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Gender, Suicide, and the Sociocultural Context of Deliberate Self-Harm in an Urban General Hospital in Mumbai, India

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Abstract Recognizing the complementary effects of social contexts and psychiatric disorders, this study clarifies the role of gender in suicidal behavior in urban Mumbai by considering psychiatric diagnoses and patient-identified sociocultural features. The cultural epidemiological approach suggests the critical impact of situational sociocultural factors that complement the customary psychopathological accounts for those who harm or kill themselves. The cultural epidemiology of deliberate self-harm (DSH), it is argued, is critical to planning for suicide prevention, community mental health and psychiatric practice. This study, based on a cultural epidemiological framework, compares male and female admissions for DSH, evaluating conditions with SCID-I and EMIC interviews. We assessed features and narratives of suicidal behavior, patient-identified underlying problems, their perceived causes and triggers. The study included 92 women and 104 men. A diagnosis of depressive disorder was made for 48.9 percent of women and 39.4 percent of men. Many patients (50.0 percent of women and 41.3 percent of men) did not fulfill the criteria for any diagnosis, or did so only for an adjustment disorder or a V-code. Men typically explained DSH with reference to work problems, financial problems and problem drinking. Women typically discussed domestic problems, in-law relations and victimization. Problem drinking affected women living with men who drank. Social and situational factors appear to play a relatively greater role than psychiatric illness in self-harm and suicide in Mumbai, as in other Asian studies, compared with Europe and North America.

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Background

Suicide is the leading cause of death among young people worldwide, though more males than females commit suicide. Among 873,000 global suicides for 2002, 62.5 percent were men (World Health Organization [WHO] 2004), and in India for 1999, 59.2 percent of the 110,587 reported suicides were men (Government of India 2002). The male preponderance of suicides is greater in Europe and North America (Cantor 2000; Cavan 1928; Lester 1988) than in Asia. Only in China is the suicide rate higher for women (Cheng and Lee 2000; WHO 2001). Unlike suicide rates, however, rates for nonfatal deliberate self-harm (DSH), suicidal behavior, are typically higher for women (Hawton et al. 1994; Sakinofsky et al. 1990; Weissman 1974). Community studies from North America and Europe also report higher rates of suicidal ideation and behavior among women (Angst et al. 1992; Bronisch and Wittchen 1994; Moscicki et al. 1988; Ramsay and Bagley 1985).

Explanations for these gender differences focus on the tendency of women to use less lethal methods for self-harm and a lesser likelihood of associated problem drinking. Women may also be more likely to use health services for DSH (Canetto and Sakinofsky 1998). Depression, an important risk factor for suicide, is higher for women. Patterns of domestic violence and abuse also suggest that marriage is more likely to increase the vulnerability of women while protecting men from suicidal behavior (Watts and Zimmerman 2002).

Current epidemiological studies may give insufficient attention to explaining differences in the rates, patterns and determinants of suicide and suicidal behavior for men and women (Phillips and Ruth 1993; Philips et al. 2002). Research needs are complicated by expectations that the circumstances and situational factors leading to suicidal behavior for men and women have both common and distinctive features that may also vary across cultures. Critical examination of the role of gender and cultural stereotypes in the general population and among health care providers is needed. The existence of such stereotypes has practical significance because they influence approaches to policy for suicide prevention, clinical treatment for DSH and social responses that may either stigmatize or provide needed support for people in response to DSH.

Mental health research emphasizes the role of psychiatric disorders, arguing that in Western countries they account for 90 percent of suicides. Depressive disorders are the most frequently associated psychiatric conditions, with reported rates ranging from 30 to 90 percent (Goldsmith et al. 2002). The strength of psychopathology as a risk factor may differ across cultures. A case series of suicides in Bangalore, India, found evidence for a diagnosis of depression in 45 percent of people who died by suicide, but no other psychiatric disorders. Instead, findings emphasized the causal role of social and situational stressors, including financial problems, family conflicts, illicit relationships of a spouse, serious illness and frustrated teenage romance (Gururaj and Isaac 2001). Bhatia and colleagues

(1987) also emphasized the role of humiliation, shame, economic hardships and family discord. Gehlot and Nathavat (1983) asserted that family conflict was the most important contributing factor to suicidal behavior in India. Research in China also emphasizes the importance of social rather than psychopathological determinants of suicidal behavior (Zhang et al. 2000), as well as sociocultural influences in a changing society (Ji et al. 2001).

Cultural epidemiological research is likely to be particularly useful in clarifying patterns of sociocultural stressors, considering the role of patient-identified underlying problems, their perceived causes and immediate triggers of suicidal behavior. Underlying problems of various kinds, including both psychiatric and social patterns of distress that operate as risk factors, may be regarded as a necessary substrate, required for triggers to result in suicidal behavior.

A previous report indicated how this approach has been adapted to study the relative role of psychiatric risk factors and sociocultural contextual features of DSH in Mumbai (Parkar et al. 2006), based on a clinical cultural epidemiological framework used in studies of depression, somatoform disorders and schizophrenia (Henningsen et al. 2005; Jadhav et al. 2001; Raguram et al. 1996, 2001). The current study examines the role of gender and with reference to the pattern of underlying problems (including psychopathology), situational stressors and triggers of suicidal behavior among patients with DSH in Mumbai.

Setting

The study was conducted at the KEM Hospital, an urban university hospital administered by the Mumbai Municipal Corporation. It is the largest hospital in the city, located in central Mumbai and serving a primarily lower-middle-class population at low or no cost. Well-known and highly regarded, the hospital also attracts patients from the entire city, other parts of the state and other parts of India. It provides widely used 24-h emergency medical and surgical services. Patients presenting for emergency treatment are more likely to come from the middle-class and industrial areas in central Mumbai where the hospital is situated, and where a high concentration of male workers reside.

