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Clinical Diagnostic and Sociocultural Dimensions of Deliberate Self-Harm in Mumbai, India

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Patients' accounts complement psychiatric assessment of deliberate self-harm (DSH). In this study we examined psychiatric disorders, and sociocultural and cross-cultural features of DSH. SCID diagnostic interviews and a locally adapted EMIC interview were used to study 196 patients after DSH at a general hospital in Mumbai, India. Major depression was the most common diagnosis (38.8%), followed by substance use disorders (16.8%), but 44.4% of patients did not meet criteria for an enduring Axis-I disorder (no diagnosis, V-code, or adjustment disorder). Psychache arising from patient-identified sociocultural contexts and stressors complements, but does not necessarily fulfill, criteria for explanatory psychiatric disorders.

Deliberate self-harm contributes substantially to global mortality, accounting for an estimated 877,000 deaths by suicide in 2002 (World Health Organization [WHO], 2003). According to the most recently available data for India, 108,593 persons died by suicide in the year 2000, with a corresponding rate of 10.6 per 100,000. In the city of Mumbai 1,086 suicides were recorded in that year (Government of India, 2002). Although rates are difficult to determine because of ambiguity in the precise catchment area for which those suicides are reported, it is clear from these data that preventing suicide and deliberate self-harm (DSH) are high priorities for mental health policy in India, as they are throughout the world (Goldsmith, Pellmar, Kleinman, & Bunney, 2002; WHO, 2001).

In India, the influence of cultural values, social stigma, incentives to avoid medical-legal complications, and a poor infrastructure for documentation in some areas all contribute to serious underestimates of suicide and DSH. Persistent media reports and a heavy clinical burden, however, indicate the priority of suicide and suicidal behavior. At the KEM Hospital in Mumbai, the largest tertiary-care hospital in the country's largest city, 432 patients were referred to psychiatry for DSH in 2003; a total of 6,931 new pa-

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tients came to the psychiatry outpatient clinic for all clinical problems.

In the effort to explain these suicides, research suggests that about half of the people who ultimately kill themselves have a history of DSH, and 20–25% of persons who die by suicide may have a history of DSH within the previous year (Foster, Gillespie, & McLelland, 1997). Considering the potential benefits of selected strategies, Lewis, Hawton, and Jones (1997) estimate that reducing suicide risks among persons with a history of DSH by 25% would reduce overall suicide rates by up to 5.8%. This suggests a need to clarify the contexts and triggers of such behavior. In addition to the priority of reducing mortality from suicide, analysis of underlying problems and triggers associated with suicidal behavior identifies priority issues motivating self-harm that should also be matters of concern for clinical practice and broader interests of mental health policy beyond suicide prevention.

Recent literature has begun to acknowledge the importance of cultural differences in the motivation of suicidal behavior. Questions have arisen about differences in the relative emphasis on psychopathology in much of the Western literature, which typically attributes 90% of suicides to mental disorders (Goldsmith et al., 2002), and contradictory findings from Asian research, which emphasizes social contexts and stressors. Indian studies have long emphasized such stressors, rather than psychopathology. Bhatia, Khan, Mediratta, and Sharma (1987) emphasized the influence of humiliation, shame, economic hardships, and family discord. Gehlot and Nathawat (1983) identified social stressors arising from family conflict as the most important contributor to suicidal behavior in India. More recently, Gururaj and Isaac (2001) completed an in-depth psychological autopsy study of 30 patients, reporting a diagnosis of depression (and no other psychiatric diagnoses) in only 43.3%, based on extensive follow-up studies with families and examination of all available police records and other relevant data. Findings emphasized social stressors, including financial problems, family conflicts, illicit relationships of a spouse, serious illness, and frustrated teenage romance as specified cases. Research in China also emphasizes the importance of social rather than psychopathological contributions to suicidal behavior (Zhang, Meng, & Gong, 2000). The relative differences and the importance of understanding local determinants of suicidal behavior highlight the need for cross-cultural studies attentive to both sociocultural determinants of suicide and the role of psychopathology.

The present research responds to this need for integrated study of suicidal behavior from complementary sociocultural and clinical perspectives. Combining cultural epidemiological and clinical psychiatric approaches, this study aimed to identify and examine the relationship between clinical features and patient-perceived determinants of suicidal behavior, indicated by patients' accounts of underlying problems, their causes, and trigger events. Assessment of these complementary clinical-diagnostic and patient-narrative frameworks required integration of anthropological and epidemiological approaches that characterize the transdisciplinary approach and methods of cultural epidemiology (Weiss, 1997, 2001). With a focus on affected persons, the epidemiology is concerned with the distribution of explanatory patient-identified problems, perceived causes, and triggers of DSH. Our analysis is also concerned with the relationship between such findings and findings from standard psychiatric assessment.

METHODS

This study was conducted at the KEM Hospital, which provides primary and referral services at low cost or free of charge to a diverse cross-section of patients from the city and surrounding region. All patients over 18 years of age without overt psychotic symptoms who presented for treatment in the KEM Hospital casualty ward after alleged DSH were recruited for study. The assessment of DSH was based on the account of the patient and either a relative or others

who brought the patient to treatment. This formulation of DSH was based on a broad range of behaviors from suicidal gestures and manipulation to serious attempts (Diekstra & Gamefski, 1995), and it was guided by the WHO definition of *parasuicide* used in WHO/EURO studies of parasuicide (Platt et al., 1992). Patients were interviewed as soon as possible, based on medical status and ability to engage in the interview, over a period ranging from 4 to 8 days after their DSH event. Interviews were conducted in project study rooms of the Department of Psychiatry with the Explanatory Model Interview Catalogue (EMIC) interviews for cultural epidemiological study (Weiss et al., 1992) and with the Structured Clinical Interview (SCID) for Axis I disorders for psychiatric diagnostic assessment (First, Spitzer, Gibbon, & Williams, 2001).

