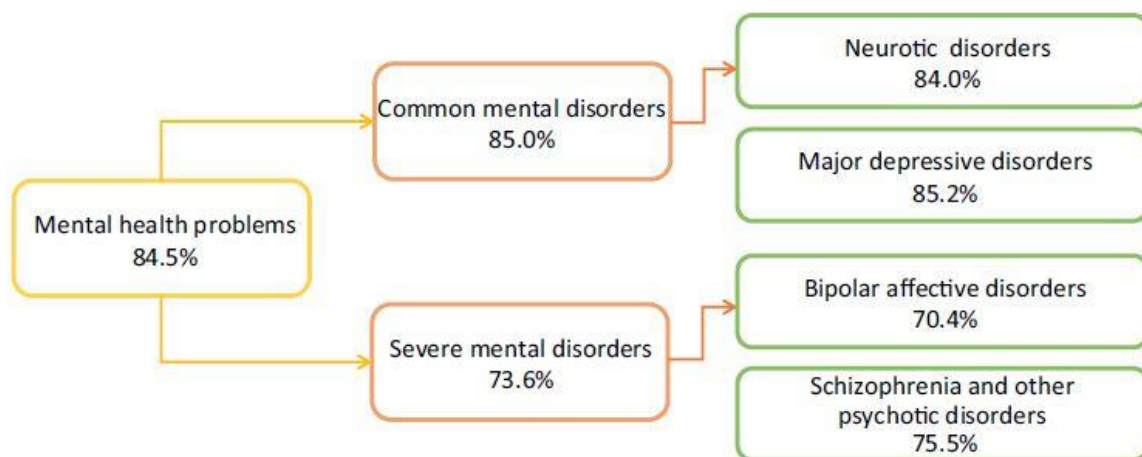


Figure-4: Treatment gaps in different mental disorders in India revealed in National Mental Health Survey 2016(13)

Another critical issue for mental health is the patterns of how the health services are being utilized by the population. Several factors like median duration of mental illness, delay in seeking care from time of onset, choice of providers, distance from health center and number of visits to the service provider further contribute to this issue. Previous studies have reported a

median duration of depressive disorders as 36 months which is about 72 months for diseases like bipolar disorder(13). A delay of 2.5 months was reported for depressive disorders which was about 12 months for conditions like epileptic disorders. Further, the median number of visits to the service providers was 2, ranging from 1 to 30. In 4 to 50% cases, the preferred provider was based on government institutions(13). The difference in these parameters are shown in Table 1.

	Alcohol use disorder (n=532)	Schizophrenia and other psychotic disorders(n=94)	Bipolar Affective Disorder (n=27)	Depressive disorder (n=465)	Neurosis (n=613)	Epilepsy (n=48)
Currently on treatment	73	23	8	69	98	33
Treatment gap (%)	86.3	75.5	70.4	85.2	84.0	31.3
Median duration of illness (in months)	36 (3-360)	66 (2-360)	66 (12-160)	36 (1-480)	36 (1-420)	98 (7-600)
Median Interval between onset of illness and consultation (in months)	4 (2-20)	4 (1-128)	11 (2-84)	2.5 (1-120)	8 (1-120)	12 (1-276)
Median number of treatment providers consulted	2 (1-4)	2 (1-5)	2 (1-6)	2 (1-11)	2 (1-30)	2 (1-15)
Most recent provider being a government doctor	50 (68.5%)	14 (60.9%)	4 (50%)	33 (47.8%)	36 (36.7%)	13 (39.4%)
Median duration of being on treatment (in months)	12 (3-60)	29 (2-360)	36 (6-84)	24 (1-180)	24 (1-420)	60 (2-100)

Table 1: Pattern of mental health service utilization in India reported in National Mental Health Survey 2016(13)

However, these data are collected from population in general. There was no significant evidence of the patterns in these factors in child and adolescent population, which is a limitation of this gap analysis. It can be determined that, as the self-reported cases are minimal in children and

adolescent due to stigma and other reasons(22), these gaps are likely to be wider among child and adolescent in India.

India has several national policies for different areas of child development that include National Policy for Children (1974), National Policy on Education (1986) and Labor (1987), Mental Health Act (1987), National Nutrition Policy (1993), National Trust for Welfare of Persons with Autism, Cerebral Palsy, Mental Retardation and Multiple Disability Act 1999, Charter for Children (2004), National Plan of Action for Children (2005) etc. but none of these adopted CAMH as a policy thrust(4). Moreover, National Health Policy (2002, 2016) didn't give much emphasis on CAMH. In addition, the first ever National Mental Health Policy (2014) mentioned very little about the mental illness among the young population and no specific policy direction to address the emerging mental health disaster was adopted in the policy(23). However, there are some programs like National Mental Health Program (NMHP) running mostly at cities and metros(24). Since its inception in 1982, NMHP has been providing basic psychiatric care to the general population, not particularly to the child and adolescent population. At first 10 years of NMHP, small scale activities were expanded in many districts. Following that, the mental health services continued to expand from 27 to 100 districts in next 15 years as District Mental Health Program (DMHP)(24). These programs were aimed to be integrated within general health care and cover a larger population who requires mental health care. These programs aren't designed specifically for CAMH and covering a large young population requires specific service provision and budget which couldn't be met with the scope of these programs. However, the school mental health program has provided cooperative mental health support to many schools and it had several strengths like cooperation from the teachers and parents, effectiveness due to increased participation and minimal social adversities like stigma and many more(25). There are many other programs that work on specific disease or geographic area and are funded by

