Behavioral Emergencies in India: Would Psychiatric Emergency Services Help?

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Abbreviations:
DALY = disability-adjusted life years
NGO = non-governmental organization
PTSD = post-traumatic stress disorder
WHO = World Health Organization

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Abstract

Introduction: Behavioral emergencies constitute an important component of emergencies worldwide. Yet, research on behavioral emergencies in India has been scarce. This article discusses the burden, types, and epidemiology of behavioral emergencies in India.

Methods: A computerized search of Medline, Psychinfo, and Cochrane from 1975 to 2009 was performed, and all articles were evaluated and collated. The results were summarized.

Results and Conclusions: There is an acute need for psychiatric emergency services in India. Suicides, acute psychoses, and substance-related problems form the major portion of behavioral emergencies, while current trends show a rise in disaster- and terrorism-related emergencies.

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Introduction

India is a vast country, populated by nearly one-fifth of the world's population.[1] Health is of utmost concern in India. The World Health Organization (WHO) has declared that the "enjoyment of the highest attainable standard of health" is "one of the fundamental rights of every human being without distinction". However, the burden of deaths and disability from non-communicable diseases in developing countries outweighs the burden imposed by chronic communicable diseases.[2] One of the most common problems is psychiatric illnesses, which resulted in a burden of 8.2–8.4% disability-adjusted life years (DALYs) in 2002.[2] This burden is predicted to rise, especially in middle-income countries, where the burden is estimated to cost 44 million DALYs, causing 7.7% of the total disease burden.[3] Despite the growing burden, the mental health budgets of the majority of countries constitute <1% of their total health expenditures.[4]

Although the burden of psychiatric illness is unquestionable, scant knowledge exists on behavioral emergencies, which may be the presenting feature of several psychiatric illnesses. Behavioral emergencies are a serious problem, not only for mental health professionals, but also for emergency service providers. Behavioral emergencies may include suicide, substance dependence, panic attacks, delusional disorder, violence, and other such behaviors. Unfortunately, just as in psychiatric illnesses, people suffering from behavioral emergencies also suffer from enormous stigma, especially in developing countries like India,[6,7] which means that they are treated with little or no dignity and often are locked away.[8] The good news is that these stigmatizing attitudes and perceptions of the general public and professionals has undergone significant change with the use of education and awareness campaigns, but a lot of work still must be done.[7]

A *behavioral emergency* is defined as an acute disturbance of behavior, thought, or mood of a patient, which usually manifests as an acute behavioral change and which, if untreated, may lead to harm, either to the individual or to others in the environment.[9] Behavioral changes can be caused due to various causes, both organic and functional. Medical causes such as hypo/hyperglycemia, endocrine or hormonal disorders, hypoxia, hypo/hyperthermia, and exposure to poisons, infections, or toxins are some of the factors that may alter behavior, resulting in an acute behavioral emergency.[9,10]

In India, the condition of mental health services has been improving steadily. The current emphasis is on community psychiatry, moving specialty services from asylum care to general hospitals and primary health centers. During the past few decades, various voluntary and non-governmental organizations also have taken an active interest in various aspects of mental health in India.[11] Yet, there still is a wide gap between the existing morbidity and the available services, with a negligible presence of psychiatric

emergency services.[11] In spite of the rising incidence of behavioral emergencies, which require comprehensive assessment and treatment, research on behavioral emergencies in India has been scarce.[12] The aim of this paper is to shed light on the burden of behavioral emergencies in India so as to evolve a need to establish specialized psychiatric emergency services in India.

