ORIGINAL PAPER

Attitudes to people with mental disorders: a mental health literacy survey in a rural area of Maharashtra, India

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Abstract

Introduction People with mental disorders experience discrimination as a consequence of stigmatising attitudes that are largely socio-culturally constructed. Thus, there is a need to understand local contexts in order to develop effective programs to change such attitudes. We undertook a mental health literacy survey in rural Maharashtra, India, prior to developing a mental health training program for village health workers (VHWs) in a primary health care setting.

Methods A cross-sectional mental health literacy survey was undertaken in late 2007, which involved interviewer-administration of a questionnaire to 240 systematically sampled community members, and 60 purposively sampled VHWs. Participants were presented with two vignettes describing people experiencing symptoms of mental disorders (depression, psychosis), and were asked about attitudes towards, and desired social distance from, the people in the vignettes (the latter being a proxy measure for stigma). Linear regression modelling was undertaken to identify predictors of social distance.

Results Although the community was relatively accepting of people with mental disorders, false beliefs and negative attitudes were still evident. Desired social distance was consistently greater for the person depicted in the psychosis vignette compared to the depression vignette. For both vignettes, the main predictor of greater social distance was perceiving the person as dangerous, and the predictors of reduced social distance were being a VHW, and seeing the problem as a sign of personal weakness. For depression, believing the cause to be family tensions also reduced social distance. For psychosis, labelling the disorder as a mind/brain problem, and believing the cause to be lack of control over life or genetic factors increased social distance. The vast majority did not agree that the problems experienced in the vignettes were 'a real medical illness'.

Conclusion Promoting bio-medical explanations for mental disorders in this setting may exacerbate discriminatory attitudes. Provision of contextually relevant mental health training for the VHWs so that they are able to communicate, model and shape more positive attitudes is the next step.

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Introduction

Both the concept of stigma and the experience of discrimination in the context of mental disorders have been widely explored and documented. It is well recognised that people with mental disorders are subject to discrimination as a consequence of stigma in a range of important spheres including housing, employment, access to services, and inter-personal relationships [1, 2]. Stigma exists 'when elements of labelling, stereotyping, separating, status loss, and discrimination co-occur in a power situation that allows these processes to unfold' (p. 382) [1].

Stigma and consequent discrimination contribute to delays in diagnosis and treatment for people with mental disorders, impede recovery and reintegration following a period of illness, and result in both short- and long-term personal distress for affected people, as well as lost opportunities for fuller participation in life [3]. Self-stigma, which involves internalisation of these attitudes, further compounds these effects [4]. The negative effects of stigma can outweigh the impact of disability due to the disorder [5, 6].

As it is difficult to directly measure stigma-based discrimination, a commonly used proxy measure is social distance, which is the distance people desire to have between themselves and another (with a mental disorder) in various social situations [3, 7]. Social distance scales have been shown to be internally consistent and to have construct validity [8]. However, social distance scales also have their limitations [8]. First, responses to the items that comprise the scale are subject to social desirability bias, resulting in an underestimation of desired social distance i.e. people may be disinclined to admit to more rejecting attitudes. Second, self-reported responses about hypothetical situations do not necessarily tell us about behaviour in reality. The direction of bias in this case is unpredictable i.e. it could go either way.

A range of factors have been associated with stigmatising attitudes and the desire for social distance from people with mental disorders. The type of mental disorder is influential: people with severe mental disorders such as schizophrenia are invariably judged more harshly than those experiencing common mental disorders such as depression [9–12]. Other factors that influence the expression of stigma include: explanatory models of causation [13–16]; perceived dangerousness [10, 12, 13, 17–19]; types of labelling [13, 18]; and previous contact with a person who has a mental disorder [10, 17, 20].

Most research regarding stigmatising attitudes to people with mental disorders has been undertaken in developed (primarily Western) country settings. Some exceptions to this are studies reported from Nigeria [21], Turkey [15], Russia and Mongolia [22, 23]; Ethiopia [24]; and Egypt [25]. Culturally influenced differences are evident when the findings from these studies are compared with studies from Western countries. Culture is likely to influence the experience, expression and determinants of stigma, and the effectiveness of different approaches to stigma reduction, and there is an unmet need for further research into this phenomenon in non-Western cultures [26–28].

We undertook a mental health literacy (MHL) assessment in a rural area of Maharashtra in India, which incorporated a range of attitudinal questions. This MHL survey will inform the development of a mental health training program for local community health workers and the communities they serve. While several Indian studies have examined the experience of stigma from the perspective of people with mental disorders and their families [29–33], there is limited information about attitudes to people with mental disorders among the general public. This paper reports on findings from our study in relation to attitudes to people with a mental disorder (specifically depression and psychosis).

Methods

This cross-sectional survey was conducted in late 2007 and involved 240 community members (129 females, 111 males) and 60 village health workers (VHWs) (all females), and all were aged ≥18 years. The local study partner was the Comprehensive Rural Health Project (CRHP) located in Jamkhed, Maharashtra. CRHP is a mature, primary health care program that has served more than 300 villages over three decades of work. At the heart of the program are a cadre of trained VHWs who are local volunteer women residing in the villages and providing a range of health services. Consistent with a recent WHO report [34], CRHP is very motivated to integrate mental health into its primary health care activities. This study builds on earlier work undertaken in this setting [35].