Methods

Instruments

A semistructured EMIC interview for cultural epidemiological study of DSH was developed to examine underlying problems, their perceived causes, triggers and other features of DSH, based on a framework developed for other clinical cultural epidemiological studies of psychiatric problems in India (Chowdhury et al. 2001; Raguram et al. 1996, 2004; Weiss et al. 1992). (The designation *EMIC* for the interview refers to the *EMIC* orientation of interests, the insider's perspective, and the term is also an acronym for Explanatory Model Interview Catalog, referring to a family of interviews.) The adaptation for this study adhered to the framework

concerned with problem-related experience, meaning and behavior (Weiss 1997, 2001) but elaborated a focus on both the DSH and its situational, sociocultural and clinical contexts. Developed from pilot testing with 60 patients, this EMIC interview was translated into Marathi and Hindi, the local languages most widely used in Mumbai. Research interviewers were qualified psychiatrists. Training included sensitizing them to issues of gender and cultural context of particular interest in the study, enabling them to code responses and capture essential features of illness narratives in complementary quantitative and qualitative components of the data set. The Structured Clinical Interview for DSM-IV (SCID-IV) was used for assessing Axis I psychiatric disorders (First et al. 2001).

Design

Patients over 18 years of age who sought care at KEM Hospital after a DSH event were requested to participate in the study. After the study was explained and patients gave their informed consent, they were interviewed with EMIC and SCID interviews. Research interviews were typically broken into several sessions, based on the alertness and endurance of the patients. The ethics committee of KEM Hospital approved the research protocol and associated instruments.

Analysis of EMIC Data

The EMIC data set included narrative accounts of the DSH event and associated problems for qualitative analysis and coded variables for quantitative analysis. We compared the frequency of relevant categories and the narrative contexts of situational stressors and sociocultural contexts of underlying problems. Quantitative and numeric data from EMIC and SCID interviews were entered in Epi Info (version 6.04d) using data masks with appropriate range and logic checks to prevent entry errors resulting from typographical errors with inconsistent or unrecognized values. Both Epi Info and SAS were used for analyzing EMIC interview and psychometric data.

    After comparing the diagnostic profile of men and women in the sample, based on SCID interview data, characteristic themes were identified from DSH narratives. The analysis examined the distribution of categories and associated narrative features of underlying problems with reference to patterns of distress (PD), perceived causes (PC) and more immediate triggers of the DSH event. Categories of prior help-seeking (HS) for the underlying problems were also compared. Comparison of these PD, PC and HS variables considered not only the frequency of reported categories but also the prominence of responses based on whether they were reported spontaneously in response to an open-ended question, or only after probing for that category, and whether they were emphasized or mentioned in passing in a respondent's narrative. Spontaneously reported categories that were emphasized received the highest prominence (coded 4); prominence was lower for categories emphasized after probing (3), mentioned without emphasis spontaneously (2) or mentioned only after probing (1). If not mentioned at all, they were assigned zero prominence. The single most troubling

category of PD, the single most important PC and the first source of prior help seeking (HS) were also identified, adding to the prominence of a reported category, and men and women were compared with respect to these categories. Tables summarizing the distribution of responses for men and women indicate the percentage of respondents reporting each category, the fraction of these that were reported spontaneously without prompting in response to open-ended questions and the mean prominence of male and female comparison groups that takes into account whether that category was emphasized or mentioned without emphasis in the patient's account. Nonparametric statistics were used for comparison of ranked categories (Wilcoxon test), and chi-square or Fisher exact tests were used for nonranked comparisons.

Narrative data referenced to each item of the EMIC interview were transcribed with program-specific markings for automatic coding in the MAXqda qualitative data management program. Variables from the EMIC and SCID data sets were also imported, as needed, as selection variables, so that thematically coded text segments from specified records of particular interest could be assessed to elaborate a phenomenological account of the coded categories based on narrative context. A grounded theory approach (Glaser and Strauss 1967) was used to identify and postcode 34 categories of triggers based on patients' narratives. Two levels of reported prominence for triggers distinguished whether a category was reported or was reported and identified as the single most important category.

Results

Sample Characteristics

A total of 196 patients (104 males and 92 females) were studied. They ranged in age from 18 to 56 years. Although there was only one man and one woman over 55 years of age, more men were in higher age groups than women, and the median age of men (26 years) was older than that of women (21 years) ($p < .01$). The mother tongue of most patients was Marathi (the regional language of Maharashtra), followed by Hindi, then other regional languages. Most of the patients identified themselves as Hindu, consistent with the local population. Additional sample characteristics are summarized in Table 1.

Diagnostic Profile

Diagnostic assessment of patients with the SCID found that unipolar major depression was the most frequent diagnosis for men and women. Substance abuse and dependence disorders (typically alcohol dependence) affected a quarter of the men, significantly more than women. Assessment of adjustment disorders, classification with V-codes and "no diagnosis" were considered collectively as conditions representing mental health problems that do not meet the criteria for an enduring axis I disorder. The profile of diagnostic findings is presented in Table 2.