Instruments

EMIC interviews are instruments for assessing representations of designated health problems, in this case DSH, from the perspective of affected persons, their family, or community (Weiss, 1997). The focus of EMIC interviews differs from instruments for psychiatric epidemiology, such as the SCID, which are primarily concerned with diagnosing psychiatric disorders. Versions of the EMIC and SCID had been adapted, translated, and used in research at the KEM Hospital for prior cultural epidemiological studies of leprosy and psychiatric disorders (Weiss et al., 1992), and they have also been used in other psychiatric studies in India (Raguram, Raghu, Vounatsou, & Weiss, 2004; Raguram, Weiss, Keval, & Channabasavanna, 2001) and elsewhere in Asia, Europe, and North America (Henningsen, Jakobsen, & Weiss, 2005; Jadhav, Weiss, & Littlewood, 2001; Lee, Rodin, Devins, & Weiss, 2001). Based on this experience, an EMIC interview (Parkar & Weiss, 1999) was developed for this study to assess patterns of distress (PD) patients identified as related underlying problems, their perceived causes (PC), and prior help seeking (HS). A pilot study of 60 patients guided revisions that produced the final version used in this study. Both EMIC and SCID interviews were administered in one of the two local languages of Mumbai (Marathi and Hindi), and for several patients, much of the interview was conducted in English.

Training Research Assistants

Researchers with clinical training and experience in psychiatry administered the EMIC and SCID interviews. Training included preliminary explanation of aims and objectives and both didactic and discussion sessions to ensure familiarity with the concepts and relevant literature. With acquisition of pertinent skills for these interviews and assessments, a preliminary exercise in which research assistants evaluated 10 cases from a routine clinical perspective was followed by pilot interviews with the EMIC. Training for use of the SCID also made use of a didactic video and printed training materials prepared by the developers of the SCID.

Data Collection

Research interviews with the EMIC and SCID were typically administered over one to three sessions, based on the condition and endurance of the patients. The EMIC interview elicited both narrative accounts and categorical codes specifying categories of distress, perceived causes, triggers, and prior help seeking. The research ethics committee of KEM Hospital approved the research protocol and associated instruments. After obtaining informed consent, researchers interviewed consenting participants with these instruments.

Analysis

The EMIC interview data set for cultural epidemiological study consists of coded variables for quantitative analysis and narrative qualitative data, coded for thematic con-

tent with reference to specific questions in the interview. Cultural epidemiological variables in the quantitative data set in key sections of the interview specified underlying problems and categories of distress, perceived causes, and prior help seeking. Trigger events precipitating DSH were post coded from narratives.

Data for quantitative analysis from SCID and EMIC interviews were entered in a computer with the Epi Info (version 6.04d) data entry module using a check file for logic and range checks, and double-entry verification. These data were imported into SAS for analysis. Frequencies of reported cultural epidemiological variables and the clinical epidemiological profile of psychiatric disorders were tabulated. Grouped categories based on shared meanings of precoded categories were also computed from responses to open-ended queries (designated spontaneous responses) and from categories identified in response to probe questions about categories not mentioned spontaneously. These EMIC interview data were tabulated for individual and grouped categories. Cultural epidemiological variables for PD, PC, triggers, and self-help were each analyzed to specify the frequency of responses. Frequencies of psychiatric diagnoses associated with each category of response were tabulated with particular attention to unipolar (major and other) depression, substance use disorders, adjustment disorders, V-codes, and no diagnosis. Analysis identified cultural epidemiological variables associated with higher or lower rates of these disorders.

Qualitative data were managed and analyzed with MAXqda software, which provided access to coded text segments from selected records, based on values of relevant variables in the data set. Importing variables from the quantitative data set in Epi Info and SAS made it possible to select records for analysis, and to examine thematically coded segments with reference to each question of the EMIC interview that elicits a narrative response. These qualitative data identified sociocultural themes from patients' narrative accounts in the EMIC interviews.

RESULTS

Sample Characteristics

Interviews were conducted over a 6-month period from September 2000 to February 2001. During this period 208 patients fulfilling criteria were identified, and 12 declined to participate in the study (5.8%). Consequently, the sample consisted of 196 patients at least 18 years of age, 93 women and 103 men. The age and sex distribution is summarized in Table 1. Women with DSH were relatively younger than men with DSH in a sample with a mean age of 26.4 years. Most patients were Hindu (88.3%), Marathi-speaking (70.9%), and had at least a high school education (63.2%). Approximately half the sample had never been married (51.2%). The vast majority of patients presented for treatment in emergency services with a history of self-poisoning (either with an insecticide or rat poison) (74.0%), or medication overdose (23.5%). Remaining infrequent presentations included self-cutting, burning, and electrical shock.

Diagnostic Profile

DSM-IV psychiatric diagnoses, based on SCID interviews, are summarized in Table 2. Patients identified with V-codes, no diagnosis, and adjustment disorders (with no other Axis I disorder) accounted for 44.4% of patients studied. Among the rest, 17 patients with other Axis I disorders had dual diagnoses. Depressive disorders were most frequent (43.9%), with unipolar major depression predominating (38.8). Among the 16.8% with disorders of substance use, most were alcohol dependent. Although patients with overt psychotic symptoms were excluded from the study, three patients were found to have psychotic disorders when assessed with the SCID interview.