Questionnaire

The questionnaire was adapted from an existing MHL survey [11] in collaboration with CRHP staff and two local psychiatrists. Assessment of MHL involved presentation of two vignettes describing people experiencing symptoms potentially attributable to a mental disorder (depression and psychosis) (Fig. 1). Questions about the vignettes invited a mixture of open and closed responses regarding perceptions of the nature of the problem and its causes, the helpfulness of potential service providers and treatments, prognosis, and attitudes (assessed in part using social distance measures). The vignettes, questions and response

Fig. 1 Vignettes for depression and psychosis from the MHL survey

> **Depression**
> **Meena** is 30 years old and was fine until six months ago when she began to feel tired all the time. She says that she is sad and has lost interest in life. Even her children and family don't make her feel happy. She cannot sleep and she has lost the taste for food, which she used to love. She has also lost interest in cooking because she can't concentrate. Sometimes she feels like jumping in the well to end her life.
>
> **Psychosis (male version)**
> **Ram** is 21 years old and is not married. He used to regularly help his father work on the farm, but for the last 10-15 days he has not been going to work. For the last 2-3 months he has been staying alone and aloof. He has not been bathing regularly and sometimes becomes aggressive for no apparent reason. He never used to behave in this way. On several occasions his father has found him talking to himself when nobody else was around. He has become suspicious of others and says that people are talking about him. For the last one week he has refused to eat food as he suspects his food is being poisoned by the neighbours.

categories were translated into Marathi with support from a Marathi-speaking psychiatrist, and were back-translated to ensure equivalence of the items. Appropriate words for concepts such as depression were thoroughly discussed and the questionnaire was pilot-tested. The survey was interviewer administered due to low literacy levels in the community. The mean duration of interviews was 42 min (range 30–60). Data were collected by three local women trained by the research team.

For the psychosis vignette, female participants were provided with a female version of the story and male participants with a male version (symptoms were consistent in both) because we felt that this would help participants to identify more easily with the person in the story. We were unable to do this for the depression vignette because the symptoms of depression in India are highly gendered so it would be difficult to attribute any observed differences to gender alone, as the content of the two versions would have to be substantially different to ensure verisimilitude. For this reason, all participants were provided with a female version of the depression vignette. Additionally, we administered a short version the General Health Questionnaire (GHQ12), but these results are not reported in this paper.

Sampling

A cluster-sampling technique was used to sample the community members, which was conducted in three phases: (1) village; (2) household; and (3) participant. Ten villages were randomly selected from the 16 villages participating in the CRHP program within the Jamkhed 'block' (a municipal sub-division). These villages consist of between 400 and 5,000 people. The sample size calculation was based on the prevalence estimate of common mental disorders. In the absence of relevant local data, the prevalence of cases using the GHQ12 was estimated to be 50% (this estimate requires the largest sample size). For the 95% CI to be 50 ± 9% points, the sample size required

was 119. To adjust for cluster sampling, the sample size was doubled. Therefore, the final sample size was 240 community members.

A list and map of numbered households in each of the ten selected villages was available, and 24 households were randomly selected from each village. Finally, a list of family members aged ≥18 years was developed for each of the selected households, and one household member was randomly selected from this list. Local researchers were strongly encouraged to persevere with locating identified participants, which often involved data collection in the early morning and late evening. The VHWs were purposively sampled when attending routine training programs.

Data analysis

The data were analysed using Statistical Package for the Social Sciences (SPSS) Version 15.0. Descriptive statistics were calculated separately for the community members and the VHWs, because it was anticipated that there would be different levels of knowledge and different training needs for the two groups (and the sampling methods were different). We calculated 95% confidence intervals (CIs) to indicate uncertainty of the prevalence estimates for each group. All open-ended responses were translated into English and systematically grouped thematically for quantification. Linear regression modelling was undertaken using the combined sample to identify predictors of social distance. Predictor variables included: demographic, labelling and causation variables, perceived dangerousness, and previous contact.

Ethics approval for the study was obtained from the University of Melbourne, Australia and The Maharashtra Association of Anthropological Sciences, Pune, India. Counselling was available in the unlikely event of a participant becoming distressed by the questioning, and psychiatric referral was possible for any cases of severe mental illness encountered during the data collection phase of the study.