private or non-profit organizations. However, all these initiatives collectively fail to satisfy the demand for CAMH care and raise four fundamental as well as ethical issues(26) including- a) the services aren't delivered to all those who need them most (principle of beneficence), b) attention to the decision of the affected child or adolescent isn't given adequately in designing or implementing the care system or treatment modalities (principle of autonomy), c) the services aren't distributed equitably in all geographic areas and among all socioeconomic classes (principle of justice) and d) such a narrow spectrum of CAMH services doesn't comply with the human rights entitled to every children and adolescent (principle of human rights). Any attempt to develop policies and programs for CAMH in India must consider these issues and the relevant gaps within the health system.

Barriers for improving Child and Adolescent Mental Health Policy in India

There are several barriers that affect the development of policies as well as the utilization of the services at the community level. Both ways, there is suboptimal status of CAMH in developing countries like India. It is critical to understand the nature of these barriers to eliminate them for the overall progress of CAMH.

Starting at the individual to community level, numerous barriers prevent the affected children or adolescent to pursue required care. Social stigma is one of the biggest barrier in this regard(27). The families and communities have a greater role in bringing the affected child to the needful treatment but in every level of the society, mental health is a stigmatized issue to be acknowledged. This phenomenon leads to under-reported cases as well as delayed reporting of mental disorders, which causes severe impairment of mental health status. Next, lack of required resources is another obstacle to achieve optimum mental health(7)(28). These resources include trained professionals, financial provisions for mental health and sufficient facilities providing

mental care to the children and adolescent population. The mental health in general suffers from lack of such resources even in developed countries. Therefore, it is not in a better situation in developing countries like India. WHO has identified such scarcity of resources as a significant challenge to develop further resources like trained manpower within the health system(7).

Further, the distance between the affected individual and health facilities offering mental health services is a barrier in India as the health facilities aren't same in rural and urban areas(7)(29)(30). Almost 68.84% population reside in rural areas and their health shouldn't be underestimated(31). Availability of health facilities and mental health practitioners in those facilities is critical to deliver mental health services in rural areas. Moreover, the communication gap between the providers and patients is an important barrier in delivering mental health services. Often the nature and severity of the mental illness isn't communicated adequately which results in less adherence to therapeutic measures. Furthermore, the awareness within the population about mental health disorders isn't sufficient for taking timely actions(16). In addition, the recognition of mental health status in child and adolescent is a recent concept and still it is neglected in many countries around the globe leaving India with no exception. The feelings of the children, changed pattern of their behavior, responses to stressful conditions and other psychological conditions are not perceived by the caregivers with much urgency leading to deterioration of the mental health status.

From the health systems perspective, the most important barrier to develop CAMH policies and programs is the absence of mental health from the mainstream health policy. Although India has a mental health policy but the provisions of mental health in child and adolescents are least discussed in the policy documentations(13). Moreover, only 0.06% of the total national health budget is allocated to mental health, which is even lower than the average mental health budget in the low-income countries. A comparison of mental health budgets in global context is given in Figure-5.