Sociocultural Contexts of DSH

Illness narratives elicited in the EMIC interviews elucidated several characteristic

TABLE 1
Age and Sex of Patients Studied after Deliberate Self-Harm

Age range (years)	Men		Women		Total	
	Mean (±sd): 28.3 (9.47) Range: 18–55		Mean (±sd): 24.4 (7.25) Range: 18–56		Mean (±sd): 26.4 (8.69) Range: 18–56	
	Number	Percent	Number	Percent	Number	Percent
18–24	48	46.6	60	64.5	108	55.1
25–30	21	20.4	18	19.4	39	19.9
31–36	19	18.5	10	10.8	29	14.8
37–42	4	3.9	3	3.2	7	3.6
43–48	3	2.9	0	0	3	1.5
49–54	7	6.8	1	1.1	8	4.1
55–60	1	1	1	1.1	2	1
All	103	100	93	100	196	100

TABLE 2
Diagnosis of Patients after Deliberate Self-Harm

Diagnosis[1]	Total ($N = 196$)	
	Number	Percent
Unipolar major depression	76	38.8
Other depression	10	5.1
Substance abuse and dependence	33	16.8
Psychosis[2]	3	1.5
Panic disorder	2	1.0
Pathological gambling	1	0.5
Somatoform pain	1	0.5
Adjustment disorder	45	23.0
V-code[3]	22	11.2
No diagnosis	20	10.2
Total[4]	213	108.7

[1]*DSM-IV* Axis I diagnosis based on SCID-IV interview.

[2]Psychosis includes paranoid schizophrenia and brief psychotic disorder.

[3]V-codes are used in *DSM-IV* for relationship problems, academic problems, and additional conditions that may be a focus of clinical attention.

[4]The total number of diagnoses is greater than the number of subjects because of a dual diagnosis for some patients. Categories of adjustment disorders, V-code, and no diagnosis were exclusive of all other diagnoses.

thematic contexts. These included mental turmoil and a range of socially and culturally distinctive family problems, typically involving spouses, in-laws, and parent-child conflicts. Unfulfilled expectations at work or failure in school played an important role. Alcohol and substance abuse took a toll not only on the persons abusing the drugs, but also on their wives. Chronic illness and serious disease were another important focus of many patients' problems. Some patients indicated they did not know about and had not considered help that might be available from health and community support services. The following case vignettes illustrate the nature of patient-identified problems, and how patients related them to their suicidal behavior.

In-Laws and Mental Illness. Patients frequently related their problems with in-laws to their DSH, sometimes associated with other issues. A middle-aged woman with a history of schizophrenia treated at KEM Hospital acknowledged the impact of both her psychiatric and her family problems, but emphasized the latter. After she was evicted from her in-laws' home and sent to her brother, who arranged for her to be treated, she explained:

> My illness has affected my married life, but my in-laws are a bigger problem for me. They make my life miserable and

> no longer worth living. My husband tells me not to take tablets, because he feels I will not be able to bear a child. Then my illness gets worse . . . Although my mental illness is a problem, I still feel my in-laws and their attitudes are more disturbing. I can take tablets for my illness, but what can I do to cope with these people?

Family Rejection of Intercaste Marriage. A young woman whose parents forbade her to marry outside their caste did so anyway. Feeling guilty about that, when her mother developed a serious heart problem, the girl blamed herself. She feared she might be responsible for her mother's death: "My parents refuse to accept my marriage. They don't even talk to me. Many people have inter-caste marriages, and ultimately they are accepted. But with me, nothing like that is happening. Now I have no hope, and I also feel guilty for all of this and letting them down."

Unemployed and Feeling Useless. A 30-year-old man explained his DSH as the result of unfulfilled obligations to his mother. He felt helpless and a burden on his family. "I have been out of work for 2 years. At this age, I remain a burden on my old mother, who still feeds me. I don't like to eat without earning. I hate myself for this. Whenever I see movies like *Saheb* (*Boss*) and *Kaamchor* (*Derelict*), I think I am like those desperate characters and feel sorry for myself."

School Failure. A 19-year-old boy who failed his twelfth standard examination four times explained that he had tried to take his life because he felt he had let down his parents and friends. He explained that he no longer had any confidence in himself: "This was my fourth failure. I was overwhelmed by sadness and hopelessness. Now I thought, I'll never make it through! I felt guilty for not living up to the expectations of my family and friends. . . . Will I ever be able to achieve success at this rate? My mind was all confused—nothing made any sense."

Marital Problems with an Abusive, Suspicious, Alcoholic Husband. A young woman explained her difficult marriage made her life miserable and not worth living. Her husband, an alcoholic, was unemployed and he beat her. She struggled to support her children, but ultimately as she felt she was losing control, she gave up.

> My husband thinks I go around with other men. He insults me with foul language and hits me. When he gets angry, he drives me away from the house. You tell me, where can I go with five children? My husband does not work, and there is hardly any money for us to eat. Somehow, I manage. He demands money from me, and when I refuse to give it, he beats me. Ever since we were married, my mother-in-law and husband both have made my life hell. I am telling you, doctor, a woman cannot live as she likes after marriage. Everything is finished. It is better to die than live.

Alcohol Ruining a Man's Life. Most patients readily described problems that led them to drink, but a few also acknowledged the problems caused by alcohol: "My drinking has led to many problems in our life. My wife and mother don't take me seriously. My financial problems are increasing. Sometimes I feel my family ignores me. My alcohol problem has turned me into a very different person."

