Public Health 123 (2009) 476–483

Contents lists available at ScienceDirect

Public Health

journal homepage: www.elsevierhealth.com/journals/pubh

Original Research

Community beliefs about treatments and outcomes of mental disorders: A mental health literacy survey in a rural area of Maharashtra, India

M. Kermode [a,*], K. Bowen [b], S. Arole [c], K. Joag [d], A.F. Jorm [e]

[a] Nossal Institute for Global Health, University of Melbourne, Alan Gilbert Building, 161 Barry St, Carlton, Victoria 3010, Australia
[b] National Centre for Epidemiology and Population Health, Australian National University, Canberra, ACT, Australia
[c] Comprehensive Rural Health Project, Jamkhed, Maharashtra, India
[d] Ruby Hall Clinic, Pune, Maharashtra, India
[e] ORYGEN Research Centre, University of Melbourne, Melbourne, Victoria, Australia

ARTICLE INFO

Article history:
Received 25 February 2009
Received in revised form
16 May 2009
Accepted 8 June 2009
Available online 15 July 2009

Keywords:
Mental health
Health knowledge, attitudes, practices
Depression
Psychosis
India

SUMMARY

Objectives: Mental health remains a neglected issue in most developing countries, especially in rural areas where access to effective mental health services is limited. The integration of mental health into primary health care is being promoted as a strategy to address this problem. Consequently, there is an urgent need to enhance mental health awareness among communities, and to provide mental health training for primary healthcare staff. In order to do this effectively, it is important to understand and take account of local views on mental health and illness. As such, a mental health literacy (MHL) assessment was undertaken in a poor, rural area of Maharashtra, India to inform the development of a mental health training programme.

Study design: A cross-sectional MHL survey was undertaken in late 2007.

Methods: Data were collected from 240 systematically sampled community members and 60 purposively sampled village health workers (VHWs) using an interviewer-administered questionnaire. Participants were presented with two vignettes describing people experiencing symptoms of mental disorders (depression, psychosis), and were asked to name the problems, and to identify the treatments and people that were most likely to be helpful (or otherwise), and the likely outcomes for people with such problems.

Results: Most participants recognized that the people in the vignettes were experiencing a mental health problem. 'Depression' was the most common label for the problems experienced in the depression vignette, and 'a mind/brain problem' was the most common label in the case of the psychosis vignette. Socio-economic interventions provided by family, friends and neighbours were considered to be most helpful. Local VHWs and doctors were also viewed as potentially helpful, but psychiatrists less so. Approximately half of the sample thought that dealing with the problem alone would be helpful. Special diets, tonics, appetite stimulants and sleeping pills were also strongly endorsed, but awareness of psychiatric medications was negligible.

Conclusion: The findings from this study highlight the need to enhance MHL in this community. Additionally, there is a need to build the capacity of the primary healthcare staff, including the VHWs, so that they are equipped to provide an effective local response for people experiencing mental health problems.

Introduction

It is estimated that 450 million people experience a mental disorder at any one time, most of whom live in developing countries.[1] While mental disorders are present in all populations, they are more common amongst the poor, and the course and outcome of disorders are influenced by the socio-economic status of individuals.[1,2] Despite the substantial burden of disease associated with mental disorders, and the availability of effective and affordable treatments, mental health remains a neglected issue in most developing countries, where governments allocate <1% of their health budget to mental health. The mental health services that do exist are generally institutionally based, lack basic resources, staffed by inadequately trained personnel, and provide sub-standard treatment and care.[1–4] Additionally, people with mental disorders and their families experience substantial stigma

* Corresponding author. Tel.: +61 3 83441992; fax: +61 3 83441930.
E-mail address: mkermode@unimelb.edu.au (M. Kermode).