Table 1 Sample characteristics of DSH patients

Descriptor	Women (*n* = 92)	Men (*n* = 104)	Total (*n* = 196)
Age (yr)*			
Mean	24.4	28.3	26.4
Median	21.0	26.0	23.5
Range	18–56	18–55	18–56
Age groups (%)*			
18–24	60	48	108
25–34	23	36	59
35–44	7	9	16
45–54	1	10	11
55–64	1	1	2
Mother tongue (%)			
Marathi	75.0	67.3	70.9
Hindi	12.0	14.4	13.3
Gujarati	5.4	7.7	6.6
South Indian	3.3	5.8	4.6
Other	4.3	4.8	4.6
Religion (%)			
Hindu	91.3	85.6	88.3
Muslim	5.4	7.7	6.6
Christian	2.2	4.8	3.6
Other	1.1	1.9	1.5
Marriage (%)			
Never married	50.0	51.9	51.0
Married	44.6	41.3	42.9
Separated and divorced	5.4	4.8	5.1
Remarried	0.0	1.0	0.5
Widowed	0.0	1.0	0.5
Education (%)			
None	7.6	1.9	4.6
Primary incomplete	4.3	2.9	3.6
Primary complete	3.3	3.8	3.6
Secondary incomplete	38.0	34.6	36.2
Secondary complete	23.9	29.8	27.0
Higher secondary incomplete	1.1	2.9	2.0
Higher secondary complete	5.4	10.6	8.2
Beyond higher secondary	16.3	13.5	14.8
Occupation (%)			
Professional-manager- business	6.5	15.4	11.2
Skilled-clerical-crafts-service	10.9	30.8	21.4
Unskilled	13.0	15.4	14.3
Vendor-sales	3.3	8.7	6.1

Table 1 continued

Descriptor	Women ($n = 92$)	Men ($n = 104$)	Total ($n = 196$)
Housewife	32.6	0.0	15.3
Student	10.9	3.8	7.1
Retired	1.1	0.0	0.5
Never employed	8.7	1.0	4.6
Unemployed	9.8	20.2	15.3
Others	3.3	4.8	4.1

Note: * $p < .01$, Wilcoxon test

Table 2 Diagnosis of patients after deliberate self-harm

Diagnosis[a]	Female		Male		Total	
	Number	Percent	Number	Percent	Number	Percent
Unipolar major depression	39	42.4	37	35.6	76	38.8
Other depression	6	6.5	4	3.8	10	5.1
Substance abuse and dependence[b]	1	1.1	27	26.0	28	14.3*
Psychosis[c]	1	1.1	2	1.9	3	1.5
Panic disorder	1	1.1	1	1.0	2	1.0
Pathological gambling	0	0.0	1	1.0	1	0.5
Somatoform pain	1	1.1	0	0.0	1	0.5
Adjustment disorder	22	23.9	24	23.1	46	23.5
V-code[d]	12	13.0	10	9.6	22	11.2
No diagnosis	12	13.0	9	8.7	21	10.7
Total[e]	95	103.3	115	110.6	210	107.1

Note: * $p < .001$, Pearson's chi-square test, women vs. men

[a] DSM-IV Axis I diagnosis based on SCID-IV interview

[b] Substance abuse and dependence (including alcohol) in remission not included

[c] Psychosis includes paranoid schizophrenia and brief psychotic disorder

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

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

Sociocultural Context and Underlying Problems

Sociocultural features of various underlying problems were both cross-cutting and gender-specific. They were notable for frustration arising from an inability to fulfill family and social responsibilities, experience of victimization, financial stress, effects of drugs and alcohol and interpersonal conflicts, which were often associated with culturally defined relationships, especially family and in-law relationships.

For men, the frustration of unfulfilled responsibilities typically arose from unemployment and the inability of a man to provide for his family and himself. Such men felt that they had become an unacceptable burden on their family, focusing on particularly troubling aspects of their dependency: "My unemployment is my main problem. Because of this, I feel, I am a burden on my family and especially my younger brother." Another young man explained, "I began thinking that nothing is going to work out for me. I am a useless unemployed 24-year-old man. Looking at my other friends who are working and earning makes me feel worse."

Self-esteem and humiliation from inability to support a family and fulfill one's own and others' expectations were disabling features of financial problems in patients' narratives. A young man who had migrated with his family from Tamil Nadu explained his shame:

> I came from Tamil Nadu to Bombay some 20 years back with no money in my pocket. I came here to earn a living for myself, and I learned to drive. I worked as a driver for a small company, and I now have a family. There are three of us, including my wife and child. Over the past one month I've been finding it increasingly difficult to manage the family expenses. Rs [rupees] 1200 is just too little nowadays. Every day I have been thinking about whether my existence makes any sense. Or would it be better if I were dead?

Women were also affected by similar questions of livelihood responsibilities, but also by the experience of a spouse's burden: "My husband has been unemployed for the past 7 to 8 months. There are financial problems, and he is not willing to take up a new job, and I am worried about our future.… I thought the only way out from these problems is to kill myself." When they spoke of their own unfulfilled commitments, women typically referred to family responsibilities apart from financial issues. Although they described frustration with household and domestic tasks, this was not as serious or powerful as fulfilling their responsibility to create a family and concern about inability to bear a child: "The question of not being able to conceive a child is my biggest enduring problem. It makes me feel insecure, worthless, and useless."

Victimization was also reported more frequently by women. For many of these women, the cultural context of their family life demanded a high tolerance for verbal, physical and sexual abuse.

> My husband and I don't get along well. We keep on fighting. He doesn't have time for me and my son. I was nine months pregnant and he still hit me. Then I delivered a dead baby. He beats me whenever he gets angry, and my in-laws always take his side.

Drinking of alcohol was an important feature of underlying problems in the narratives of many patients, mainly men, with various associated problems. Among psychiatric disorders, alcohol and substance dependence was the only diagnosis with an unequal distribution among men and women. Because alcohol frequently contributed to family tensions and hostilities, however, problem drinking affected both men and women. For men, problem drinking led to rejection from the

household and contributed to feelings of alienation and humiliation, for which they frequently lacked insight, often externalizing to explain their problems.