Aches and Pains, and Overwhelming Responsibilities. Somatic complaints that patients identified as causes of their DSH typically included fatigue, weakness, and sleep problems. An unmarried 20-year-old woman suffering from joint pains felt helpless, pressured by work, and burdened by familial responsibilities.

> I have had body aches for so many years. Doctors said I have wind trouble (*vatacha traas*). Once I was admitted for that to the hospital. I am taking treatment. Three or four days ago, I had body aches. I was fed up with all this, really tired of it. So I took Tik-20 [brand of organophosphorus household insecticide], and then felt giddy. I have to work at home and take care of my brother and father.

Impact of Serious Disease on Unfulfilled Expectations. A young man suffering from tuberculosis described the social problems and mental turmoil resulting from his illness.

> Since March 1999, I have really begun to hate myself for this illness. I have TB, and because of it, in March 1999 I could not attend the railway job interview. I also failed my final HSC examination for the second time. I felt pathetic. I am a national-level Kabbadi [indigenous Indian sport] champ, but with this illness, which makes me so weak, and with all these problems, I am completely exhausted. What is the point in carrying on?

Too Ashamed to Seek Help. A young married man tearfully explained his DSH resulted from his wife's persistent abuse, which social conventions assuming and requiring male dominance made even more unbearable. Embarrassed to disclose that she insulted him so fouly and hit him, he questioned his own masculinity: "Who can I go to for help for this problem? It is so embarrassing—a man being harassed by his wife! This is actually the first time that I am telling anyone about this problem."

Cultural Epidemiology with Reference to Psychiatric Diagnosis

Categories for cultural epidemiological study were extracted from case studies and patients' narratives. To specify the distribution of relevant features of DSH, categories of the experience of the underlying problems, perceived causes of the DSH event, immediate triggers precipitating the event, and prior help-seeking efforts for the underlying problems were identified. The distribution of these categories of DSH-related experience, meaning, and behavior, and their relationship to key psychiatric diagnoses are presented in this section.

Patterns of Distress. Unlike our outpatient psychiatric clinic in Mumbai, where depressive symptoms are reported less frequently than somatic symptoms, fewer DSH patients reported somatic symptoms (51.0%). Nearly all patients (95.9%) reported depressive symptoms followed by miscellaneous (88.3%) and anxiety group symptoms (59.7%). The most frequently reported individual categories were sadness, helplessness, worthlessness, sleep disturbance, and guilt. Although depressive group symptoms were associated with depression (Table 3), for a substantial portion of the sample, these core symptoms of depression were associated with no Axis I diagnosis: 39.3% of patients reporting sadness, 37.4% reporting helplessness, and 33.8% reporting worthlessness. The lower rate of patients reporting other categories of distress with depression (29.4%) was suggestive, but not significant ($p = 0.11$). These problems included self-directed anger, and frustration with social and situational stressors, such as school failure, infertility, feeling cheated, and so forth. Commonly reported somatic symptoms were associated with higher rates of major depression than core depressive symptoms.

Perceived Causes. The most frequently reported perceived causes were under the group headings of social (89.3%) and psychological categories (84.7%) (Table 4). The most frequently reported individual categories were mental turmoil (81.1%), financial problems (41.3%), conflicts with in-laws (37.2%), and marital problems (20.9%). Grouped categories most frequently associated with major depression were injury and illness, fate, and prior deeds or karma. Chronic illness was the cause for which major depression was most frequent (80.0%). Others that were associated with high rates of major depression included fate, financial problems, and prior deeds. Each of these suggests a problem with which individuals feel they cannot cope, and for which no solution appears possible. Perceived causes that were most often associated with no Axis I disorder included bereavement, personality problems, and problems with a spouse.

Triggers. Interpersonal conflicts were clearly the most frequently reported group of triggers leading to DSH (67.9%) (Table 5). Other groups of frequently reported triggers

TABLE 3
Distribution of Diagnoses Among Patients Reporting Various Categories of Distress

Symptoms and categories of distress	All patients		Percentage of patients with specified diagnosis reporting category					
	Number	Percent	Maj Depr	Other Depr	Subst Use	Adj Dis	V-Code	No Diag
Total Sample Reference	196	100	38.8	5.1	16.8	23.0	11.2	10.2
FEELINGS & MOOD	188	95.9	40.4*	5.3	16.5	23.9	10.6	9.6*
Sadness	163	83.2	46.6**	6.1	16.0	25.2	9.8	4.3**
Helplessness	147	75.0	50.3**	6.8	15.0	26.5*	9.5	1.4**
Worthlessness	133	67.9	51.9**	6.8	15.0	22.6	8.3	3.0**
Suffocation	10	5.1	90.0**	0.0	10.0	10.0	0.0	0.0
Guilt	120	61.2	38.3	5.0	17.5	24.2	12.5	13.3
BODILY COMPLAINTS	100	51.0	56.0**	8.0	16.0	22.0	5.0**	2.0**
Fatigue	99	50.5	61.6**	7.1	18.2	15.2**	6.1*	3.0**
Physical Pain	72	36.7	63.9**	9.7*	13.9	16.7	2.8**	1.4**
Giddiness (*chakkar*)	51	26.0	64.7**	11.8*	13.7	11.8*	2.0*	3.9
Burning	13	6.6	76.9**	7.7	15.4	7.7	0.0	0.0
Tingling	39	19.9	61.5**	15.4**	12.8	17.9	0.0*	0.0*
Other somatic	63	32.1	61.9**	7.9	17.5	19.0	6.3	1.6**
Sleep disturbance	130	66.3	55.4**	6.2	21.5*	25.4	1.5**	1.5**
STRANGE THINKING-BEHAVIOR	10	5.1	30.0	10.0	40.0*	10.0	0.0	0.0
ANXIETY	117	59.7	56.4**	7.7*	13.7	22.2	9.4	1.7**
Anxiety	84	42.9	59.5**	7.1	15.5	22.6	8.3	1.2**
Suicidal ideation	84	42.9	61.9**	9.5*	10.7*	21.4	6.0*	1.2**
OTHER	173	88.3	41.0	5.2	19.1*	22.0	11.0	8.7*
Eating disturbance	64	32.7	64.1**	10.9**	9.4	18.8	3.1*	3.1*
Impaired memory	42	21.4	73.8**	9.5	9.5	14.3	0.0**	0.0*
Sensitive to rejection	41	20.9	51.2	4.9	17.1	26.8	7.3	4.9
Interpersonal	68	34.7	47.1	5.9	17.6	20.6	11.8	2.9*
Disturbed sense of self	42	21.4	52.4*	7.1	26.2	26.2	11.9	0.0*
Social isolation	21	10.7	61.9*	9.5	9.5	28.6	4.8	0.0
Stigma	13	6.6	53.8	23.1**	7.7	7.7	7.7	0.0
Hostility	81	41.3	39.5	8.6	17.3	19.8	9.9	9.9
Substance abuse	22	11.2	50.0	4.5	77.3**	13.6	0.0	0.0
Other	51	26.0	29.4	0.0	19.6	15.7	13.7	19.6*