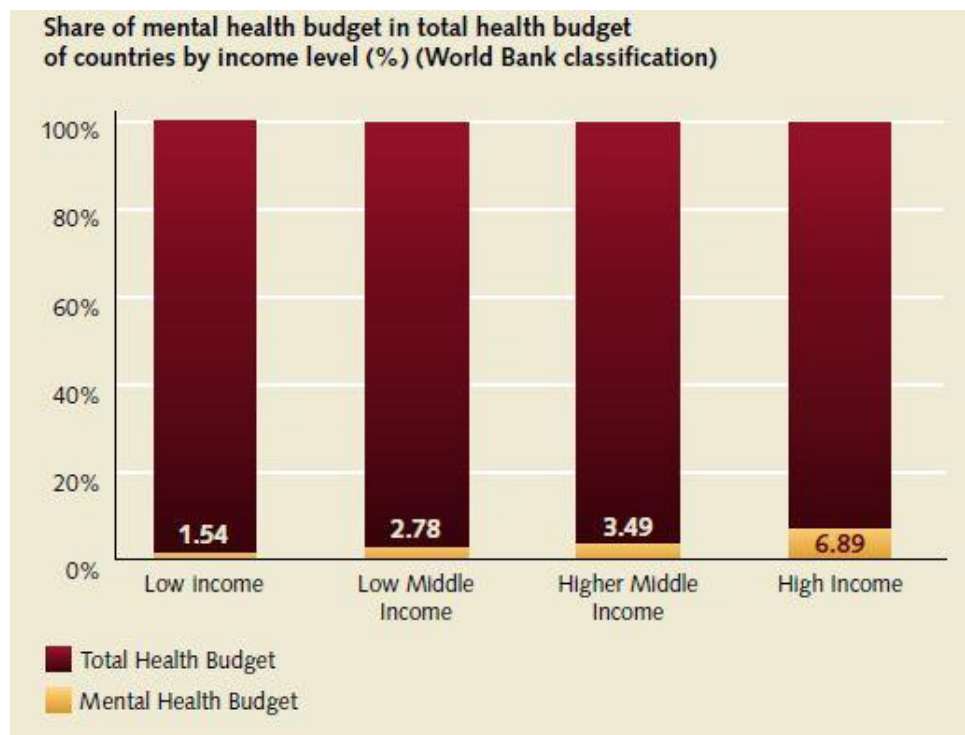


Figure-5: Proportion of mental health budget in the total health budget reported by WHO(8)

Further, a smaller portion of that tiny mental health budget is given to CAMH(5). The similar scenario is also evident in the activities of NGOs and development partners working in health sector. Although the severity of mental illness is perceived by such notable agencies, but their administrative as well as financial commitments to address the conditions aren't evident in practice. Therefore, lack of will at policy levels in both local and international stakeholders is affecting the overall development of CAMH in India.

The second significant barrier is the pattern of mental health services within the health system(32). In India, the existing mental health services are largely centralized and the links between community demands and central health services is very poor. This condition wasn't addressed in several health systems reforms over past 70 years. Moreover, funding and other supports to centralize services are required to be reallocated to the thrust areas like CAMH to improve the mental health outcomes. The distribution of mental health services in public and

private sector is not adequately managed and there is a substantial lack of partnerships among these stakeholders to combat the CAMH catastrophes in India(4).

The next barrier in systems perspective is the absence of mental health services in primary healthcare facilities(33). Following the Alma-Ata declaration, there was a massive reform of the health system to deliver the basic health services in the community level. Unfortunately, mental health wasn't a priority on that time and there has been very little improvement in extending the services within the primary healthcare. This issue has contributed in increasing burden of mental disorders in all age groups of the Indian population including the children and adolescent as well.

Last but not the least, the role of public health leadership in mental health is a barrier to improve the CAMH in India(34). Throughout last 70 years, the public health experts have been contributing to optimize the population health with the valuable researches and implementation plans in infectious diseases like malaria, TB etc. The focus is being shifted to non-communicable diseases due to the epidemiological transitions. But, there is a lack of sufficient efforts to identify and address the mental health issues of the general population, particularly the child and adolescent population from whom maximum benefits of the interventions can be yielded. The absence of the proactive role of public health community is a barrier to the sustainable development of mental health policies and programs focused to child and adolescent.

Policy Development for Improving Child and Adolescent Mental Health in India

As discussed earlier, India doesn't have a specific policy for CAMH till now. Therefore, this section will focus to describe the steps of policy development and illustrate a recommended outline of the CAMH policy for India.

First, the policy makers must adopt a vision that creates positive expectations about the mental health outcomes for the young population of the nation to overcome the barriers and reduce the gaps between required and available care for CAMH in India, (10). Such a vision can be developed and adopted with continuous exchange of ideas among the key stakeholders and this conversation can serve as the basis of the subsequent steps of policy analysis. There must be a common understanding among the stakeholders to create an enabling environment for the children and adolescent in which they can live mentally healthy and prosperous life and the psychosocial milestones of development is achieved for every young mind.

In the next level, it is important to identify the values that are held by the policy makers, service providers, planners and most critically the affected individuals and the families(10). The potential strategies and programs undertaken within the policy should consider the values carefully in the process of design and implementation. In a country like India, the cultural diversity and social connections are very important; therefore, such values can provide valuable directions for policy development. Moreover, the quality of the mental health services should be optimum and the health system should hold certain values to prevent the psychosocial stress, promote sustainable development of mental health and ensure the autonomy of the young individuals in the decision-making process(35). The values for policy development should be identified thoroughly from the perspectives of each player of the policy dynamics.

Further, the values must be translated to the principles of the policy. Following principles can be included in the CAMH for India:

- a) Development of specific mental health care for child and adolescent
- b) Integration of CAMH services in primary health care
- c) Ensure availability and accessibility of necessary services and resources in both urban and rural areas for equitable distribution of care

- d) Reduction of the risk factors and promotion of the protective factors for CAMH (Appendix-2)
- e) The environment within and outside the residence/school should be friendly for the optimum development of the child and adolescent
- f) Involve the child and adolescent individually and collectively in making the decisions regarding programs or plans for CAMH(10).

Once the principles are enumerated, the policy-makers must determine the potential areas for action. According to the suggested framework of WHO, the key areas for CAMH are- financing, legislations, policy advocacy, mental health information systems, research on CAMH, quality improvement, organization of the services, and developing resources for CAMH, and intersectoral collaboration(10). All those areas are briefly discussed in subsequent sections.