Table 1 Demographic characteristics of participants

Variables	Community members			VHWs
	Male % (95% CI) (n = 111)	Female % (95% CI) (n = 129)	Total % (95% CI) (n = 240)	Total % (95% CI) (n = 60)
Age (years)				
≤29	12.6 (7.3–20.6)	17.1 (11.2–24.9)	15.0 (10.8–20.3)	5.0 (1.3–14.8)
30–39	15.3 (9.4–23.7)	17.1 (11.2–24.9)	16.3 (11.9–21.7)	31.7 (20.6–45.1)
40–49	25.2 (17.7–34.5)	22.5 (15.8–30.8)	23.8 (18.6–29.7)	26.6 (16.5–39.9)
50–59	16.2 (10.2–24.7)	21.7 (15.1–30.0)	19.2 (14.5–24.8)	21.7 (12.5–34.5)
60–69	24.3 (16.9–33.6)	18.6 (12.5–26.6)	21.3 (16.4–27.1)	15.0 (7.5–27.1)
≥70	6.3 (2.8–13.0)	3.1 (1.0–8.2)	4.6 (2.4–8.3)	0
Marital status				
Single	9.0 (4.6–16.3)	1.6 (0.3–6.0)	5.0 (2.7–8.8)	3.3 (0.6–12.5)
Married	90.1 (82.6–94.7)	81.4 (73.4–87.5)	85.8 (80.1–89.5)	61.7 (48.2–73.6)
Widowed/divorced/ separated	0.9 (0.1–5.6)	17.1 (11.2–24.9)	9.2 (6.3–14.2)	35.0 (23.5–48.5)
Education (years)				
None	39.6 (30.6–49.4)	62.0 (53.0–70.3)	51.7 (45.2–58.1)	50.0 (37.0–63.0)
1–4	19.8 (13.1–28.7)	17.1 (11.2–24.9)	18.3 (13.8–23.9)	23.3 (13.8–36.4)
5–11	32.4 (24.0–42.1)	20.2 (13.8–28.3)	25.8 (20.5–31.9)	26.7 (16.5–39.9)
12	2.7 (0.7–8.3)	0.8 (0–4.9)	1.7 (0.5–4.5)	0
Tertiary	5.4 (2.2–11.9)	0	2.5 (1.0–5.6)	0

Results

Demographic characteristics

All people asked to participate in the study agreed. Demographic characteristics of participants are summarised in Table 1. Most community members were married (86%), and more than half (52%) had never attended school. The VHWs had a similar low level of education (50% had never been to school), but more were widowed/divorced/separated than in the community sample.

Attitudes to people with mental disorders

Attitudes to people with mental disorders were explored in a number of different ways. Participants were asked whether the people in each of the vignettes were, in the long term (with treatment), more, less, or just as likely than others in the community to engage in certain behaviours (e.g. violence) and be able to fulfil certain social roles (e.g. parenting) (Table 2).

Participants were also asked whether they agreed or disagreed (or neither) with a range of attitudinal statements relating to the people in the vignettes (Table 3).

Univariate analyses of social distance from people with mental disorders

Participants were asked about their willingness to form a range of personal relationships with people such as those described in the vignettes (possible responses were 'yes' or 'no') (Table 4).

A social distance score was calculated: the minimum possible score was zero, indicating willingness to engage with the person in the vignette in all of the defined relationships, and the maximum score was five, indicating unwillingness to engage. Community members and VHWs were combined for this analysis. The mean score for the depression vignette was 0.71 (range 0–5, SD 1.3), and for the psychosis vignette was 1.54 (range 0–5, SD 1.9), indicating that people desired more social distance from the person in the psychosis vignette. The relationships between the social distance score and demographic, labelling and causation variables, perceived dangerousness, and previous contact were investigated.

In the depression vignette, greater social distance was significantly associated ($P < 0.05$) with perceiving the person as dangerous, and agreeing that the problem is a real medical illness. Reduced social distance was associated with being a VHW, labelling the problem as stress, seeing it as a sign of personal weakness, and a range of perceived

Table 2 Proportion agreeing on the likelihood (compared to others) of people in the vignettes engaging in a range of behaviours and social roles

Behaviour or social role	Depression % (95% CI)		Psychosis % (95% CI)	
	CM ($n = 240$)	VHW ($n = 60$)	CM ($n = 240$)	VHW ($n = 60$)
Be violent				
More likely	17.1 (12.7–22.6)	23.3 (13.8–36.3)	20.8 (16.0–26.6)	25.0 (15.1–38.1)
Just as likely	77.1 (71.1–82.1)	68.3 (54.9–79.4)	74.6 (68.5–79.9)	71.6 (58.4–82.2)
Less likely	5.8 (3.4–9.8)	8.3 (3.1–19.1)	4.6 (2.4–8.3)	3.3 (0.6–12.5)
Have poor relationships				
More likely	5.0 (2.7–8.8)	8.3 (3.1–19.1)	11.3 (7.7–16.1)	8.3 (3.1–19.1)
Just as likely	87.1 (82.0–90.9)	86.7 (74.9–93.7)	84.2 (78.8–88.4)	86.7 (74.9–93.7)
Less likely	7.9 (5.0–12.3)	5.0 (1.3–14.8)	4.6 (2.4–8.3)	5.0 (1.3–14.8)
Attempt suicide				
More likely	25.4 (20.1–31.5)	16.7 (8.7–29.0)	30.4 (24.8–36.7)	23.3 (13.8–36.3)
Just as likely	59.2 (52.6–65.4)	61.7 (48.2–73.6)	54.6 (48.1–61.0)	58.3 (44.9–70.7)
Less likely	15.4 (11.2–20.8)	21.7 (12.5–34.5)	15.0 (10.9–20.3)	18.3 (9.9–30.8)
Have a good marriage				
More likely	3.3 (1.6–6.7)	1.7 (0.1–10.1)	3.3 (1.6–6.7)	3.3 (0.6–12.5)
Just as likely	88.3 (83.9–92.3)	95.0 (85.2–98.7)	85.8 (80.6–89.9)	91.7 (80.9–96.9)
Less likely	7.9 (5.0–12.3)	3.3 (0.6–12.5)	10.8 (7.3–15.6)	5.0 (1.3–14.8)
Be a caring parent				
More likely	3.8 (1.8–7.2)	3.3 (0.6–12.5)	2.1 (0.8–5.0)	3.3 (0.6–12.5)
Just as likely	89.2 (84.4–92.7)	91.7 (80.9–96.9)	86.3 (81.1–90.2)	91.7 (80.9–96.9)
Less likely	7.1 (4.3–11.3)	5.0 (1.3–14.8)	11.7 (8.0–16.6)	5.0 (1.3–14.8)
Work effectively				
More likely	1.7 (0.5–4.5)	1.7 (0.1–10.1)	1.7 (0.5–4.5)	5.0 (1.3–14.8)
Just as likely	89.6 (84.8–93.0)	91.7 (80.9–96.9)	84.2 (78.8–88.4)	90.0 (78.8–95.9)
Less likely	8.8 (5.6–13.2)	6.7 (2.2–17.0)	14.2 (10.1–19.4)	5.0 (1.3–14.8)