Note. Categories of distress and diagnoses reported by more than 5% of respondents are listed.
*$p < .05$ and **$p < .01$ based on table scores computed with estimate of common relative risk.

included unfulfilled expectations (39.8%) and victimization (32.1%). Although mental turmoil was the most frequently reported perceived cause, mental health problems were infrequently identified by patients as causes or triggers of the DSH event, as illustrated by the case vignette on in-laws and mental illness. Among the triggers associated with major depression, one's own medical illness (81.3%), overwhelming sadness (78.6%), and financial problems (62.5%) were reported most frequently. Living with someone who abuses drugs was also associated with major depression (69.2%). Triggers least often associated with enduring Axis I disorders (which here does not include adjustment disorders) were related to interpersonal conflict, especially with siblings, parents, and spouse.

Help Seeking and Self-Help. The vast majority of patients (81.6%) had not previously sought any professional or other help outside their home, apart from the assistance of friends or family. Among the rest who had sought external help, most consulted a private general practitioner (5.1%) or a psychiatrist (4.6%). Fewer had consulted other sources of help, including government hospital clinics and uncredentialed doctors (3.6% each); Ayurvedic practitioners and healing temples (2.0% each); astrologers, faith healers, and

TABLE 4
Distribution of Diagnoses for Various Categories of Perceived Causes

	All patients		Percentage of patients with specified diagnosis reporting category					
Perceived causes	Number	Percent	Maj Depr	Other Depr	Subst Use	Adj Dis	V-Code	No Diag
Total Sample Reference	196	100	38.8	5.1	16.8	23.0	11.2	10.2
INGESTION	43	21.9	41.9	2.3	65.1**	18.6	0.0**	2.3*
Alcohol	38	19.4	39.5	0.0	71.1**	18.4	0.0*	2.6
Prescribed medicine	2	1.0	100.0	50.0**	0.0	0.0	0.0	0.0
INJURY-MEDICAL-SURGICAL	25	12.8	68.0**	16.0**	20.0	8.0	0.0	0.0
Prior or chronic illness	15	7.7	80.0**	20.0**	13.3	0.0*	0.0	0.0
Weakness	11	5.6	54.5	9.1	27.3	9.1	0.0	0.0
SOCIAL	175	89.3	40.0	5.7	17.7	24.6	9.7	9.7
Failed romance	21	10.7	42.9	0.0	19.0	38.1	9.5	0.0
Problem with spouse	41	20.9	39.0	7.3	24.4	12.2	7.3	19.5*
Family-in laws	73	37.2	38.4	8.2	19.2	26.0	8.2	4.1*
Work	34	17.3	50.0	5.9	41.2**	20.6	2.9	0.0*
Unemployment	37	18.9	45.9	2.7	13.5	32.4	8.1	2.7
Breakdown of family	17	8.7	35.3	11.8	23.5	29.4	5.9	11.8
Other interpersonal problems	41	20.9	31.7	2.4	22.0	22.0	22.0*	9.8
Bereavement	10	5.1	30.0	0.0	0.0	10.0	30.0	30.0*
Financial	81	41.3	58.0**	6.2	22.2	19.8	4.9*	4.9*
PHYSICAL-PSYCHOLOGICAL ABUSE	17	8.7	29.4	11.8	17.6	29.4	5.9	5.9
Victim of violence	14	7.1	28.6	7.1	21.4	28.6	7.1	7.1
MAGIC-SPIRITS	23	11.7	43.5	17.4**	8.7	21.7	0.0	13.0
Sorcery	15	7.7	53.3	20.0**	13.3	20.0	0.0	6.7
Demons	11	5.6	18.2	18.2*	0.0	27.3	0.0	18.2
DEEDS-KARMA	30	15.3	56.7*	6.7	16.7	13.3	3.3	6.7
Bad deed in previous life (*karma*)	18	9.2	55.6	11.1	16.7	16.7	5.6	0.0
PSYCHOLOGICAL	166	84.7	41.6	5.4	18.1	23.5	10.2	9.6
Mental turmoil	159	81.1	43.4**	5.7	18.9	24.5	9.4	6.9**
Personality	33	16.8	18.2**	3.0	24.2	24.2	15.2	24.2**
FATE	46	23.5	58.7**	6.5	8.7	15.2	4.3	8.7
Fate	46	23.5	58.7**	6.5	8.7	15.2	4.3	8.7
MISCELLANEOUS	46	23.5	28.3	6.5	6.5*	15.2	17.4	19.6*
Other	46	23.5	28.3	6.5	6.5*	15.2	17.4	19.6*

Note. Categories of perceived causes and diagnoses reported by more than 5% of respondents are listed.