Methods

A review of the literature was performed through a search in the electronic databases Medline, Psychinfo, and Cochrane, including articles from 1975–2009, and using the following terms as search strategies: "behavioral emergency"; "psychiatric emergency"; "acute psychiatric disturbances"; "suicide"; "post-traumatic stress disorder"; "panic attacks"; "drug intoxication"; "substance induced intoxication and/or withdrawal"; "agitated or/and violent behavior"; "abuse"; "disaster"; "post-partum psychosis"; and study done in India, or among the Indian population. Subsequently, bibliographies of articles selected via the first strategy were searched, with the aim of including publications missed by the electronic search. Out of 122 research articles found, only those articles that had indicated emergency services for the disorder and described psychiatric emergencies pertaining to India were selected (approximately 65 articles). All selected articles were reviewed by two independent reviewers and the data on epidemiology were reviewed and reported. Finally, a draft description of the status was conceptualized by evaluating the articles using qualitative techniques, and collating and summarizing the results.

Results

Epidemiology of Behavioral Emergencies in India

In India, approximately 15 million people are estimated to have serious mental disorders.[13] In their estimation of the cost of mental illness in India, Math *et al* reported that the total cost required is 1,950 crores INR (Indian Rupee) per month and 23,400 crores INR per year (US$430.1 million and 5,161 million, respectively). If these issues are neglected, the indirect costs in terms of loss of wages by the patient, disability, and the social isolation, burden, stigma, and psychological strain facing them and their families will be enormous.[5] However, the cost of mental health does not take into account the burden to caregivers that accompanies behavioral emergencies.

The suicide rate in India is approximately 11.4/100,000 males and 8.0/100,000 females.[14] Although the first study on behavioral emergencies was in 1973,[15] it provided inadequate information. The next study followed nearly 10 years later, and described the pattern of emergency psychiatry referrals over a period of 35 days in a tertiary care general hospital.[16] An emergency psychiatry referral rate of 5.4% (suicide attempts (13%), excitement and violence (10%), and altered sensorium (9%)) constituted 32% of the total referrals. Neurotic complaints (51%) and functional psychoses (13%) comprised the major psychiatric diagnoses among the emergencies.[16]

Trivedi and Gupta also reported on the pattern of psychiatric patients presenting to the emergency psychiatric services of a post-graduate teaching hospital during a 90-day period.[17] They observed a referral rate of about 2.20 cases per day from the general emergency department (204 patients), and 3.47 cases per day at the psychiatric emergency department (132 patients). Epilepsy and associated disorders (37%), attempted suicide by poisoning (28%), and psychosomatic illnesses (19%) were the major psychiatric diagnoses attended to in the general emergency department, while acute psychoses (68%) was the major psychiatric illness in the emergency psychiatric department. The male:female ratio was approximatley 1.6:1, with the most patients in the 17–25 year (32.9%) and 26–40 year age groups (25.7%).[17]

However, a separate study reported that nearly one-fifth of all patients who presented to psychiatric emergency services did so with social problems that only required social rather than psychiatric intervention.[18] Psychiatric emergencies constituted only 2% of all emergency visits, with males outnumbering females 2:1. Patient self-referrals constituted approximatley 77% of the sample, while 21% of patients were brought by police. Two-thirds of the patients were transported due to the severity of their clinical condition and the remaining one-third for medico-legal and social reasons. In the most recent study, which probably is the first study in the country to comprehensively document behavioral emergencies, a total of 40,541 behavioral emergencies were recorded in the states of Gujarat and Andhra Pradesh, in which the male:female ratio was 1.3:1.[19] Most victims were in the 20–30 years age group (42%), from a poor socio-economic background (93%), from a rural area (74.3%), and backward caste (42.6%). Suicidal attempts, whether in the form of poisoning (60.5%) or otherwise (30.7%), were the most common emergency, followed by acute psychotic episodes (4%), and alcohol intoxication (3%).

Subsequently, there have been several studies that have reported on different behavioral emergencies. Since these reports did not study patterns as a group, they are reported below as individual behavioral emergencies.