CM Community members, *VHW* village health workers

causes (family arguments, lack of control over life decisions, addiction, quarrelling with neighbours and friends, work and financial problems, bereavement, major events, and anxiety) (Table 5).

In the psychosis vignette, greater social distance was significantly associated with labelling the problem as a brain/mind problem, perceiving the person as dangerous, and perceiving the cause as a lack of control over life decisions or genetic. Reduced social distance was associated with being a VHW, a range of labels for the problem (depression, mental illness, psychological/emotional problem), seeing it as a sign of personal weakness, and a range of perceived causes (infection, addiction, work problems, bereavement, major events and childhood difficulties) (Table 5).

Sex, age, education and previous contact with a family member or friend with a similar problem were not associated with social distance scores for either vignette.

Multivariate analyses of predictors of social distance

All variables significantly associated ($P < 0.05$) with the social distance score were entered into a regression model for each of the vignettes. After controlling for covariates, desired social distance from the person in the depression vignette was greater among those who perceived the person to be dangerous. Social distance was reduced for VHWs (compared with community members), those who agreed that the problem was a sign of personal weakness, or it was caused by family arguments (Table 6).

Desired social distance from the person in the psychosis vignette was greater among those who perceived the person to be dangerous, labelled the disorder as a mind/brain problem, or agreed that it was caused by a lack of control over life decisions or genetic factors. It was reduced among VHWs, those who agreed that the problem was a sign of personal weakness or it was caused by an infection (Table 6).

Discussion

This study of mental health literacy in a poor rural area of Maharashtra surveyed 240 randomly selected village people and 60 village health workers. These findings reveal mixed attitudes to people with mental disorders. It is

Table 3 Proportion agreeing (or otherwise) with statements pertaining to people in the vignettes

Statements	Depression % (95% CI)		Psychosis % (95% CI)	
	CM (n = 240)	VHW (n = 60)	CM (n = 240)	VHW (n = 60)
People with this problem can snap out of it				
Agree	27.1 (21.7–33.2)	21.7 (12.5–34.5)	18.8 (14.1–24.4)	33.3 (22.0–46.8)
Neither agree or disagree	27.1 (21.7–33.2)	11.7 (5.2–23.2)	27.9 (22.4–34.1)	16.7 (8.7–29.0)
Disagree	45.8 (39.4–52.4)	66.7 (53.2–78.0)	53.3 (46.8–59.7)	50.0 (37.0–63.0)
This problem is a sign of personal weakness				
Agree	64.6 (58.1–70.6)	70.0 (56.6–80.8)	62.5 (56.0–68.6)	73.3 (60.1–83.5)
Neither agree or disagree	13.3 (9.4–18.4)	10.0 (4.1–21.2)	9.6 (6.3–14.2)	10.0 (4.1–21.2)
Disagree	22.1 (17.1–28.0)	20.0 (11.2–32.7)	27.9 (22.4–34.1)	16.7 (8.7–29.0)
This problem is not a real medical illness				
Agree	87.5 (82.5–91.3)	90.0 (78.8–95.9)	92.5 (88.2–95.4)	98.3 (89.9–99.9)
Neither agree or disagree	6.3 (3.7–10.3)	5.0 (1.3–14.8)	2.5 (1.0–5.6)	0
Disagree	6.3 (3.7–10.3)	5.0 (1.3–14.8)	5.0 (2.7–8.8)	1.7 (0.1–10.1)
People with this problem are dangerous				
Agree	40.0 (33.8–46.5)	48.3 (35.4–61.5)	72.1 (65.9–77.6)	51.7 (38.5–64.6)
Neither agree or disagree	4.2 (2.1–7.8)	5.0 (1.3–14.8)	3.8 (1.8–7.2)	8.3 (3.1–19.1)
Disagree	55.8 (49.3–62.2)	46.7 (33.7–59.9)	24.2 (19.0–30.2)	40.0 (27.8–53.4)
It is best to avoid people with this problem				
Agree	42.5 (36.2–49.0)	26.7 (16.4–40.0)	69.2 (62.8–74.8)	46.7 (33.9–59.9)
Neither agree or disagree	2.9 (1.3–6.2)	5.0 (1.3–14.8)	2.9 (1.3–6.2)	3.3 (0.6–12.5)
Disagree	54.6 (48.0–61.0)	68.3 (54.9–79.4)	27.9 (22.4–34.1)	50.0 (37.0–63.0)
People with this problem are erratic				
Agree	52.1 (45.6–58.5)	60.0 (46.5–72.1)	79.2 (73.2–84.0)	68.3 (54.9–79.4)
Neither agree or disagree	4.2 (2.1–7.8)	8.3 (3.1–19.1)	4.2 (2.1–7.8)	11.7 (5.2–23.2)
Disagree	43.8 (37.4–50.3)	31.7 (20.6–45.0)	16.7 (12.3–22.1)	20.0 (11.2–32.7)