*$p < .05$ and **$p < .01$ based on table scores computed with estimate of common relative risk.

TABLE 5
Distribution of Diagnoses for Triggers of DSH

Triggers	All patients		Percentage of patients with specified diagnosis reporting category					
	Number	Percent	Maj Depr	Other Depr	Subst Use	Adj Dis	V-Code	No Diag
Total Sample Reference	196	100	38.8	5.1	16.8	23.0	11.2	10.2
PHYSICAL HEALTH	23	11.7	60.9*	8.7	4.3	13.0	13.0	4.3
Own illness	16	8.2	81.3**	12.5	0.0	0.0*	6.3	0.0
MENTAL HEALTH	33	16.8	51.5	9.1	15.2	15.2	9.1	3.0
Tension	10	5.1	50.0	10.0	30.0	10.0	10.0	0.0
Sadness	14	7.1	78.6**	14.3	14.3	7.1	0.0	0.0
Bereavement	5	2.6	20.0	0.0	0.0	20.0	40.0*	20.0
SUBSTANCE ABUSE	46	23.5	45.7	2.2	60.9**	13.0	2.2*	4.3
Substance abuse (another)	13	6.6	69.2*	0.0	7.7	15.4	0.0	7.7
Substance abuse (self)	31	15.8	38.7	3.2	87.1**	12.9	0.0*	3.2
EXPECTATIONS	78	39.8	50.0**	2.6	12.8	29.5	9.0	6.4
Job or business (self)	41	20.9	43.9	2.4	14.6	43.9**	2.4*	2.4
Financial problem	32	16.3	62.5**	3.1	18.8	25.0	3.1	6.3
Other unfulfilled expectations	10	5.1	60.0	0.0	0.0	30.0	0.0	10.0
INTERPERSONAL CONFLICT	133	67.9	32.3**	5.3	18.0	21.8	12.8	13.5
With parent	42	21.4	31.0	0.0	19.0	19.0	21.4*	11.9
With in-laws	19	9.7	42.1	15.8*	5.3	31.6	5.3	5.3
With spouse	40	20.4	37.5	10.0	27.5*	12.5	5.0	17.5
With siblings	20	10.2	20.0	0.0	10.0	25.0	15.0	30.0**
Romantic problem	17	8.7	47.1	0.0	11.8	29.4	11.8	0.0
Other interpersonal problem	17	8.7	29.4	5.9	11.8	29.4	17.6	5.9
VICTIMIZATION	63	32.1	42.9	6.3	9.5	20.6	9.5	14.3
Physical abuse	21	10.7	47.6	14.3*	4.8	9.5	14.3	9.5
Verbal abuse	26	13.3	42.3	3.8	11.5	19.2	15.4	15.4
Other victimization	14	7.1	42.9	14.3	0.0	21.4	7.1	14.3

Note. Categories of triggers and diagnoses reported by more than 5% of respondents are listed.
*$p < .05$ and **$p < .01$ based on table scores computed with estimate of common relative risk.

local herbal healers (1.5% each); and homeopaths and religious leaders (1.0% each). Because so few patients had consulted health care providers, we did not analyze the relationship between prior help seeking experience and psychiatric diagnosis.

The most frequently reported category of self-help was "none" (37.8%), followed by problem-specific problem-solving efforts (35.7%), such as job hunting; trying to improve performance in school, college, or work; or trying harder to get along with others (Table 6). No one reported use of the suicide prevention telephone hotline services that are available in Mumbai. Patients who sought help from friends and colleagues, or from prayer or visiting a temple, were more likely to fulfill criteria for major depression. The patients with substance use disorders most typically reported they had tried to change their lifestyle. A diagnosis of major depression was particularly likley to motivate some kind of self-help seeking and less likely to be associated with no help seeking. Such patients who reported doing nothing were

most likely to be identified with no diagnosis from assessment with the SCID.

DISCUSSION

Our findings confirm the relevance of psychiatric disorders to DSH—especially depression and substance use disorders. The findings, however, also show that focusing exclusively on psychiatric diagnosis fails to explain the contexts of risk and vulnerability that motivate suicidal behavior for many patients. A substantial subset (44.4%) either did not meet criteria for an enduring, and hence explanatory, Axis I disorder that would constitute a suitable target for case finding and treatment; they qualified either for no diagnosis, a V-code, or an adjustment disorder. Other considerations clearly require attention for these patients and for comparable persons who do not meet criteria for Axis I disorders but are at risk for suicidal behavior in the general population.