> My family cannot tolerate my alcohol problem. It makes me feel worthless. Why does my family have to hate me and my alcohol problem? Nobody loves me here. They will never understand why I must drink.

Alcohol was a frequent factor for men who victimized others in the household, which made problem drinking by men a serious problem for women living in that household with a husband, other partner or father. Problem drinking often led to financial difficulties and a shift of livelihood responsibilities from men to women. Various kinds of victimization of women ranged from domestic violence to indirectly humiliating experiences.

> My father is a chronic alcoholic. He drinks every day. Then he comes home at night and provokes a big fight (*tamasha*). He shouts loudly and abuses us all. I see him fall over on the road, or my friends tell me. It is most embarrassing. I work hard at the office for the family. I couldn't accept this any longer, so I decided to end my life.

Alcohol and drug problems in the community are greater than the rates of alcohol and substance abuse suggest. For some men who did not meet the diagnostic criteria for alcohol abuse or dependence, problem drinking was episodic, and for some it was also a factor in their DSH admission. A 22-year-old man, married for 9 months, had no history of alcohol abuse. His father-in-law accused him of harassing his wife for dowry, and he was arrested and beaten badly by the police. He was severely shaken by the experience, and he purchased whiskey, became intoxicated and impulsively consumed poison.

Financial crisis of some kind was a common trigger of DSH, and ongoing financial problems were chronic stressors that defined a common underlying problem. Such problems made it impossible to fulfill expectations and responsibilities, leading to hardship in a society without a safety net. "I couldn't ask for money, I don't like begging for money," a man explained. Another could not meet his financial obligations for a child's education: "I cannot give my intelligent son the type of education he deserves. This hurt me most of all." A woman told us, "I am getting married, but because of financial problems at home, I cannot afford to spend much on my marriage."

Interpersonal problems often took a form associated with culturally defined relationships within the context of joint family households. However stereotyped they may be, in-law relationships between daughter-in-law and mother-in-law [*bahu* and *saas*] were serious sources of stress and distress: "My mother-in-law is the main source of the tension I have experienced over the last 10 years. I would have moved out long back, but my husband's income isn't enough for us to rent our own house." In some cases, such tensions also troubled men caught in a conflict between wife and mother: "My mother and wife can't get along at all. I feel sad … sandwiched in between." This man seemed traumatized as he described the daily repetition of the same conflicts.
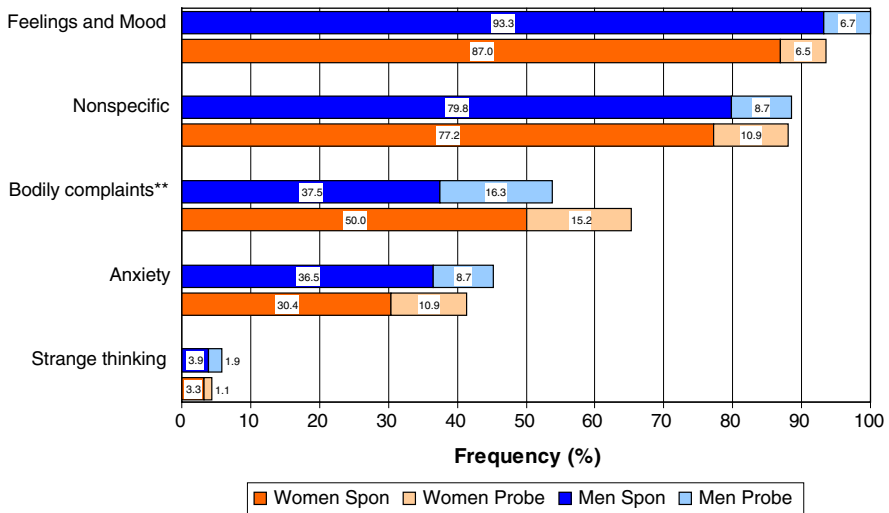
Fig. 1 Grouped categories of distress reported by patients for underlying problems associated with deliberate self-harm (%). ** $p < .05$, Kruskal–Wallis test, prominence of grouped categories

Patterns of Distress

Depressive symptoms were the most frequently reported category of distress (Fig. 1), with patients describing feelings of sadness, helplessness, worthlessness, disturbed sleep, guilt and fatigue (Table 3). These were also commonly identified by patients as their most troubling symptom. Other problems identified as most troubling were often nonspecific for any particular psychiatric disorder, suggesting emotional turmoil associated with interpersonal conflicts, sensitivity to rejection from a spouse or lover, hostility in troubled relationships, social isolation and other sources of distress. Just as problem drinking, substance dependence and depressive symptoms were reported more often by men, interpersonal problems, anger and hostility and sterility were reported more frequently by women.

Bodily complaints were reported by most patients (59.2 percent), more for women (65.2 percent) than men (53.8 percent; $p = .03$). These included common somatic symptoms (e.g., pain and fatigue) and culturally identified categories of distress. The prominence of these cultural categories of distress—giddiness [*chakkar*], burning and tingling—was higher for women. *Chakkar* is a common symptom among female patients at outpatient clinics of psychiatry and medicine.

For some patients the chronicity of such somatic complaints was associated with a level of discomfort and frustration beyond the severity of the current symptom. After a DSH attempt from an overdose of the medicine prescribed to treat this problem, a 19-year-old woman in the study explained that she had long been seriously upset about her *chakkar*.