0033-3506/$ – see front matter © 2009 The Royal Society for Public Health. Published by Elsevier Ltd. All rights reserved.
doi:10.1016/j.puhe.2009.06.004

and discrimination; this influences their willingness to seek help, the quality of help they receive, and the likelihood that they will adhere to treatment.[1] In recent years, recognition of mental health as an important global health issue has grown, as evidenced by the formation of the Movement for Global Mental Health, which evolved from *The Lancet's* 2007 series on global mental health[5]; and the recent release of two reports by the World Health Organization (WHO), one on integrating mental health into primary care[6] and another by the Mental Health Gap Action Programme.[4]

The availability and affordability of psychiatrists in developing country settings (especially in rural areas) is limited, making specialist psychiatric care an unlikely option for most people with mental disorders. In many of these settings, integrating mental health into primary health care is the only feasible model of service provision if people with mental disorders are to receive appropriate treatment and care. People with mental health problems frequently present to primary healthcare clinics,[6,7] often with a variety of unexplained somatic complaints,[8,9] but primary healthcare staff generally lack the skills required to make an appropriate diagnosis and provide a reasonable standard of care.[6] If integration of mental health into primary health care is to be successful, a concerted effort is needed to build the capacity of primary healthcare workers so that they can respond effectively to the needs of people with mental disorders in their communities.[1,3,6]

An effective response to mental health problems in developing country settings requires more than mental health training for primary healthcare workers. If people with mental disorders are to receive appropriate treatment and care, it is also necessary for grassroots workers specifically, and the broader community generally, to have knowledge and understanding of mental health. This whole-of-community approach is embedded in the concept of mental health literacy (MHL), which is defined as 'knowledge and beliefs about mental disorders which aid their recognition, management and prevention'.[10] MHL research has uncovered low levels of community awareness regarding recognition of mental disorders, the efficacy of interventions, and the appropriate actions to be taken when someone has a mental disorder, as well as stigmatizing attitudes towards people with mental disorders.[10,11] Most of the MHL research to date has been undertaken in developed countries such as Australia and Japan,[12,13] so there is limited information regarding MHL in developing country settings. As such, the authors undertook an MHL assessment in a rural area of Maharashtra, India in order to inform the development of a mental health training programme for local community health workers based in a primary healthcare setting. This paper reports on findings in relation to recognition and labelling of mental disorders, and beliefs about treatments and outcomes. The findings regarding beliefs about the causes and risks for mental disorders, and attitudes to people with mental disorders are reported elsewhere.[14]

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 female), all of whom were aged ≥18 years. The local study partner was the Comprehensive Rural Health Project (CRHP) located in Jamkhed, Maharashtra. The CRHP is a mature, primary healthcare programme that has served more than 300 villages over three decades of work (http://www.jamkhed.org). At the heart of the programme are a cadre of trained VHWs who are local volunteer women residing in the villages and providing a range of health services. Consistent with the recent WHO report,[6] the CRHP is motivated to integrate mental health into their primary healthcare activities. This study builds on earlier work undertaken in this setting.[15]

Questionnaire

The questionnaire was adapted from an existing MHL survey[12,13] 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) (Box 1). Questions about the vignettes invited a mixture of open and closed responses regarding the name of the problem and its causes, the helpfulness of potential service providers, treatments, prognosis and attitudes. The vignettes, questions and response categories were translated into Marathi with support from a Marathi-speaking psychiatrist. Appropriate words for concepts such as depression were discussed thoroughly and the questionnaire was pilot tested. The survey was administered by the interviewer due to low literacy levels in the community. The mean duration of interviews was 42 min (range 30–60 min).

For the psychosis vignette, female participants were provided with a female version of the story and male participants were provided with a male version (symptoms were consistent in both), as it was felt that this would help participants to identify more easily with the person in the story. It was not possible 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, a short version of the General Health Questionnaire (GHQ12) was administered,[16] but the results are not reported in this paper.

Sampling

A cluster sampling technique was used to sample the community members, and this was conducted in three phases: (i) village; (ii) household; and (iii) participant. Ten villages were selected at random from the 16 villages participating in the CRHP within the Jamkhed 'block' (a municipal sub-division). These villages consist of between 400 and 5000 people. The sample size calculation was based on the prevalence of common mental disorders (estimated

Box 1
Vignettes for depression and psychosis from the mental health literacy survey.