Experience in clinical practice also indicates how social and patient-perceived problems interact with psychopathology. This interaction is illustrated by our case narrative of a woman acknowledging the role of both her mental illness (schizophrenia) and family conflicts; she regards the latter as more formidable. Focusing on Axis I clinical disorders does not necessarily constitute adequate treatment for a suicidal patient, and clarifying the role of Axis II disorders is even more problematic. Although consideration of personality disorders for patients in our sample may be also relevant, owing to difficulties adapting the SCID-II and other structured assessments of personality disorders for transcultural studies, we did not present findings from this assessment in the results section. We made these diagnoses, however, based on clinical assessment according to *DSM-IV* criteria, but not with a structured interview. Among the 87 patients either with no diagnosis, adjustment disorder, or V-code, 49 (56.3%) were diagnosed with a cluster B personality disorder, and 4 (4.6%) with a cluster C personality disorder. Although notable for reference, we share the misgivings discussed by Linehan, Rizvi, Welch, and Page (2000) about a fundamental problem of relating personality disorders to suicidal behavior, inasmuch as the behavior itself is regarded as an indication of the disorder. Further study of the cultural epidemiology of suicidal behavior with respect to Axis II disorders is warranted but beyond the scope of this report.

TABLE 6
Distribution of Diagnoses for Categories of Self-Help Before DSH

	All patients		Percentage of patients with specified diagnosis reporting category					
Self-Help Categories	Number	Percent	Maj Depr	Other Depr	Subst Use	Adj Dis	V-Code	No Diag
Total Sample Reference	196	100	38.8	5.1	16.8	23.0	11.2	10.2
Change lifestyle	23	11.7	52.2	4.3	43.5**	17.4	13.0	4.3
Talk with close family	31	15.8	41.9	6.5	12.9	19.4	9.7	9.7
Talk with friends and colleagues	37	18.9	59.5**	10.8	16.2	16.2	5.4	8.1
Prayer, temple, or fast	21	10.7	57.1	4.8	14.3	19.0	0.0	9.5
Other problem-solving efforts	70	35.7	52.9**	5.7	15.7	21.4	11.4	2.9**
None	74	37.8	23.0**	4.1	13.5	24.3	10.8	23.0**

Note. Categories of perceived causes and diagnoses reported by more than 5% of respondents are listed.

*$p < .05$ and **$p < .01$ based on table scores computed with estimate of common relative risk.

Among findings from our analysis of cultural and psychiatric epidemiological data, the somatic focus of depression was notable. Compared to the rate of major depression in the overall sample (38.8%), rates of depression were particularly high for the group of patients reporting somatic patterns of distress (56.0%), for one's own disease as a trigger of DSH (81.3%), and for prior illness as a perceived cause (80.0%). Other factors, however, operated independently of an association with depression. Among patients who identified bereavement as a PC, the percentage with depression (30.0%) and substance use disorders (0.0%) was less than for the total sample. The relationship of this factor to DSH appears to operate independently of these diagnoses. Uncomplicated bereavement, however, is the only situational stressor that specifically excludes a diagnosis of major depression, according to *DSM-IV*, and with respect to suicidal behavior, this may be misleading.

Substance use disorders as risk factors for suicidal behavior have been widely acknowledged (Beck & Steer, 1989; Harris & Barraclough, 1997; Marttunen, Aro, Henriksson, & Lonnquist, 1991). We also found that the impact of such disorders in our sample affected not only the substance abuser, but also others in the family (6.6%), in particular wives of substance-abusing men. Such patients were more likely to fulfill criteria for major depression (69.2%) than the overall sample.

The higher percentage of men (52.6%) in our sample is at odds with expectations of more women with DSH and more men with suicide. Inasmuch as we sampled consecutive patients, and the study refusal rate was low (5.8%, 7 women and 5 men), the finding cannot be attributed to sampling bias. Clinical data at KEM Hospital show higher rates of men presenting for treatment of other conditions, as well. One may speculate that this may result from a large population of male laborers using KEM Hospital services. Other studies, however, have noted that the preponderance of women with suicidal behavior presenting for treatment is not universal, and in many centers "the ratio of females to males appears to be declining in suicide attempts" (Kerkhof, 2002). It has also been noted that for suicidal behavior in Asia the ratio of females to males is lower (WHO, 2001). Even in Europe, in the sample in the WHO/EURO study of parasuicide, cases in Gent, Belgium, consisted of 54% men (Hjelmeland et al., 2002).

The higher than expected ratio of males to females in our study indicates the need for more careful gender analysis, beyond the scope of this report, considering both the clinical epidemiology of other conditions treated at the hospital and other factors that may explain the "missing" women in our sample. Such considerations should consider vulnerability to the impact of stigma, which may increase the threshold for help seeking among women to avoid disclosure.

Cross-Cultural Differences in the Focus on Diagnosis and Social Stressors

A recent monograph published by the U.S. Institute of Medicine acknowledges that the emphasis on psychiatric diagnostic risk factors in North America and Western Europe may not be valid globally. Although the authors attribute 90% of suicides to mental disorders in the United States, they note that sociocultural stressors have been emphasized by investigators in various countries of Asia (Goldsmith et al., 2002, p. 69). In China, for example, higher rates of suicide than the United States appear to coexist with lower rates of mental illness. Government of India statistics identify mental illness (4.9%) and drug abuse or addiction (1.0%) as less frequent causes of suicide than studies emphasizing psychiatric risk factors would lead us to expect (Government of India, 1999). Studies of suicide in India have found rates of depression similar to our findings for DSH. As noted in our introduction, Gururaj and Isaac (2001) retrospectively diagnosed major depression in 43.3% of the 30 cases they studied, and no other psychiatric disorders.