Suicide—Suicide is a major public health problem not only in India, but worldwide. The developing countries bear a huge burden, as their suicide rates are very high. Suicide is the 13th leading cause of death worldwide, and it is predicted that by 2020, the current rate of one death every 40 seconds will increase to one death every 20 seconds.[2] The number of suicides in India also has increased 33.9% from 88,241 in 1996 to 118,112 in 2006.[20] With respect to suicides committed, currently, India occupies the 45th position globally, and the 2nd position in the Southeast Asia region with respect to suicides committed.[2]

Suicide rates in India vary across the country, with states such as Kerala having the highest suicide rate of 30.8/100,000 population. Suicide rates are higher in urban settings than in rural settings.[9] One study reported that the southern states of Kerala, Karnataka, Andhra Pradesh, and Tamil Nadu have a suicide rate of >15/10,000 population, while in the Northern States of Punjab, Uttar Pradesh, Bihar and Jammu, and Kashmir, the suicide rate is <3/10,000 population. This difference has been stable for the last 20 years. Higher literacy, a better reporting system, lower external aggression, higher socio-economic status, and higher expectations are possible explanations for the higher suicide rates in the southern states.[21]

Mental illness has been a major risk factor for suicide in India, especially depression followed by alcohol abuse and schizophrenia.[21,22] Two case control studies using psychological autopsy techniques have been conducted in Chennai and Bangalore. Among those who died by suicide, 88% in Chennai and 43% in Bangalore had a diagnosable mental disorder. However, diagnostic evaluations were not done in the Bangalore study.[21] Violence and psychological distress also

have been observed to be independently associated with suicidal behavior among young people in India; with women from rural India more likely to commit suicide.[23] Most suicides in India are impulsive and related to stress.[24] Childhood sexual and physical abuse, witnessing domestic violence, parental separation or divorce, and living with substance-abusing, mentally ill, or criminal family members are other factors that may trigger a suicide attempt.[23,25]

The most common methods used for committing suicide in India are hanging and poisoning.[21,26–28] Data on suicide in India indicate that the majority of suicides occur among those <30 years of age, which further imposes huge social, emotional, and economic burdens on society,[21] since the general productive age of an individual is between 15–34 years.[29]

Deliberate Self Harm—Deliberate self harm contributes substantially to global mortality. In 2002, the WHO reported an estimated 877,000 deaths by suicide.[2] Studies on parasuicide or deliberate self harm from India have reported risk factors associated with *attempted* suicide as: being male, low level of education, low socio-economic status, illness, and family problems.[30,31] A study from Manipal on 52 people who survived suicide, reported that men were more vulnerable than women in regard to deliberate self-harm.[32] Urbanites (80%) outnumbered rural dwellers (20%), and more than one-third of those studied were in their third decade of life. More than half had at least a secondary school education, with manual laborers (23%) being the most vulnerable group when compared to skilled laborers and professionals. Married individuals (52%) and those from a lower-middle class sector (70%) attempted suicide more often than other groups. Another study identified *personality disorders* to be associated with deliberate self harm in two different age groups (15–24 years and 45–74 years).[33] The authors reported a higher percentage of personality disorders among the elderly age group (64%) compared to the younger (58.5%). In the younger group, the most common disorder was *emotionally unstable personality disorder* (28.6%), and in the elderly group, the most common was *anankastic* type of personality disorder (36%). Schizoid, dissocial, histrionic, and anxious avoidant personality disorders were found in a small percentage of cases. Another recent study reported hanging and insecticide poisoning (72%) as the most common methods used.[34] Males preferred hanging and insecticide poisoning, while females preferred self-immolation and hanging. Self-immolation and insecticide poisoning had the highest mortality (41.6%). Estimates of attempted suicides for the year 2008 revealed a mean of 3.2–3.8 per 1,000 population for males, 3.3–3.7 per 1,000 population for females, and 6.4–7.6 per 1,000 population combined.

Substance Dependence, Abuse, Intoxication, and Withdrawal—Another common psychiatric emergency is psychoactive substance use, which poses a significant threat to the health, social, and economic dimension of any country. The global burden of tobacco, alcohol, and illicit drugs combined, contributed to 12.4% of all deaths worldwide in 2000.[35] Beyond the dangerous behavioral changes that occur after the consumption of certain amounts of alcohol, idiosyncratic intoxication could occur in some individuals even after the consumption of relatively small amounts of alcohol. Episodes of this impairment usually consist of confusion, disorientation, delusions and visual hallucinations, increased aggressiveness, rage, agitation, and violence. Chronic alcoholics also may suffer from alcoholic hallucinosis, whereas the cessation of prolonged drinking may trigger auditory hallucinations, all of which may result in a behavioral emergency.