Table 3 Categories of distress reported by patients for underlying problems associated with DSH

Label	Women (n = 92)			Men (n = 104)			Total (n = 196)		
	Total reported (%)	Fraction spontaneous	Mean prominence	Total reported (%)	Fraction spontaneous	Mean prominence	Total reported (%)	Fraction spontaneous	Mean prominence
Sadness	83.7	0.86	2.92	82.7	0.79	2.73	83.2	0.82	2.82
Helplessness	73.9	0.93	2.68	76.0	0.84	2.55	75.0	0.88	2.61
Worthlessness	68.5	0.83	2.38	67.3	0.84	2.20	67.9	0.83	2.29
Sleep disturbance	58.7	0.83	2.03	73.1	0.82	2.40	66.3	0.82	2.23
Guilt	55.4	0.76	1.87	66.3	0.83	2.21	61.2	0.80	2.05
Fatigue	55.4	0.69	1.57	46.2	0.67	1.13	50.5	0.68	1.34*
Anxiety	40.2	0.73	1.11	45.2	0.79	1.38	42.9	0.76	1.26
Self-harm	46.7	0.93	1.58	39.4	0.88	1.26	42.9	0.90	1.41
Hostility	51.1	0.66	1.61	32.7	0.59	1.06	41.3	0.63	1.32**
Physical pain	42.4	0.64	1.24	31.7	0.61	0.78	36.7	0.63	0.99*
Interpersonal	41.3	0.97	1.58	28.8	0.83	0.97	34.7	0.91	1.26**
Eating disturbance	40.2	0.73	1.28	26.0	0.81	0.82	32.7	0.77	1.04**
Other somatic	39.1	0.89	1.20	26.0	0.81	0.78	32.1	0.86	0.97**
Other	26.1	0.96	1.01	26.0	0.93	0.98	26.0	0.94	0.99
Giddiness (chakkar)	37.0	0.44	0.90	16.3	0.24	0.39	26.0	0.37	0.63***
Disturbed sense of self	18.5	0.71	0.49	24.0	0.84	0.83	21.4	0.79	0.67
Impaired memory	25.0	0.61	0.79	18.3	0.68	0.50	21.4	0.64	0.64
Sensitive to rejection	25.0	0.91	0.80	17.3	0.83	0.59	20.9	0.88	0.69
Tingling	26.1	0.50	0.72	14.4	0.47	0.31	19.9	0.49	0.50**
Substance abuse	0.0	–	0.00	21.2	0.91	0.77	11.2	0.91	0.41***
Social isolation	7.6	0.86	0.25	13.5	0.43	0.35	10.7	0.57	0.30
Stigma	5.4	1.00	0.17	7.7	0.88	0.24	6.6	0.92	0.21

Table 3 continued

Label	Women (n = 92)			Men (n = 104)			Total (n = 196)		
	Total reported (%)	Fraction spontaneous	Mean prominence	Total reported (%)	Fraction spontaneous	Mean prominence	Total reported (%)	Fraction spontaneous	Mean prominence
Burning	10.9	0.50	0.25	2.9	0.67	0.05	6.6	0.54	0.14**
Suffocation	6.5	0.83	0.21	3.8	0.75	0.13	5.1	0.80	0.16
Sexual	7.6	0.43	0.24	1.0	0.00	0.01	4.1	0.38	0.12**
Fear	5.4	0.60	0.11	2.9	0.33	0.08	4.1	0.50	0.09
Paranoid	3.3	0.67	0.10	4.8	0.60	0.12	4.1	0.63	0.11

Note: * $p < .10$, ** $p < .05$, and *** $p < .01$, Wilcoxon test. Comparison of mean prominence of reported categories for men and women. Categories reported with a frequency of 5% or more by male or female respondents are included in descending order, based on the frequency reported for both sexes. Fraction spontaneous indicates the fraction of those reporting that category who required no prompting

> I took 10 tablets of Stugeron [cinnerazin, a sedating antihistamine], the medicine prescribed for my *chakkar*. I am fed up from this giddiness. It has been there since I've been in the third standard. Almost every day I get these spells of *chakkar*, especially when I'm emotionally upset. I also have a problem with low backache, and I have been given medicines for that too. I always think, if at this young age I have so many problems and pills to take, how will I manage the future?

Perceived Causes of Underlying Problems

Nearly all patients, both men and women, explained their underlying problems with reference to social and psychological factors. These were readily reported in spontaneous accounts as patients related stories of the problems leading to their DSH. Among categories of perceived causes, men more frequently identified financial causes, work-related problems and unemployment. Women focused more often on problems with their in-laws and spouse. Women also more commonly reported victimization from domestic violence, fate, a tendency to blame themselves for their problems and the influence of demons (Table 4).

For men, the single most important perceived causes of their problems were unemployment (19.4 percent) and financial problems (11.2 percent). The percentage of men identifying alcohol as a cause of their problems (27.9 percent) was about the same as those diagnosed with a substance use disorder (26.0 percent). Women also identified problem drinking as a perceived cause, but with reference to a man whose drinking caused problems in their household. Alcohol was identified as the most important perceived cause by 9.6 percent of men. "Alcohol has caused almost all the problems in my life," said a 32-year-old man who recently lost his job because of problem drinking. A 35-year-old man with a previous history of DSH before this admission illustrated the link between alcohol and other factors identified as perceived causes: "The fact that I drink alcohol regularly has contributed to my suicide attempt, but the marital conflict that I've been experiencing since these 14–15 years of marriage has also contributed to my suicide attempts."

The perceived causes most frequently identified by women as most important referred to in-law problems (20.7 percent) and problems with a spouse (18.5 percent). "My in-laws have made life hell for me," a woman explained in a typical account. Even when other factors, such as an acknowledged psychiatric condition, played a role, family dynamics might be perceived as critical. A woman diagnosed with chronic schizophrenia and stabilized with treatment for more than 10 years explained that her family and in-laws were a far bigger concern, and they were the main cause of the problems leading to her DSH. Concerned that she would become infertile, her in-laws would not permit her to take her prescribed medication. The patient explained:

> Although my mental illness is a big problem, I still feel that my in-laws and their attitude is a bigger source of distress for me. They made my life miserable and no longer worth living. I can take tablets for my illness, but what can I do to cope up with these people?