The WHO/EURO study of parasui-

cide was concerned with various aspects of suicidal behavior, including sociodemographic features, methods, possible risk factors (e.g., unemployment and physical illness [De Leo et al., 1999]), and the role of intent or motivation. Referring to Shneidman's (1985) discussion of motivation, Hjelmeland and colleagues (2002) focused on intent, which they considered an equivalent term, in their analysis of data from 14 countries in the WHO/EURO study of parasuicide, obtained with The European Parasuicide Interview Schedule (EPSIS I and II; Platt et al., 1992). They identified five factors from a principal components analysis to specify distinctive features of suicidal behavior with reference to intent: care seeking, influencing others, temporary escape, final exit, and loss of control. Although these factors say little about the sources and nature of the underlying psychache leading to suicidal behavior, they constitute an explanatory psychological framework for study of the logic of suicidal behavior. This framework complements professional psychiatric assessments that tend to disregard such a logic by associating suicidal behavior with psychopathology. Hjelmeland et al. found that the profile of these various aspects of intent was relatively consistent in all 14 countries in their study.

Although intent and psychopathology are both frequently considered in studies of risk factors (Scocco, Marietta, Tonietto, Della Buono, & De Leo, 2000), it is more difficult to study intent of people who have died by suicide than for patients surviving suicidal behavior. Consequently, psychological autopsies of deaths by suicide typically focus on psychopathology. Noting the younger profile of Indian suicides, Vijayakumar and Rajkumar's (1999) urban case-control study in Chennai, India, identified the following risk factors for suicide: history of an Axis I disorder, positive family psychiatric history, and unspecified life events. Like the WHO/EURO analyses of intent, their conclusions emphasized the consistency of these risk factors across cultures.

Our focus on social suffering, patient-identified problems, causes, and triggers of suicidal behavior is responsive to cultural values that emphasize the priority of social interactions in India and Asia. The causes described in suicide case studies (Gehlot & Nathawat, 1983; Gururaj & Isaac, 2001), and study of suicide notes in India (Girdhar, Leenaars, Dogra, Leenaars, & Kumar, 2004), also considered and identified underlying situational contexts and social problems consistent with our findings: financial loss, family conflicts, illicit relationships of a spouse, illness of self or spouse, and frustrated teenage romance. This focus on social suffering is an alternative and a complement to the Western focus on risk analysis with reference to psychopathology and intent. It is also more directly related to Shneidman's (1998) formulation of psychache, identifying its local, patient-perceived sources and contexts. These three dimensions of suicidal behavior are complementary, each providing information relevant for preventing suicide in clinical practice and in the general population.

Cross-cultural studies within regions (e.g., WHO/EURO parasuicide studies) and across regions are needed to clarify the cross-cutting and distinctive features of suicidal behavior. A WHO comparative study with reference to a biopsychosocial model and cross-cultural comparisons of suicidal behavior in developing countries is responsive to such needs for research (Bertolote & Fleischmann, 2005). Our study shows how cultural epidemiology, quantifying essential features of case narratives, clarifies the role of patient-identified problems, causes, and triggers, which have been relatively neglected in research on suicidal behavior. This research also shows how to study the relationship between the cultural epidemiology and psychiatric epidemiology of DSH. Our study also clarifies cultural features of the relationship between suicidal behavior, depression, and somatization. We found that a diagnosis of depression associated with DSH had more prominent emotional symptoms than somatic features, which are associated with typical presentations of depression in India (Gada, 1982; Raguram et al., 2001).

Implications for Policy and Practice

Our findings support efforts to establish broad-based integrated strategies for suicide prevention, recognizing the limitations of case-finding and treatment, and the need for new approaches linking clinical and community interests (Bertolote, Fleischmann, De Leo, & Wasserman, 2004; Rutz, 2004). Although depression remains an important risk factor, an effective integrated response may benefit from, but requires more than, pharmacological interventions. In European and North American societies increased availability of antidepressants has not brought about anticipated reductions in suicide rates in the general population (Andersen, Andersen, Rosholm, & Gram, 2001; Isacsson, Holmgren, Druid, & Bergman, 1999), nor are they adequate without a more comprehensive intervention model for managing suicidal patients in clinical practice (Black, Winokur, Mohandoss, Woolson, & Nasrallah, 1989). Even in settings where mental health services are more widely available and better accepted, current approaches for indicated prevention and treatment of suicidal patients recognize the importance of addressing a broad mix of life-career and identity issues (Michel, Dey, Stadler, & Valach, 2004). Our study shows how research may contribute to such efforts, guided by a local cultural epidemiology of suicidal behavior. Such research on suicidal behavior is also needed to clarify particular features of completed suicide, nearly lethal and less lethal DSH, the role of gender, and cross-cultural comparisons.

As a practical matter, the absence of prior medical help seeking for DSH-related problems in our Mumbai sample was striking. Unlike many European and Western studies, which show that a recent visit to a doctor often precedes suicidal behavior, fewer than 1 in 5 study patients had consulted a doctor for their identified problem. Limited use of the health system for DSH-related, patient-identified problems probably reflected the fact that patients did not regard these as health problems. Inasmuch as DSH patients with depression were less likely to emphasize somatic symptoms, this too may also contribute to limited medical help seeking. Further study, however, of recent clinical consultations for other health problems prior to DSH should address questions arising from this study; they should clarify presentations of such patients that enable general practitioners to play a greater role in broad-based approaches to culturally sensitive clinical management and community action to reduce suicidal behavior and promote mental health.

CONCLUSION

This study has demonstrated the value of complementary psychiatric and cultural epidemiological assessments of suicidal behavior. Locally relevant features of DSH in Mumbai show how psychopathology and sociocultural contexts and stressors influence DSH. Findings indicate the value of examining features of suicidal behavior with reference to complementary frameworks.

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