CM Community members, *VHW* village health workers

Table 4 Proportion agreeing to have various forms of relationship with the people in the vignettes

Would you be willing to…	Depression % (95% CI)		Psychosis % (95% CI)	
	CM (n = 240)	VHW (n = 60)	CM (n = 240)	VHW (n = 60)
Be a neighbour to the person?	91.3 (86.8–94.4)	98.3 (89.9–99.9)	73.8 (67.6–79.1)	98.3 (89.9–99)
Spend time socialising with the person?	91.7 (87.2–94.7)	98.3 (89.9–99.9)	71.3 (65.0–76.8)	100
Develop a friendship with the person?	87.5 (82.5–91.3)	96.7 (87.5–99.4)	63.8 (57.3–69.8)	100
Work closely with the person?	86.7 (81.6–90.6)	96.7 (87.5–99.4)	65.8 (59.4–71.7)	100
Have person marry into your family?	60.8 (54.3–70.0)	80.0 (67.3–88.8)	40.8 (34.6–47.4)	66.7 (53.2–78.0)

CM Community members, *VHW* village health workers

encouraging that the people in the vignettes were mostly perceived to be as likely as others to fulfil their social roles and to make an economic contribution to the family. However, some stigmatising attitudes were also evident. A substantial proportion of participants agreed that people with these types of problems are a danger to others, can be erratic in their behaviour, and should be avoided, particularly in the case of the person with psychosis. These views were held more firmly by the community members than the

VHWs. It is not surprising that the VHWs had more tolerant attitudes to people with mental disorders, as CRHP has a long history of discouraging discrimination based on gender, caste or illness (such as leprosy), and this value features strongly in their training.

The increased risk of suicide among people with mental disorders was not well recognised in either vignette, even though it was explicitly stated that the woman in the depression vignette was contemplating suicide. The VHWs

Table 5 Correlates of social distance scores

Variable	Depression			Psychosis		
	Mean score	n	P value	Mean score	n	P value
VHW status						
Yes	0.30	60	0.006	0.35	60	<0.001
No	0.81	240		1.84	240	
Labelling the problem						
Depression						
Yes	0.61	167	NS	0.66	76	<0.001
No	0.83	133		1.84	224	
Brain/mind problem						
Yes	0.71	108	NS	1.93	213	<0.001
No	0.71	192		0.57	87	
Mental illness						
Yes	0.69	150	NS	0.95	91	<0.001
No	0.73	150		1.80	209	
Psychological/emotional problem						
Yes	0.54	93	NS	1.10	114	0.002
No	0.79	207		1.81	186	
Stress						
Yes	0.46	155	<0.001	1.65	171	NS
No	0.98	145		1.39	129	
Problem is a sign of personal weakness						
Agree	0.52	197	0.001	1.07	223	<0.001
Disagree	1.07	103		2.90	77	
Problem is not a real medical illness						
Agree	0.66	264	0.049	1.56	287	NS
Disagree	1.11	36		1.08	13	
People with this problem are dangerous						
Agree	1.02	125	<0.001	2.03	204	<0.001
Disagree	0.49	175		0.49	96	
Causes of the problem						
Infection						
Agree	0.87	118	0.078	1.25	110	0.041
Disagree	0.60	180		1.71	189	
Family tensions						
Agree	0.57	268	<0.001	1.54	266	NS
Disagree	1.88	32		1.56	34	
Lack of control over life decisions						
Agree	0.59	241	0.001	1.71	232	0.004
Disagree	1.22	58		0.96	68	
Being addicted						
Agree	0.40	176	<0.001	1.31	173	0.013
Disagree	1.14	123		1.86	127	
Family member addicted						
Agree	0.69	278	NS	1.40	268	<0.001
Disagree	0.95	22		2.74	31	
Quarrelling with neighbours and friends						
Agree	0.44	221	<0.001	1.44	239	NS
Disagree	1.47	77		1.88	60	