Alcohol-related problems made up 17.6% of the caseload of psychiatric emergencies in an Indian General Hospital.[36] A psychiatric co-morbidity was present in 40% of the cases. Alcohol abuse also contributed to approximately 78% of the total substance abuse-related emergency attendance in another study.[37] In addition, about 25% of road traffic crashes are alcohol-related, and 20% of accident-related head injury victims seen in emergency rooms consumed alcohol prior to the accident.[38] A retrospective chart review[39] of emergency services users reported that out of 54 patients seeking emergency services with substance abuse (1.16% of all psychiatric consultations), alcohol abusers comprised 77.8% and other opioid abusers, 14.8%.[39] The prevalence of injection drug users was 16.7%. Alcohol withdrawal was the most common cause (57.4%) of emergency department visits. Psychiatric co-morbidity was found among 7.4% of the population. At the time of injury, alcohol involvement also is known to be present among 15% to 20% of persons with traumatic brain injuries.[40] Furthermore, alcohol also significantly contributes to one-third of suicide attempts.[41] Most importantly, the annual economic loss due to alcohol-related problems in work places in India is between Rs 70,000 to 80,000 million (US$1,543–1,764 million).[42]

Agitated and Violent Behavior—Aggression can be the result of internal and external factors that create a measurable activation in the autonomic nervous system and became manifested in symptoms such as the clenching of fists or jaw, pacing, slamming doors, hitting palms of hands with wrists, or being easily startled.[43] Literature suggests that agitated or violent behavior occurs mostly as a result of either serious mental illness or substance misuse,[44,45] and it constitutes approximately 10% of the total causes for use of emergency services worldwide.[45]

In India, studies on agitated and violent behavior as a cause of emergencies are non-existent, although violence has been noted to be associated with suicidal behavior.[23] Factors associated significantly with violence were: male gender, diagnosis of personality disorder, psychotic symptoms, substance- and alcohol-related disorders, low income, suicidal risk, and increased stay in the hospital, while factors significantly associated with aggressive behavior were: female gender, diagnosis of depression, and alcohol abuse.[25]

It is pertinent to understand methods of reducing agitation in violent patients; however, guidelines and clinical practices vary widely on the choice of drugs to manage violence in psychiatric emergencies.[46] A comparison of intramuscular olanzapine with intramuscular haloperidol plus promethazine on the rapid tranquillization of agitated or violent people with mental illness (n = 300) in behavioral emergencies reported that intramuscular olanzapine and intramuscular haloperidol plus promethazine were equally effective at rapidly tranquillizing or sedating agitated or violent patients with mental illness, but the latter combination resulted in fewer additional medical interventions within four hours of intervention.[45]

Disasters and Post-Traumatic Stress Disorder—Disasters are another major cause of psychiatric emergencies leading to psychological stress, which in the long run, may give rise to the post-traumatic stress disorder (PTSD). Disasters caused by natural and/or human-made hazards can cause severe psychological stress. The impact of disasters can cause people to feel shocked,

overwhelmed, immobilized, panic-stricken, and/or confused. The WHO recognizes that exposure to extreme stressors is a risk factor for mental health and social problems.[47] Events such as earthquakes, tsunamis, terrorism, bombings, and hijackings erode the senses of safety and security. The psychological impact of disasters can be more subtle and can bring shock and distress not only to the community and the state, but to the entire nation.[48] The psychological suffering from an act of terrorism usually is more extensive than that related to the physical injuries.[49] Patients suffering severely from this disorder often are admitted to psychiatric hospitals for stabilization.[50]