Financing for Child and Adolescent Mental Health

Adequate and sustained financing is the most important issue to design and implement a mental health policy. Often the entire health sector struggles to have a sufficient chunk in the national budget and mental health in general receives a smaller portion of that insufficient fund. In such a situation, fund for CAMH is often affected and the policies and programs for CAMH fails to be translated into reality. Till the inception of this analysis, there is no specific budgetary allocation for CAMH in India(24). Such scarcity of financing can pull money from one area to another, leading to inappropriate functioning of different organs of the health system. In addition, sustained financing is critical for CAMH for two major reasons- a) several interventions for CAMH disorders require longer period of time and b) the benefits of the interventions can be assessed even after several years following the intervention(10). Therefore,

it is necessary to identify the demands CAMH services, and monitor the financing cautiously for continued development of the services. Moreover, in many places, CAMH services are offered by the NGOs and these interventions don't sustain over time. The providers must be encouraged and supported to continue their efforts in a sustainable manner through effective financing of the services.

Further, financing CAMH services can be challenging but managed in a systematic manner. Many disorders require care from different specialties and therefore, resources from different agencies. A multifaceted approach to share human and materialistic resources to deliver the services can be a cost-effective way for CAMH in India. Having limited financing options is a significant barrier for CAMH, but it can be improved with financial support from the development partners, evidence-based cost-effective interventions and managerial leadership at the policy level.

Developing Resources for Child and Adolescent Mental Health

Preventing mental illness, promoting optimum mental health and treating the affected individuals require specific resources. Most importantly, the human resources required to deliver mental health services are the mightiest players to improve the CAMH in both preventing and treating the disorders. But, almost every country in the world has a shortage of skilled human resources in the field of mental health(36). Several strategies can be adopted to address this issue including- a) increasing the number of seats and participants in different training programs in CAMH, b) providing training to non-health professionals for increasing the skill mix as well as multifaceted intervention, c) shifting tasks by providing special training to general psychiatrists and pediatricians, d) arranging workshops for school teachers and social workers to enable them prevent CAMH disorders at community level, e) arranging basic

training about early identification of CAMH disorders for community health workers and other field level workers and f) using communication technologies like m-Health or e-Health to mitigate the effects of distance and scarcity of manpower(10).

Further, the medications for CAMH disorders should be included in the guidelines and manufactured at national level as they are very useful resource for the therapeutic purposes. During developing drug protocols, the medications must be chosen cautiously considering a) the retail price of the medication, b) the socioeconomic condition of the families, c) likelihood/adherence to the medication, d) possibilities to purchase the drug over-the-counter resulting addiction, e) the effectiveness of the alternative medications.

Moreover, the production of the drugs at national level can reduce the price as well as save the national reserve that could be spent by importing expensive drugs(10). Developing other resources should be done considering the national context, the sustainability of the resources and potential impact in the future(37).

Legislation and Human Rights for Child and Adolescent Mental Health

A policy for CAMH is best designed and implemented if it corresponds to the national and international legislations and reminds the nation how it is responsible to protect the young souls from mental disorders and ensure a healthy life for each of them.

The rights of child and adolescent is well established worldwide. Countries signing the ‘United Nations Convention on the Rights of Child (CRC) 1989 committed to ensure the right of physical and mental development for each and every child(10). India is one of the signee countries and it has submitted two reports in 1997 and 2001 affirming its support to the CRC(38). In both the reports, several initiatives have stated that are adopted or planned to be adopted for improving child development across the nation. The articles of CRC should be re-

examined in the context of India and more engaging actions should be taken in the process of policy development. There are several articles that are relevant to CAMH as a) protecting child from physical and mental violence, b) protecting the confidentiality of the individuals, c) ensuring access to the families, d) eliminating unacceptable and unnecessary treatments like electroconvulsive therapies, and e) preventing abusing approaches to children with CAMH disorders.

Another significant legislation is the United Nations General Assembly Resolution 46/119 on improving mental health across the globe(39). The major principles adopted in the resolution include- a) ensuring basic human rights and entitlements of people with mental diseases, b) establishing the criteria for mental disorders, c) protecting the confidentiality of the individuals, d) establishing appropriate standards of care, e) rights of those living in mental health facilities, f) allocation of resources for CAMH, g) provision of monitoring the services, h) protecting the rights of offenders with mental illness and i) ensuring safeguards to save the rightful entitlements of mentally ill people(10).

Other notable legislative efforts at international level include- Minimum Age Convention 1973, Universal Declaration of Human Rights 1948, Article 7 of International Covenant on Civil and Political Rights, Section 10.3 of International Covenant on Economic, Social and Cultural Rights, UN Convention on the Rights of Persons with Disabilities (CRPD), Protocol to the CRC on the Sale of Children, Child Prostitution, and Child Pornography 2000, European Convention on the Exercise of Children's Rights (ECECR) etc.(10). Apart from these, India has its own legislations stating rights of children and adolescents. Some of these are Immoral Traffic Prevention Act (1986), Orphanage and Charitable Homes Act, Persons with Disabilities Act, Juvenile Justice Act (2000), Protection of Children from Sexual Offences Act (2012), Child Labor Prohibition Bill (2012) etc.(40). The policy makers must explore the opportunities to

incorporate the provision within these legislations to CAMH policies for better legal foundation and further implementation of the policies in the context of India.