Table 4 Patient-identified perceived causes of underlying problems associated with DSH

PC category	Women (n = 92)			Men (n = 104)			Total (n = 196)		
	Total reported (%)	Fraction spontaneous	Mean prominence	Total reported (%)	Fraction spontaneous	Mean prominence	Total reported (%)	Fraction spontaneous	Mean prominence
Mental turmoil	78.3	0.96	2.90	83.7	0.94	2.99	81.1	0.95	2.95
Financial	30.4	0.86	1.00	51.0	0.87	1.70	41.3	0.86	1.37***
Family, in-laws	47.8	0.95	1.87	27.9	0.86	1.02	37.2	0.92	1.42***
Fate	29.3	0.56	0.85	18.3	0.47	0.48	23.5	0.52	0.65*
Other	28.3	0.96	1.10	19.2	0.90	0.73	23.5	0.93	0.90
Problem with spouse	27.2	0.96	1.03	15.4	0.94	0.57	20.9	0.95	0.79**
Other interpersonal	22.8	0.90	0.83	19.2	0.80	0.71	20.9	0.85	0.77
Alcohol	9.8	1.00	0.39	27.9	0.86	0.98	19.4	0.89	0.70***
Unemployment	7.6	0.86	0.27	28.8	0.97	1.13	18.9	0.95	0.72***
Work	6.5	1.00	0.22	26.9	0.89	0.91	17.3	0.91	0.59***
Personality	21.7	0.75	0.75	12.5	0.77	0.39	16.8	0.76	0.56*
Failed romance	13.0	0.92	0.51	8.7	0.78	0.31	10.7	0.86	0.40
Bad deed previous life (*karma*)	12.0	0.27	0.37	6.7	0.14	0.13	9.2	0.22	0.24
Breakdown of family	9.8	0.89	0.36	7.7	0.88	0.26	8.7	0.88	0.31
Sorcery	7.6	0.86	0.18	7.7	0.50	0.17	7.7	0.67	0.18
Prior or chronic illness	7.6	1.00	0.28	7.7	1.00	0.31	7.7	1.00	0.30
Victim of violence	10.9	0.80	0.41	3.8	0.50	0.13	7.1	0.71	0.27*
Weakness	3.3	0.67	0.10	7.7	0.75	0.19	5.6	0.73	0.15

Table 4 continued

PC category	Women ($n = 92$)			Men ($n = 104$)			Total ($n = 196$)		
	Total reported (%)	Fraction spontaneous	Mean prominence	Total reported (%)	Fraction spontaneous	Mean prominence	Total reported (%)	Fraction spontaneous	Mean prominence
Demons	10.9	0.60	0.33	1.0	0.00	0.01	5.6	0.55	0.16***
Bereavement	6.5	0.83	0.23	3.8	1.00	0.15	5.1	0.90	0.19

Note: * $p < .10$, ** $p < .05$, and *** $p < .01$, Wilcoxon test. Comparison of mean prominence of reported categories for men and women. Categories reported with a frequency of 5% or more of male or female respondents are included in descending order, based on the frequency reported for both sexes. Fraction spontaneous indicates the fraction of those reporting that category who required no prompting

While some women accepted it, their husband's infidelity was a serious problem for others: "There has been a breach of trust between my husband and me—all because of this other woman in his life. This has hurt me most of all. It is the worst thing that can happen to a most faithful wife."

Triggers of Deliberate Self-Harm

Immediate triggers of DSH were qualitatively similar to the underlying problems, usually referring to an acute flare-up or exacerbation. Social conflicts with a spouse, partner or parents and problems at work were identified most frequently. Though among the most frequently reported triggers, conflict with a spouse was more likely a contributing factor, rather than identified as the most important trigger. But conflict with a parent and victimization were more frequently identified as most important, indicated by the higher critical fraction in Table 5. The pattern of gender

Table 5 Patient-reported trigger events precipitating deliberate self-harm

Trigger event	Women (n = 92)		Men (n = 104)		Total (n = 196)	
	Total reported (%)	Critical fraction	Total reported (%)	Critical fraction	Total reported (%)	Critical fraction
Conflict with parent	18.5	0.65	24.0	0.56	21.4	0.60
Job or business problem (self)	6.5	0.17	33.7	0.23	20.9	0.22
Conflict with spouse	23.9	0.23	17.3	0.33	20.4	0.28
Financial problem	10.9	0.40	21.2	0.18	16.3	0.25*
Substance abuse (self)	1.1	0.00	28.8	0.37	15.8	0.35***
Verbal abuse	19.6	0.67	7.7	0.63	13.3	0.65**
Other physical abuse	15.2	0.64	6.7	0.71	10.7	0.67*
Conflict with sibling	12.0	0.36	8.7	0.11	10.2	0.25
Conflict with in-laws	17.4	0.19	2.9	0.00	9.7	0.16***
Romantic problem	10.9	0.20	6.7	0.43	8.7	0.29
Other interpersonal problem	9.8	0.33	7.7	0.25	8.7	0.29
Own illness	8.7	0.25	7.7	0.25	8.2	0.25
Sadness	4.3	0.50	9.6	0.70	7.1	0.64
Other victimization	8.7	0.38	5.8	0.50	7.1	0.43
Substance abuse (of another)	10.9	0.00	2.9	0.00	6.6	0.00**
Tension	2.2	1.00	7.7	0.38	5.1	0.50*
Other unfulfilled expectations	3.3	0.33	6.7	0.29	5.1	0.30

Note: * $p < .10$, ** $p < .05$, and *** $p < .01$, Wilcoxon test. Trigger events identified as precipitating DSH, based on prominence of reported trigger: 2, trigger most important; 1, trigger reported; 0, trigger not reported. Multiple responses included. The critical fraction specifies the probability that this event was identified as the single most important trigger

differences was consistent with that of underlying problems. Work problems and the patient's problem drinking were more frequently reported by men, and in-law conflicts, verbal abuse and drinking by someone else in the household were more frequently reported by women.