India is among the world's most disaster-prone areas with a population of more than one billion. It has been witness to several major disasters in the last few decades, including the Bhopal gas tragedy in 1984, earthquakes in Uttar Kashi in 1991, Latur in 1993, Gujarat in 2001, the tsunami in 2004, the earthquake in Kashmir in 2005, and the terrorist strikes in Mumbai in 2008. Chadda and colleagues compiled a comprehensive report on the earthquakes occurring in Kashmir in October 2005 and the subsequent mental health problems encountered in those communities.[51] They reported the most common psychiatric disorders in the population to be adjustment disorders (39.6%), depressive episodes (22.6%), and other stress disorders (21.8%). Only 10 (3.3%) patients were found to suffer from PTSD, though PTSD-like symptoms were reported by more than two-thirds of the patients. Kar and colleagues reported on children after a super-cyclone in Orissa in 1999, and observed that a considerable proportion of children and adolescents exhibited post-traumatic symptoms.[52]

Anxiety and Panic Attacks—Anxiety disorders are common worldwide,[48] with the resource-poor countries face a high burden.[53] Anxiety disorders constitute a substantial proportion of the global burden of disease, and are projected by 2020 to form the second most common cause of disability while panic disorders are estimated to be the 27th leading cause of non-fatal burden in the world.[54] A panic disorder is described as one of the most intensely frightening, upsetting, and uncomfortable experiences of a person's life.[55] Both anxiety disorders and panic attacks are common reasons for availing of psychiatric emergency services in India.[16,17]

Post-Partum Psychosis—Post-partum psychosis is another area of concern and is a serious mental illness that can affect a new mother. The episode of psychosis usually begins within one to four weeks of delivery. A woman with post-partum psychosis may lose touch with reality, and have auditory hallucinations, delusions, insomnia, agitation, anger, and irrational guilt. Sit and colleagues observed that women who have postpartum psychosis need prompt treatment with rapid and accurate diagnosis to reduce the risk of harm from this behavioral emergency.[56] However, this has been a neglected area, with emergency medical services being seldom aware of its presence.[57,58]

Acute Psychosis—Acute psychosis is classified as a medical emergency requiring immediate and complete attention, the lack of identification of which can result in suicide, homicide, or other violence.[50] Since acute psychoses form the most common reason for emergency department visits, there have been several studies that have examined this kind of emergency. A study from India compared two groups of patients—acute remitting vs. non-remitting or schizophrenic psychoses, and reported that acute remitting psychoses showed an over-representation of females, a higher frequency of associated stress preceding the onset of psychosis, more often had an onset during the summer months, and/or had fever and childbirth preceding the onset of psychosis in a significantly higher proportion of patients.[59] In addition, antecedent fever also has been found to be an important biological correlate of acute brief psychosis in one case control study from Chandigarh.[60] When the short-term course and outcome of acute psychotic illnesses in a cohort of 91 patients—affective as well as non-affective, were studied over a 12-month period, non-affective (mainly schizophrenic) patients were found to be the predominant group (51%), followed by manic (26%), and depressive (19%) patients.

Overall, the acute psychoses group had an excellent short-term course and outcome, a result that held across all diagnostic groups and across both rural and urban settings.[61] In another study, acute psychoses formed approximatley 9% of all emergencies, requiring the emerging role of emergency psychiatric services in India.[19] Such ambulatory services already have proven to be useful on a pilot basis in a couple of metropolitan cities.[62,63]

Other Psychiatric Emergencies—Similarly, an overdose with barbiturates or benzodiazepines may cause ventilatory arrest, while antipsychotic drugs, at therapeutic as well as toxic doses, can cause acute, extra-pyramidal, adverse effects including dystonia, oculogyric crisis, torticollis, and akinesia. Akathisia is another common adverse effect of high-potency antipsychotic agents, resulting in an emergency. Neuroleptic malignant syndrome and serotonin syndrome are some other toxic conditions for which patient require immediate attention.[64]