Policy Advocacy for Child and Adolescent Mental Health

Advocacy for CAMH policy is a powerful driver and can facilitate the policy development in India as it is one of the largest democratic countries(41). It can be initiated from any level in the society and promoted or inhibited by others. The purpose of advocacy is to minimize the barriers and optimize the opportunities to promote CAMH. The vital goals for advocacy for CAMH include- a) changing the national legislations and priorities toward a positive direction for CAMH, b) promoting equal opportunities for all children with mental illness in India, c) promotion of positive mental health and prevention of mental illness, d) protecting the health of the vulnerable children and adolescent, e) reducing social stigma and behavior to CAMH, f) bringing CAMH as a sociopolitical agenda and facilitating the development of strategies for CAMH(10).

There are several group of people who can serve as advocates. For instance, the parents of mentally ill children and adolescents can do advocacy at different levels because they have considerable amount of knowledge about CAMH disorders and they can provide realistic information about the burden of the diseases, barriers to care, social determinants of CAMH diseases and practical experience on dealing with the problems and services offered as solutions. Their voices are true ‘demands’ instead of unspoken ‘need’ of the community which can help the policy makers to understand the depth of the problem. Other advocates like health providers, psychologists, public health scientists, social workers, civil societies, NGOs, academic institutions etc. can facilitate the advocacy for developing a strong CAMH in India(10)(42).

Further, establishing an autonomous institution dedicated for CAMH can serve as a sustainable base for connecting all the advocates and proceed the advocacy at institutional level.

Organization of the Child and Adolescent Mental Health Services

Developing appropriate set of services for CAMH is a challenge even in the developed countries. It becomes harder in developing nations where the resources are limited, awareness is minimal and the preparedness of the system is low to initiate newer services for CAMH. This situation can be addressed by understanding the local strengths, proactively engage all the stakeholders and translate the benefits of CAMH services to those who will design the policy and programs for the States and the nation(10).

In the administrative level, the services for CAMH must have an optimal mix of services as per the CAMH policies and plans manual of WHO(10)(43). In the pyramid shown in Figure 6, the services are highly required at the individual and community level.



Figure-6: Optimal mix of mental health services recommended by WHO 2003(10)

The necessity of clinic or hospital based services are lower in number but higher in terms of cost. The role of ‘asylums’ are minimal in the list of services and socio-ecological strengthening provides the best opportunities to improve the CAMH conditions in a resource-constrained country like India. Considering these facts, CAMH services can be adopted in different triers involving diverse players to deliver specific services. For instance, families, schools and community based organizations can provide informal community care involving volunteers and non-health activists. The focus of such services will be prevention of mental health disorders and promotion of health environment around the children. In the next level, professional health workers can contribute through primary health care in clinics or district hospitals and the focus of the services can include parental and youth counselling, screening and basic psychiatric and psychological support to the affected children and adolescents. In more advanced settings like child guidance clinics or regional hospitals, the role of general mental health specialists and multidisciplinary teams become evident to investigate and treat the affected individuals. Furthermore, the specialized hospitals or long stay facilities can provide highly specialized care and rehabilitative services through CAMH specialists and other super-specialists professionals. Apart from such skill mix options, some additional issues must be considered for policy development(10). These are a) child and adolescent with mental disorders shouldn’t be treated within the general health facility as it can promote embarrassment and mental stress, b) they shouldn’t be treated alongside the adult psychiatric patients as it can lead to intimidation and fear, c) the coordination among the levels of care must identify and refer the individual to next appropriate level without delay, d) the entire system must have effective communication to ensure continuum of services for CAMH, and e) the affected individuals and families should be involved in the planning process to ensure the acceptability and utilization of the services.

Altogether, these issues regarding organization of CAMH services can provide meaningful insights in designing low cost interventions at different levels of the health system of India.

Promoting CMAH and Improving Availability and Accessibility to the Services

The policy makers should consider the cost-effectiveness of treating CAMH disorders and burden of treating the future mental health disorders in adults who started developing the disease during childhood or adolescence.

It is always the best idea to prevent the disease and reduce the associated burden by designing realistic and evidence-based policy interventions. Hence, promoting CAMH in the communities and societies should be considered as an effective strategy for India. Moreover, the policy makers should also address poverty and social stigma as they are very common with mental disorders. In addition, a special attention should be given to the vulnerable population like orphans, refugees, children with physical disabilities and chronic diseases, sexually or emotionally abuse individuals and so on and so forth(21). Furthermore, the CAMH services should be made available to all the social classes in every region, which is a real challenge for a large country like India. Last but not the least, the services must be made accessible to every child and adolescent irrespective of their socioeconomic condition. There are many barriers that are already discussed and many more will arise once the policy will come to practice, but the caregivers from the grassroot to policy level should continuously identify and address these barriers through cost-effective, evidence-based and socio-politically feasible strategies.