Table 5 continued

Variable	Depression			Psychosis		
	Mean score	n	P value	Mean score	n	P value
Work problems						
Agree	0.55	252	<0.001	1.39	256	0.001
Disagree	1.56	48		2.41	44	
Financial problems						
Agree	0.61	275	<0.001	1.48	272	NS
Disagree	1.75	24		2.04	27	
Bereavement						
Agree	0.57	262	<0.001	1.31	261	<0.001
Disagree	1.71	35		3.05	39	
Major event (drought, accident etc.)						
Agree	0.57	260	<0.001	1.33	255	<0.001
Disagree	1.65	40		2.66	44	
Problems from childhood						
Agree	0.60	272	<0.001	1.33	268	<0.001
Disagree	1.79	28		3.26	31	
Inherited/genetic						
Agree	0.89	107	0.072	2.29	147	<0.001
Disagree	0.60	189		0.82	151	
Being an anxious person						
Agree	0.62	239	0.013	1.65	226	0.073
Disagree	1.08	60		1.19	73	
Family member or friend with similar problem						
Yes	0.60	30	NS	1.24	25	NS
No	0.69	258		1.60	267	

seemed to be even less aware of this risk than community members. In a country where suicide is an important public health problem [37], this highlights the urgent need to enhance mental health literacy in the community, and develop mental health services in primary health care settings. More social research on this topic is needed because the understandings, context and circumstances of suicide in rural India, as well as the optimal strategies for prevention, are potentially quite different from the situation in developed countries.

In terms of social distance, participants were generally willing to be a friend, neighbour or workmate of people with mental disorders. However, having such a person marry into the family was the least preferred form of engagement, and arguably in a country like India where marriage plays such a central role in the culture, this is the litmus test question. For both disorders, community members desired greater social distance than VHWs. Also congruent with research findings from other parts of the world [10, 12, 13, 17–19], one of the most influential predictors of social distance for both depression and psychosis was the perception of dangerousness. Correcting

Table 6 Multiple regression analysis of predictors of social distance for depression and psychosis vignettes

Variable	B Coefficient	95% confidence interval	
		Lower	Upper
Depression			
Being a VHW	−0.399	−0.734	−0.64
Sign of personal weakness	−0.375	−0.662	−0.089
Perceived as dangerous	0.664	0.389	0.939
Caused by family conflict	−0.764	−1.258	−0.271
Constant	2.732		
Psychosis			
Being a VHW	−0.912	−1.334	−0.490
Labelled a brain/mind problem	0.711	0.274	1.149
Sign of personal weakness	−0.959	−1.367	−0.550
Perceived as dangerous	0.921	0.551	1.291
Possible cause infection	−0.618	−0.969	−0.267
Possible cause no control over life	0.559	0.135	0.983
Possible cause genetic	0.721	0.361	1.081
Constant	2.492		

perceptions of dangerousness may help to reduce the impact of stigma on the lives of people with mental disorders, but in this community, it is not clear what generates and perpetuates these views, as many people do not have access to television and other electronic media, so are less likely to have been exposed to stereotypes of the 'dangerous mad person'. If the perception of dangerousness is generated by personal experience with people who have untreated mental disorders, it may be more difficult to address.

For both disorders, reduced social distance was consistently associated with agreeing that the problems are caused by personal weakness. This is in contrast to findings from surveys in a number of Western countries that have found a positive association between social distance and viewing mental disorders as a sign of personal weakness [36]. Extensive discussions with local staff revealed that the Marathi translation of 'personal weakness' may not have been understood in the same way by all the participants. While some may have understood the translation to mean a character shortcoming (as intended in English), those who were less educated may have assumed it was referring to physical weakness, and possibly even sexual problems (the latter alluding not only to sexual performance but also sexual abstinence).

Beliefs about causation also influenced social distance. In the case of depression, perceiving a social cause (family conflict) was associated with reduced social distance. For psychosis, perceiving the cause as genetic or due to lack of control over life resulted in increased social distance, while perceiving infection as a possible cause was associated with decreased social distance. In the case of psychosis, labelling was also important; labelling the disorder as a mind/brain problem predicted greater social distance.

These findings suggest that promoting Western biomedical explanatory models of mental disorders in this part of the world may result in increased stigma. Most of the community members and the VHWs did not conceptualise the problems in the two vignettes as a 'real medical illness', rather they endorsed social and economic models of causation, which in the context of rural India where poverty is common and gender and caste-based discrimination persists, may be appropriate. Endorsing socio-economic causes tended to be associated with reduced social distance, while endorsing an inherited cause increased social distance. This is possibly linked to people's unwillingness to have such a person marry into the family due to the perception that subsequent children may inherit a mental disorder. Additionally, socio-economic factors that were thought to contribute to the development of mental disorders would be viewed in this context as things that happen to people i.e. the blame is located beyond the individual, which may engender a more sympathetic response. Other authors working with cross-cultural samples have also raised the possibility that promoting biological explanations of mental disorders may increase rather than decrease discrimination in certain settings [22].

The questionnaire used in the present survey was based on the one used in national surveys in Australia and Japan [11]. When the findings from these three culturally and socio-economically diverse countries are compared, consistently patterned attitudinal differences emerge. For both the depression and psychosis vignette, those from India were much more likely to endorse the following beliefs about mental disorders: that the problems are a sign of personal weakness (depression: 65% India, 45% Japan, 17% Australia; psychosis: 62% India, 47% Japan, 19% Australia); that it is not a real medical illness (depression: 87% India, 38% Japan, 15% Australia; psychosis: 92% India, 31% Japan, 15% Australia); and that people with such problems are dangerous (depression: 40% India, 16% Japan, 18% Australia; psychosis: 72% India; 20% Japan; 25% Australia).