Current Status of Management of Psychiatric Emergencies in India

Existing emergency services in India have failed to handle psychiatric emergencies adequately, primarily because of ignorance, and secondarily, due to lack of trained manpower. Sometimes emergency services have been misused to settle legal scores leading to gross violation of human rights.[65] Unlike other medical emergencies, the biggest barrier to the provision of specialized psychiatric emergency services seems to be the lack of clear-cut legal provisions for dealing with such patients. The compulsory detention and treatment of patients with acute manifestations of a behavioral disorder in India is governed by the Mental Health Act, 1987.[66] This act replaced the Indian Lunacy Act of 1912, which had earlier replaced the Indian Lunatic Asylum Act of 1858. Chapter IV of the Mental Health Act, 1987 deals with the procedures of admission and detention of the mentally ill in psychiatric hospitals. There are two provisions of admission detailed in this Section. The first provision is a voluntary admission, by request by the patient or the guardian of the patient, and when deemed necessary, by the attending psychiatrist. The second provision is more relevant for emergencies, as it deals with admissions under special circumstances; it provides for admission against the patient's will if an application is made by a relative of such a person in a prescribed format accompanied by two medical certificates by two medical practitioners deeming such an admission necessary. A similar application to a Magistrate for detention and treatment of the mentally ill person is an alternative.

Although there are rules that govern the admission of such patients who require treatment, the ground realities are quite different. Unfortunately, there are no guidelines or provisions under the Mental Health Act for crisis intervention to help those families who request emergency ambulance services to

escort or shift a violent patient to a psychiatric hospital. It has been noted that families often approach the nearest police station to help them transfer the disturbed person to a hospital, but often are ignored. In such instances, families are forced to file complaints against the individual for petty crimes, after which, police arrest the mentally ill person and have him/her referred to a psychiatric hospital.[66] This complicated and often inhumane approach only serves to increase the stigmatization of psychiatric illnesses. Fortunately, the use of specialized psychiatric emergency services can reduce and sometimes eliminate such approaches toward the management of behavioral emergencies.[62] As noted, a pioneering effort in this regard was initiated by Banyan, a non-governmental organization (NGO) working in Chennai, India.[63] The "Dial 100" service, in partnership with the city police, help to provide treatment to homeless mentally ill persons. However, this service was limited in accessibility and approach. The only other psychiatric emergency service in India is operated by the Karnataka State Mental Health Authority (KSMHA), Bangalore in association with several NGOs in the city.[62] This also is a small operation. It is operated by professionals with trained personnel. However, a state and nationwide emergency service that can cater to psychiatric emergencies on a scale similar to that of cardiovascular or traumatic, is required.

Limitations

This study is perhaps the first attempt to accurately document the emerging scenario of behavioral emergencies in India and the need to develop a specialized psychiatric emergency service. Although the authors have tried to include all pertinent studies in this review, it is possible that certain published or unpublished (but important) material may have escaped the attention of the reviewers. However, the authors believe that this number may be small and does not, in any way, change the focus of the paper—the current need for a psychiatric emergency service.

Conclusions

Behavioral emergencies in India are emerging as a major challenge for emergency service providers with the morbidity and mortality rate due to the rapid growth of various psychiatric conditions. Behavioral emergencies also constitute an important component of mental health, which by itself, is a neglected area in medical and public health practices, due to the related stigma and chronicity of treatment. It neither receives priority by professionals nor by family members, and hence, many individuals continue to suffer in silence. Although the recent deinstitutionalization movements have drawn attention to the role of emergency psychiatrists and ensured the continued importance of the psychiatric emergency services, there is a marked discrepancy in the amount of research in this area. [67,68] Although the findings are indicative of the urgent need for specialist psychiatric emergency services, challenges also are present in terms of understanding the problems related to its etiology, consequences, and utilization of services available. The huge gap between growing rates of mortality and morbidity of behavioral emergencies and number of services available in India only can be filled when policy-makers and health service providers join hands, and only then can the objectives of 'Health for All' be achieved.

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