Mental Health Information Systems

An integrated information system serves as a roadmap to take informed decisions at executive level in a health system(44)(45). In mental health, measuring the demands and supplies is one of the greatest challenges to deliver optimum services. In a large country like India, appropriate service related information like admission rate, bed occupancy rate, average length of staying at hospital, key quality indicators etc. are not easy to obtain(46). Therefore, decisions regarding policies and programs for CAMH aren't precise and manageable. However, some outcome indicators like school dropout rates, imprisonment rates, suicide rates etc. are found through non-health databases and they cannot be used for making decisions within the health system. The development of a comprehensive information system for mental health can improve the mental health services in general and decisions for CAMH will be improved as well. A centralized mental health information system can improve to monitor the important indicators for mental health (enumerated in Appendix-3) and take appropriate measures from a higher level including protocols development or audit procedures(10)(45). Moreover, a state-level information system which can be a part of the centralized system can measure the inputs and outcomes at state level and compare the data with other states or previous data of the same state and take corrective measures within the CAMH services. The overall contribution of the information system will be reflected on the outcomes at the patient level. Presence and utilization of an effective as well as efficient mental health information system can improve the overall services resulting a) reduction in disabilities, b) reduction in absenteeism from school or work, c) quality of life, d) reduction of the disease symptoms and e) satisfaction about the services(10).

Research on Child and Adolescent Mental Health

World Health Organization recommended five key areas for research in mental health(10). The first area is epidemiological research which aims to estimate the prevalence of CAMH disorders in both general and vulnerable population, conducting longitudinal studies for CAMH disorders and estimating the possible relations with social determinants, risk factors, protective factors and other environmental determinants. The second area is prevention, promotion and treatment outcome research. This area focuses on efficacy and effectiveness of pharmacological, psychological interventions, implementation of effective interventions and factors influencing the adherence to the interventions. Next, the third area of research is policy and services which emphasizes on impact of policy decisions, pathways of reaching a desired situation, outcomes and cost-effectiveness of the social interventions, and comparative advantages as well as disadvantages of different policies and services. Further, the fourth area is economic research that describes the benefits of CAMH interventions in different ways and performs cost-benefit analysis of new interventions or existing services. The last area of research is cross-cultural comparisons. India has a culturally diverse population and people from different regions have different languages as well as culture. While developing a CAMH policy, the central and the state Governments must look for the researches done on the influence of cultural context on the CAMH and appropriate interventions should be taken in respect to the fundamentals of the culture of the population.

Quality Improvement of the Policy Initiatives

Like any intervention, CAMH policy should have an integrated approach to monitor its pathway and improve the quality of the policy attributes over time. Quality improvement is an ongoing

activity and it follows a specific step-wise pathway (illustrated in Appendix-4) to evolve the entire process for better outcomes(10). To do so, several standards and legislations can be adopted within the policy and the services are assessed periodically based on those standards. The services are required to be assessed periodically according to the standards and management tools are used to improve the services. Following a corrective modification, the entire cycle should be repeated and quality is achieved through continuous efforts and commitments of the higher authority. For improving quality in CAMH services, the policy must protect the mental health rights and satisfaction regarding the services among the mentally ill individuals, their families, and other affected stakeholders.

Intersectoral Collaboration for Improving Child and Adolescent Mental Health

Improving mental health involves many stakeholders from the inception of the policy to implement the services. Therefore, better understanding between the stakeholders and collaborative approaches are required to promote CAMH in India(42).

For instance, a school-based mental health program involves students, parents, teachers, social workers, psychiatrists, psychologists and many other persons who must agree on the problems and potential strategies to manage them for a greater well-being of the affected child population(47). Moreover, in community or state-based programs, all the stakeholders must unite to increase the strength of the interventions and mitigate the challenges. Like any public health activity, such collaboration can be extended to external players like development agencies, international institutions and so on and so forth. A successful collaboration must not be temporary and it is essential to institutionalize the collaborative efforts for sustained interventions. From a systems perspective, intersectoral collaboration can facilitate long term planning for developing resources as well as extend the coverage of the CAMH services.

Furthermore, collaboration enables the players to identify the best actions for each of them and by summing up those the ultimate outcome of the collaboration surpasses the outcome of complete effort of any individual stakeholder. In addition, the activities on national context can be done on collaborative manner. As 'health services' are dependent primarily on the States, a collaboration between the Central and State authorities can bring splendid results in improving undermined areas like CAMH. For example, large scale activities like national level training for the human resources, conducting national assessment, developing the national policies and treatment protocols etc. can be arranged by the Central Government whereas the State Government can design State-specific CAMH policy and work plans, and implement the services at the districts within a State.