For some patients, several factors operated collectively as triggers. For example, a 28-year-old woman attempted suicide after her husband's extramarital affair and his physical abuse eventually became intolerable.

> My husband had an affair with a married lady just before my marriage. After one-and-a-half years of marriage, I got to know about her. Whenever I questioned my husband about it, he evaded it. Later on, whenever I asked him, he used to beat me. Gradually his beatings increased and that lady also started coming home. One month back, my husband again beat me up. I got very angry and hurt, so I consumed half a bottle of some massage oil and started vomiting. Then my father-in-law brought me here.

Physical abuse in domestic violence usually targeted women; men were occasionally targets of abuse but more often from a parent. An 18-year-old man described chronic problems in his relationship with his father, explaining how an episode of abuse led to his DSH.

> My father regularly hits everybody every day at home. A few days ago he hit me, and so I was staying outside the house. My father found me and beat me up again. I got very angry and swallowed Tick 20 [common pesticide used against cockroaches].

Sterility was an underlying problem that reduced self-esteem and social status. A woman described how the events of a particular day led to the extreme humiliation that triggered her DSH:

> Not being able to conceive a child has been my biggest problem for a long time. But that day, all those neighbours who were washing clothes with me began discussing my problem and passed sarcastic comments. I got fed up, went back home, and after 3 or 4 hours, I decided to end my life.

Help-Seeking for Underlying Problems

Most patients did not seek any medical, psychiatric or other professional assistance or other organized help for the underlying problems they identified. They tried to find other ways to solve their problems, and some spoke with friends and colleagues (Table 6).

For some problems that had a practical focus, patients described efforts to develop a practical solution. A young man explained how he had tried to find a way to earn a livelihood:

> I tried my hand at odd jobs. I tried selling milk packets, selling some pens and torches in the trains, cleaning cars, but nothing really worked out. I'm still looking out for some good company job. I have now decided to change my

Table 6 Self-help for underlying problem associated with DSH (%)

Self-help	Women ($n = 92$)	Men ($n = 104$)	Total ($n = 107$)
None	38.0	37.5	37.8
Other problem solving	31.5	39.4	35.7
Talk with friends-colleagues	20.7	17.3	18.9
Talk with close family	18.5	13.5	15.8
Change lifestyle	6.5	16.3	11.7**
Prayer, temple, vow, fast	15.2	6.7	10.7*

Note: * $p < .10$ and ** $p < .05$, Fisher's exact test

lifestyle, and make sense of the things in my life. I will lay down priorities and work things out for the better.

Though it was easier for men to discuss ways in which they needed to find a solution to earning a livelihood, it was more difficult for them to acknowledge domestic problems, especially if they involved a reversal of typical gender roles. One patient confided how difficult it had been to be abused by his overbearing wife: "Who can I go to for help for this problem? It sounds so embarrassing—a man who is harassed by his wife! This is in fact the first time I'm really talking so much about my problem."

Religion and prayer were more frequently a refuge for women, helping them cope with their problems. A woman troubled by her husband's drinking explained, "What can I do for myself? I cry and cry, that's all! Then I pray often to God to give me strength. But there's nothing else I can really do to make things even a little better."

Discussion

This study has developed and used a model of suicidal behavior in the largest urban general hospital in Mumbai, India, that clarifies the sociocultural contexts with reference to underlying problems, their perceived causes and triggers of DSH. Cultural historical studies of suicide in India, like Bhugra's (2005) analysis of *sati*, and sociocultural studies of gender and suicide (Desjarlais et al. 1995) emphasize the limits of an exclusively psychiatric model. Macrosocial studies of suicide and gender have considered effects of modernization, female literacy, urbanization and other social forces affecting the male-female suicide ratio (Steen and Mayer 2004). Recent mental health studies of suicidal behavior concerned with gender focus on traditional sociodemographic features, psychopathology, intentionality and methods, with little attention to sociocultural contexts of suicidal behavior (Sudhir Kumar et al. 2006). In response to a recognized need for attention to context (Bhatia et al. 2000), this study integrated sociocultural and clinical psychiatric perspectives with a focus on the role of gender.

Clinical Psychiatric Disorders and Social Determinants

Consistent with findings of other investigators, we found high rates of depression for men and women and higher rates of substance use disorders for men (Harris and Barraclough 1997; Lönnqvist 2000; Sudhir Kumar et al. 2006). Unlike Sudhir Kumar and colleagues, however, we did not find higher rates of adjustment disorders for women. This may have resulted from ambiguity in differentiating adjustment problems from disorders and their reliance on clinical interviews rather than a research diagnostic interview schedule, which they acknowledged as a limitation of their study. Situational stressors complementing, or in place of, Axis I disorders and the role of adjustment disorders and V-codes were notable (Parkar et al. 2006), highlighting the importance of social determinants (Dennerstein et al. 1993; Makosky 1982).