However, these attitudes did not necessarily translate into a desire for greater social distance, as the Indian sample was much more willing than the Japanese to engage with people experiencing mental disorders (both depression and psychosis/schizophrenia). The Indian sample was at least as willing as Australians to engage with people with depression, but less willing than Australians to engage in the case of psychosis/schizophrenia, as is evident in the following summary: willing to be a neighbour (depression: 91% India, 22% Japan, 89% Australia; psychosis: 74% India, 17% Japan, 85% Australia); willing to socialise with

such a person (depression: 92% India, 41% Japan, 88% Australia; psychosis: 71% India; 33% Japan, 85% Australia); willing to be friends (depression: 88% India, 44% Japan, 91% Australia; psychosis: 64% India, 36% Japan, 88% Australia); willing to work with such a person (depression: 87% India, 46% Japan, 80% Australia; psychosis: 66% India, 41% Japan, 76% Australia); and willing to have such a person marry into their family (depression: 61% India, 16% Japan, 66% Australia; psychosis: 41% India, 11% Japan, 61% Australia).

These observed differences highlight the importance of understanding complex concepts such as mental disorders and stigma in context. It is probable that these differences are influenced not only by cultural variations in the ways in which mental disorders are constructed and construed within each of these countries, but also by cultural variations in the way people understand and respond to survey questions. For example, the extent to which responses are influenced by social desirability bias may be determined by an interaction between culture and question type. Another influential factor is the extent to which campaigns to counteract the social construction of stigma have been successfully implemented in each of the settings (as has occurred in Australia).

In addition to the challenges associated with the influence of social desirability bias and ensuring the equivalence of meaning across cultures and languages, other limitations should be considered when interpreting the findings from this study. Even though community members were systematically sampled, older participants were somewhat over-represented, probably as a result of both seasonal and rural-to-urban migration for work among younger people. Also, the people participating in this survey belong to communities that have been served by a successful and mature primary health care project that actively promotes tolerance of others, so their views are not necessarily typical of all rural Maharashtran communities, or of other Indian communities given the socio-cultural variability within the country.

Conclusion

The findings from this study enhance our knowledge of community attitudes to people with mental disorders in an area of rural India, and highlight the importance of understanding these issues in context. The people in this study did not subscribe to the concept of mental disorders as a form of illness, and endorsement of socio-economic determinants (such as family tensions) was associated with reduced social distance, while endorsement of bio-medical concepts (such as labelling psychosis as a mind-brain problem or the cause as genetic) was associated with greater social distance. Consequently, promoting the bio-medical model of mental illness in this setting may contribute to increased discrimination. As in other countries, identifying effective strategies for recasting the perception of people with mental disorders as dangerous is likely to reduce discrimination.

This community was relatively accepting of people with mental disorders compared to others, perhaps out of necessity because, in rural India, people with mental disorders generally remain within the family and village community due to an absence of viable alternatives. However, despite this relative acceptance, false beliefs and negative attitudes were evident, highlighting the need for improved mental health literacy. Given the pivotal role of VHWs in their communities and the fact that they reported less desire for social distance than community members, they are ideally placed to communicate, model and shape positive attitudes to people with mental disorders, just as they have done already for people with diseases such as leprosy and AIDS. In order to do this effectively, the VHWs need to receive training in mental health that is informed by the findings of this survey, and appropriate in a context of limited literacy and resources. This is the next step towards integrating mental health into this particular primary health care setting.

References

1. Link BG, Phelan JC (2001) Conceptualising stigma. Annu Rev Sociol 27:363–385
2. Corrigan PW, Watson AC (2002) Understanding the impact of stigma on people with mental disorder. World Psychiatry 1:16–20
3. Corrigan PW, Edwards AB, Green A, Diwan SL, Penn DL (2001) Prejudice, social distance, and familiarity with mental disorder. Schizophr Bull 27:219–225
4. Corrigan P (2004) How stigma interferes with mental health care. Am Psychol 59:614–625
5. Sayce L (1998) Stigma, discrimination and social exclusion: what's in a word? J Mental Health 7:331–344
6. Hinshaw SP, Stier A (2008) Stigma as related to mental disorders. Annu Rev Clin Psychol 4:367–393
7. Baumann AE (2007) Stigmatization, social distance and exclusion because of mental disorder: the individual with mental disorder as a 'stranger'. Int Rev Psychiatry 19:131–135
8. Link BG, Yang LH, Phelan JC, Collins PY (2004) Measuring mental disorder stigma. Schizophr Bull 30:511–541

9. Angermeyer MC, Matschinger H (2003) Public beliefs about schizophrenia and depression: similarities and differences. Soc Psychiatry Psychiatr Epidemiol 38:526–534

10. Angermeyer MC, Dietrich S (2006) Public beliefs about and attitudes towards people with mental disorder: a review of population studies. Acta Psychiatr Scand 113:163–179