Discussion

A policy for CAMH in India can be made considering the evidences of policies and interventions that took place in other countries. The focus of CAMH policy is centered on creating provisions for improving the mental health status among the young population which requires the responsiveness of the health system to the policy recommendations. A review of mental health services in European countries demonstrated heterogeneity of services in different countries in terms of mental health workers, organization of services and research on CAMH(48). The focus of care is more on outpatient services instead of inpatient care. Even in highly developed countries, there is a lack of coordination among the services offered. Many European countries follow the guidelines of Union of European Medical Specialists for training the human resources for mental health which provides the program specific guidance on monitoring the quality of the training as well. In North America, the federal Government facilitated the Child and Adolescent Service System Program (CASSP)(49). Further, four stages are identified for

developing CAMH services comprising a) developing infrastructure that ensures the coordination of the services through improved communication, b) better understanding of the needs for CAMH services and strengthening the communities, c) bringing public and private funding agencies together and ensure sufficient funding for CAMH, and d) establishing an integrated care system that takes care of social, medical and educational development of the young population(48).

On the other hand, there is lack of data for CAMH in South America. Although CAMH services are offered in urban health centers but the services are often focused on specific diseases and they aren't equitably distributed. In addition, the CAMH care is largely affected by the scarcity of human resources. In most of the South American countries, the WHO recommended ration of child to CAMH specialist (2:60000) is far away from the reality. In countries like Venezuela and Chile, the number if child psychiatrist was 51 and 85 respectively till 2003(48).

In Australia, several effective therapeutic and preventive strategies are implemented but the CAMH services are suffering from a set of challenges like a) insufficient financing for CAMH, b) lower utilization of the services, c) high burden of diseases on aboriginal population groups, d) inadequate training for non-mental health workers within the health systems. e) high prevalence of suicide and many behavioral disorders, f) lack of services in rural areas, g) lack of coordination etc.(48). All these issues can be addressed by effective policies and successful implementation of the same.

In African countries, the context was very adverse for the development of child and adolescent due to conditions like armed conflicts, epidemics, shortage of basic living amenities, child abuse, prostitution and homelessness(50). The care for CAMH is also poorly developed and coordinated. Despite of few formal care system, many informal systems of care exist in those countries. Family and community based services are evident along with natural and faith healers.

Lack of sufficient training on CAMH among the skilled providers is one of the key policy challenges for African countries(50).

In Asia, the focus of CAMH services isn't adequate as many of the countries are struggling with infectious diseases and other health hazards. Therefore, very poor attention has been paid to mental health in general. In many countries like India, Japan, China and Philippines, the CAMH is emerging as a growing field of medical care, but the services and allied research are still sub-optimal(48).

Moreover, there is no diagnostic criteria for CAMH in Asian countries and western guidelines like DSM- IV or V and/or ICD-10 is used widely, but those guidelines aren't capable to identify the cultural aspect of the young population in Asian countries. Therefore, the diagnosis and care for CAMH isn't accurate in many cases. Furthermore, the social evolution of these countries demonstrates changes in the pattern of family lives and other issues that affect the development of children, there is lack of data that how much of these changes are contributing to mental health disorders and how these can be mitigated through policy interventions(48). In addition, the scarcity of resources and social stigma remains biggest challenges for developing optimal care for CAMH in Asian countries. Experiences about all the above-mentioned challenges and how the countries responded to these challenges are critical to develop a CAMH policy. India must consider these issues in the planning phase of policy development to prevent the health system challenges for CAMH in the first place.

This policy analysis has some strengths as well as limitation. Strengths include- a) it is the first ever policy analysis for child and adolescent mental health in India, b) the analysis is primarily based on the guidelines recommended by World Health Organization, c) it enumerated the gaps and areas for action in CAMH from various published sources. The limitations are- a) meetings and discussions between the key stakeholders are critical for policy development, which were

beyond the scope and resources of this analysis, b) country specific psychosocial determinants aren't addressed adequately in this analysis, c) the cost effectiveness or cost utility assessment of the policy recommendations aren't included in the analysis, which is subject to availability of authenticated data in the given context, and d) the literature and relevant documents were searched online, therefore, any offline official document wasn't accessed which might enrich the analysis.

Conclusion

Since its independence in 1947, India has achieved significant successes in many health indicators but none of them describes how much it has done for the intellectual and spiritual independence of the young population, who are the future representatives of the nation. Very high magnitude of mental disorders among the children and adolescent in India is alarming for the future. The economic burden of this ignorance includes the cost of treatment and the loss of potential gains that could be achieved if the child and adolescent population could grow in a healthier condition. Till now the magnitude of diseases, socioeconomic significance and gaps in the health system for child and adolescent mental health are least discussed in the existing national policies and programs in India. There are well documented challenges and barriers that could be minimized with a proactive, comprehensive, integrated and multisectoral approach. A national policy for CAMH can serve as the foundation of the future initiatives that will aim to understand the problems related to CAMH, find the roots within the minds of affected population as well as in the society, address the issues with stewardship approach, create enabling environment through enforcing positive mental health and set a national vision to stand along with every children and adolescent to ensure the prevention of mental disorders and promotion of mental wellbeing among them.