   Findings showed that the effects of alcohol abuse and dependence extend well beyond its diagnostic significance. Problem drinking was a pervasive issue for men and women, though in different ways, which were identified from analyses of underlying problems, perceived causes and triggers. For men, it was the second most frequently diagnosed clinical disorder, and for women, it was typically identified as a problem because of a spouse or other male drinker in the household. Women with alcoholic husbands were exposed to hardship and domestic violence. Unlike experience in Western Europe, where problem drinkers tend to be more solitary, socially excluded and more likely to be unemployed and living alone (Hawton et al. 1997), effects of alcohol on our patients in Mumbai were typically embedded in and mediated by interactions within the context of family life, including conflicts with close relatives, financial crises and the interplay of stigma and drinking.

   Interpersonal problems and conflicts arising from in-law and family relations were particularly important in the DSH narratives of women. Dowry problems, however, were not mentioned by any patients. Considerable attention to dowry disputes has been given in suicide studies in India, linked by some analysts with the practice of sati (Kumar 2004). Although dowry disputes accounted for 2,572 suicides in India in the official statistics for 1999, 2.3 percent of the total (Government of India 2002), none of our patients referred to dowry problems. Though conflicts with in-laws remain widely acknowledged in the DSH narratives, in urban Mumbai, questions of dowry may have been displaced by other issues. Even if such patients did not come to clinical attention because their DSH proved fatal, one might nevertheless have expected some reference to dowry disputes in the accounts of in-law conflicts.

   Emotional turmoil, hostility and anger associated with family conflict have been discussed as associated features of suicidal behavior of women (Nordentoft and Rubin 1993; Williams and Pollock 1993). These factors are particularly important in Mumbai, where the lack of affordable housing maintains joint family households by virtue of economic necessity, rather than the influence of traditional values. The greater emotional impact of such conditions on women was reflected by the greater prominence of hostility among the women in this sample.

   Although urbanization has produced more working women in Mumbai, concern about unemployment remained an issue associated mainly with men. Unemployed

men were concerned about their status, and women who were concerned with the issue typically focused on the unemployment of men in their household, either a spouse or a partner, rather than their own. For men, unemployment was described primarily as a personal problem with effects on the family, but for women it was primarily a family problem that affected them personally.

Cross-cultural Features of Suicidal Behavior

Social and situational factors played a more prominent role than studies in Europe and North America suggest. This finding supports a similar assertion from other cross-cultural comparisons of suicidal behavior, acknowledged in Chapter 3 of Goldsmith and colleagues (2002), emphasized in the *World Mental Health Report* (Desjarlais et al. 1995) and with particular reference to study of suicide in India (Bhatia et al. 1987). It appears that suicidal behavior, both fatal and nonfatal, is less easily linked directly to pre-existing enduring psychiatric disorders. It is not yet clear, however, whether this finding is an artifact, arising from approaches to study of suicidal behavior in Europe and North America that differ from those in Asian studies, or a real cross-cultural difference in the nature of suicidal behavior. For example, the study by Sudhir Kumar et al. (2006), like Western studies, focuses on sample characteristics, intentionality, methods and psychopathology, but not the social context of underlying problems, perceived causes and triggers. Government of India (2002) statistics, however, record distinctly situational stressors among categories of cause (e.g., bankruptcy, suspected illicit relation, cancellation/nonsettlement of marriage, barrenness/impotency, various illnesses). Research to examine the relative role of particular psychopathology and situational stressors across cultures is needed, and methods used in this study should provide a way forward.

Implications for Suicide Prevention

Common high-risk psychiatric disorders were confirmed as features of indicated risk for DSH. Reducing suicide in Mumbai and other areas of India, where comparable patterns of situational determinants are likely to apply, requires attention to the underlying problems and triggers identified in this study, and others that may be locally relevant. Dowry, which was not relevant in our sample, may well remain important elsewhere. In rural areas of Andhra Pradesh, Maharashtra, Karnataka and other states, analysis of farmer suicides continues to focus almost exclusively on socioeconomic determinants, especially indebtedness and the role of money lending (Vaidyanathan 2006) and the interventions suggested by that analysis (Narayana-moorthy 2006). Although economic factors, clinical psychopathology, sociodemographic patterns and sociocultural contexts are all relevant to explaining and controlling suicidal behavior, none of these can itself provide a complete and comprehensive picture without acknowledging the complementary insights of other vantage points.

Promoting greater public and clinical awareness of the sociocultural contexts of DSH identified in this study should increase the effectiveness and use of community

agencies and the effectiveness of mental health services. Furthermore, mental health policy and community programs should also aim to motivate families to recognize the value of and need for the kind of support only they can provide. Just as public health practice highlights the behavioral risk factors for cardiovascular and other physical disorders, community mental health action should highlight the toxic effects of social and situational stressors that impair mental health and impose risk for suicidal behavior.

Lessons from study of the sociocultural contexts of suicide are relevant for prevention, but they also have broader implications. Domestic violence and abuse of women and minorities, and social values that ignore the livelihood needs of vulnerable segments of society, should be challenged by an intersectoral agenda that serves the interests of mental health. Reliance exclusively on pharmacological treatment of patients who come to clinical attention because of DSH is an inadequate model for clinical practice when it ignores social and cultural determinants like those identified in this study. Our findings may be regarded as validation of a biopsychosocial model for suicide prevention, psychiatry and community mental health.

Conclusion

This research has used a cultural epidemiological framework to identify patient-perceived reasons for suicidal behavior after an episode of DSH. Attention to underlying problems, their perceived causes and triggers of suicidal behavior and their gender-specific features are key elements of this framework. Similar studies are needed in other settings to clarify questions about the nature of suicidal behavior across cultures, and to guide efforts to prevent suicide and promote mental health. Locally relevant patterns of suicidal behavior should be considered in planning any mental health program or initiative for a specific population to ensure culturally relevant and sensitive mental health care.

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