11. Griffiths KM, Nakane Y, Christensen H, Yoshioka K, Jorm AF, Nakane H (2006) Stigma in response to mental disorders: a comparison of Australia and Japan. BMC Psychiatry 6:21

12. Marie D, Miles B (2008) Social distance and perceived dangerousness across four diagnostic categories of mental disorder. Aust NZ J Psychiatry 42:126–133

13. Martin JK, Pescosolido BA, Tuch SA (2000) Of fear and loathing: the role of 'disturbing behaviour', labels, and causal attribution in shaping public attitudes toward people with mental disorder. J Health Soc Behav 41:208–223

14. Bag B, Yilmaz S, Kirpinar I (2006) Factors influencing social distance from people with schizophrenia. Int J Clin Pract 60:289–294

15. Grausgruber A, Meise U, Katschnig H, Schony W, Fleischhacker WW (2007) Patterns of social distance towards people suffering from schizophrenia in Austria: a comparison between the general public, relatives and mental health staff. Acta Psychiatr Scand 115:310–319

16. Jorm AF, Griffiths KM (2008) The public's stigmatizing attitudes towards people with mental disorders: how important are biomedical conceptualizations? Acta Psychiatr Scand 118:315–321

17. Corrigan PW, Rowan D, Green A, Lundin R, River P, Uphoff-Wasowski K, White K, Kubiak MA (2002) Challenging two mental disorder stigmas: personal responsibility and dangerousness. Schizophr Bull 28:293–309

18. Angermeyer MC, Matschinger H (2003) The stigma of mental disorder: effects of labelling on public attitudes towards people with mental disorder. Acta Psychiatr Scand 108:304–309

19. Read J, Haslam M, Sayce L, Davies E (2006) Prejudice and schizophrenia: a review of the 'mental disorder is a disorder like any other' approach. Acta Psychiatr Scand 114:303–318

20. Alexander LA, Link BG (2003) The impact of contact on stigmatising attitudes toward people with mental disorder. J Mental Health 12:271–289

21. Adewuya AO, Makanjuola R (2008) Social distance towards people with mental disorder in southwestern Nigeria. Aust NZ J Psychiatry 42:389–395

22. Dietrich S, Beck M, Bujantugs B, Kenzine D, Matschinger H, Angermeyer MC (2004) The relationship between public causal beliefs and social distance toward mentally ill people. Aust NZ J Psychiatry 38:348–354

23. Angermeyer MC, Buyantugs L, Kenzine DV, Matschinger H (2004) Effects of labelling on public attitudes towards people with schizophrenia: are there cultural differences? Acta Psychiatr Scand 109:420–425

24. Shibre T, Negash A, Kullgren G, Kebede D, Alem A, Fekadu D, Medhin G, Jacobsson L (2001) Perception of stigma among family members of individuals with schizophrenia and major affective disorders in rural Ethiopia. Soc Psychiatry Psychiatr Epidemiol 36:299–303

25. Coker EM (2005) Selfhood and social distance: toward a cultural understanding of psychiatric stigma in Egypt. Soc Sci Med 61:920–930

26. Weiss MG, Ramakrishna J, Somma D (2006) Health-related stigma: rethinking concepts and interventions. Psychol Health Med 11:277–287

27. Bhugra D (2006) Severe mental disorder across cultures. Acta Psychiatr Scand 113(Suppl 429):17–23

28. Yang LH (2007) Application of mental disorder stigma theory to Chinese societies: synthesis and new directions. Singap Med J 48:977–985

29. Raguram R, Weiss MG, Channabasavanna SM, Devins GM (1996) Stigma, depression, and somatisation in South India. Am J Psychiatry 153:1043–1049

30. Thara R, Srinivasan TN (2000) How stigmatising is schizophrenia in India? Int J Soc Psychiatry 46:135–141

31. Chowdhury AN, Sanyal D, Bhattacharya A, Dutta SK, De R, Banerjee S, Bhattacharya K, Palit S, Bhattacharya P, Mondal RK, Weiss MG (2001) Prominence of symptoms and level of stigma among depressed patients in Calcutta. J Indian Med Assoc 99:20–23

32. Weiss MG, Jadhav S, Raguram R, Vounatsou P, Littlewood R (2001) Psychiatric stigma across cultures: local validation in Bangalore and London. Anthropol Med 8:71–87

33. Charles H, Manoranjitham SD, Jacob KS (2007) Stigma and explanatory models among people with schizophrenia and their relatives in Vellore, South India. Int J Soc Psychiatry 53:325

34. WHO, WONCA (2008) Integrating mental health into primary care: a global perspective. World Health Organization, World Organization of Family Doctors (WONCA), Geneva

35. Kermode M, Herrman H, Arole R, White J, Premkumar R, Patel V (2007) Empowerment of women as a strategy for mental health promotion in developing countries: a qualitative study from rural Maharashtra. BMC Public Health 7:225

36. Jorm A, Oh E (2009) Desire for social distance from people with mental disorders: a review. Aust NZ J Psychiatry 43:183–200

37. Vijayakumar L (2005) Suicide and mental disorders in Asia. Int Rev Psychiatry 17:109–114