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Appendices

Appendix-1: Prevalence of mental disorders in child and adolescents of India in different community-based studies adopted from a meta-analysis of Malhotra et al.(12)

Serial No.	Investigators	State	Setting	Age	Sample Size	Diagnostic instrument(s)	Estimated Prevalence
1	Sethi et al. (1967)	UP	Urban	0-20	924	Comprehensive interview	7.68%
2	Elnager et al. (1971)	West Bengal	Rural	0-14	635	Clinical assessment, WHO expert tool 1960	1.3%
3	Sethi et al. (1972)	UP	Rural	0-20	1386	Comprehensive interview	5.84%
4	Vergheese et al. (1974)	TN	Urban	4-12	747	Pretested Questionnaire, ICD-9 item sheet	8.17%
5	Nandi et al. (1975)	West Bengal		0-11	462	Comprehensive interview	2.6%
6	Thacore et al. (1975)	UP	Urban	0-15	1191	Clinical assessment, DSM II	6.9%
7	Shah et al. (1980)	Gujarat	Urban	4-14	1089	Clinical assessment, checklist	0.8%
8	Singh et al. (1983)	UP	Urban	1-14	279	Comprehensive interview, WHO expert tool 1960	29.4%
9	Nandi et al. (1986)	WB	Rural	0-11	551	Comprehensive interview, WHO expert tool 1960	1.08%

10	Mehta et al. (1985)	TN	Rural	0-14	2012	Clinical assessment, mental health survey schedule	1.84%
11	Sachdeva et al. (1986)	Punjab	Rural	0-14	660	Clinical assessment, mental health survey schedule, ICD-9	1.06%
12	Nandi et al. (2000)	West Bengal	Rural	0-11	1173	Comprehensive interview, WHO expert tool 1960	2.73%
13	Singh et al. (1989)	Rajasthan	Urban	5-15	348	Comprehensive interview, Clinical assessment	14.37%
14	Premarajan et al. (1993)	Pondicherry	Urban	0-12	273	Pretested Questionnaire, ICD-9 item sheet	5.86%
15	Gaur et al. (2003)	Haryana	Both	6-14	800	Diagnostic interview, CPMS, ICD-10	16.5%
16	Srinath et al. (2005)	Karnataka	Both	0-16	2064	Multiple checklists, interviews, Vineland social maturity scale, Binet Kamat Test, SLD Battery, ICD-10	12.5%

Appendix-2: Risk and protective factors for child and adolescent mental health adopted from WHO(10)

Domain	Risk factors	Protective factors
Biological	Exposure to toxins (e.g. tobacco and alcohol) in pregnancy Genetic tendency to psychiatric disorder Head trauma Hypoxia at birth and other birth complications HIV infection Malnutrition Other illnesses	Age-appropriate physical development Good physical health Good intellectual functioning
Psychological	Learning disorders Maladaptive personality traits Sexual, physical and emotional abuse and neglect Difficult temperament	Ability to learn from experiences Good self-esteem High level of problem-solving ability Social skills
Social		
a) Family	Inconsistent care-giving Family conflict Poor family discipline Poor family management Death of a family member	Family attachment Opportunities for positive involvement in family Rewards for involvement in family
b) School	Academic failure Failure of schools to provide an appropriate environment to support attendance and learning Inadequate/inappropriate provision of education	Opportunities for involvement in school life Positive reinforcement from academic achievement Identity with a school or need for educational attainment
c) Community	Lack of "community efficacy" (Sampson, Raudenbush & Earls, 1997) Community disorganization Discrimination and marginalization Exposure to violence Lack of a sense of "place" (Fullilove, 1996) Transitions (e.g. urbanization)	Connectedness to community Opportunities for constructive use of leisure Positive cultural experiences Positive role models Rewards for community involvement Connection with community organizations including religious organizations

Appendix-3: Matrix for child and adolescent mental health indicators at national, state and individual level, adopted from WHO (10)

		Temporal dimension		
		Input*	Process**	Outcome***
Geographical dimension	(1) Country/ regional level	Bed/population ratio Community/hospital ratio (staff) Expenditure on child and adolescent mental health Government policies Mental health laws Staff/patient ratio Staff/population ratio Treatment protocols and guidelines	Bed occupancy rate Admission rate Average length of stay Readmission rate Community/ hospital ratio (utilization) Default rate Minimum standards of care Patterns of service use Audit procedures Pathways to care and continuity Targeting of special groups	Divorce rate Homelessness rate Imprisonment rate School dropout rate Suicide rate
	(2) Local level (catchment area)	Availability of medication Community/hospital ratio (staff) Hospital and community services Local service budget for child and adolescent mental health Staff numbers and mix Working relationships between services (intersectoral collaboration)	Admission rate Average length of stay Bed occupancy rate Community/hospital ratio (utilization) Default rate Readmission rate Subjective quality of treatments	Outcomes aggregated at local level Physical morbidity Suicide rate
	(3) Patient Level	Assessment of individual needs Content of treatment Demands made by patients and families Information for patients/care-givers Staff skills and knowledge	Continuity of care Continuity of clinicians Extent of involvement of parents and schools Frequency of appointments Pattern of care process for individual patients	Disability Impact on caregivers Needs Percentage of days children and adolescents are absent from school Percentage of time parents spend at work Quality of life Satisfaction with services Symptom reduction

Appendix-4: Steps for quality improvement in mental health adopted from WHO (10)