Depression vignette

Meena is 30 years old and was fine until 6 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 vignette (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 1 week, he has refused to eat food as he suspects his food is being poisoned by the neighbours.

using the GHQ12). In the absence of relevant local data, the prevalence of cases was estimated to be 50% (this estimate requires the largest sample size). For the 95% confidence intervals to be 50 ± 9 percentage 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 10 selected villages was available, and 24 households were selected at random from each village. Finally, a list of family members aged $\geq$18 years was developed for each of the selected households, and one household member was selected at random from this list. Local research assistants were strongly encouraged to persevere with locating identified participants, which often involved data collection in the early morning and late evening. The 60 VHWs were purposively sampled when attending routine training programmes.

Data collection

Data were collected by three local women (social worker, teacher and science graduate) trained by the research team. Training included an introduction to mental health and research methods, interviewing skills, sampling and recruitment, and ethical aspects of research. All participants were given a small gift in appreciation for their time.

Data analysis

The data were analysed using Statistical Package for the Social Sciences Version 15.0 (SPSS Inc., Chicago, IL, USA). 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. Ninety-five percent confidence intervals were calculated to indicate uncertainty of the prevalence estimates for each group. All open-ended responses were translated into English and systematically grouped thematically for quantification.

Results

Demographic characteristics

All people asked to participate in the study agreed. Demographic characteristics of the participants are summarized 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.

Recognition and labelling of mental disorders

Participants were read each of the vignettes and asked (in an open-ended way) to name the problem (more than one response was possible). The majority of participants were able to identify that the people in the vignettes were experiencing a mental health problem, even if they were not always able to name the problem correctly. In the case of depression, more than half of the participants said that Meena had depression. The majority (93% community members, 97% VHWs) identified either depression or a range of other plausible names for the problem, including a brain/mind problem, mental illness, and a psychological or emotional problem. Stress was also widely endorsed as a label for this problem (Table 2).

In the case of the psychosis vignette, the most common response was that the person had a brain/mind problem. Almost all participants (93% community members, 93% VHWs) identified at least one plausible name for the problem (either a brain/mind problem, a psychological/emotional problem or mental illness). However, a substantial minority (mis-) identified depression as a possibility. Once again, the problem was frequently labelled as stress (Table 2).

Perceived effectiveness of interventions

Participants were asked what they would do to help the person in the vignette if it was someone they had known for a long time and cared about. The open-ended responses to this question were thematically coded (one response per participant), and are summarised in Table 3. For the depression scenario, the most common response was the provision of interpersonal support, e.g. give love and affection. The next most common response was to facilitate financial support for the person. Only a small proportion spontaneously mentioned taking the person to a doctor or hospital.

The response to this open-ended question in relation to the psychosis vignette was quite different (Table 3). The provision of interpersonal support was the preferred response among the VHWs, but taking the person to a doctor or hospital was favoured by community members. At least one-tenth said that they would arrange a marriage for the person. It was noted that the VHWs were

Table 1
Demographic characteristics of participants.

Variable	Community members			Village health workers
	% male (95% CI) ($n = 111$)	% female (95% CI) ($n = 129$)	% total (95% CI) ($n = 240$)	% total (95% CI) ($n = 60$)
Age (years)				
$\leq$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)
$\geq$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

CI, confidence interval.

Table 2
Proportion of participants providing various names for the conditions described in the vignettes (based on open-ended question).

Name of problem	Depression % (95% CI)		Psychosis % (95% CI)	
	CMs ($n = 240$)	VHWs ($n = 60$)	CMs ($n = 240$)	VHWs ($n = 60$)
Depression	55.4 (48.9–61.8)	56.7 (43.3–69.2)	23.3 (18.2–29.3)	33.3 (22.0–46.8)
Brain/mind problem	33.3 (27.5–39.7)	46.7 (33.9–59.9)	71.7 (65.4–77.2)	68.3 (54.9–79.4)
Mental illness	47.1 (40.7–53.6)	61.7 (48.2–73.6)	28.8 (23.2–35.0)	36.7 (24.9–50.1)
Psychological/emotional problem	28.3 (22.8–34.6)	41.7 (29.3–55.1)	35.0 (29.0–41.4)	50.0 (37.0–63.0)
Stress	48.3 (41.9–54.8)	65.0 (51.5–76.5)	57.9 (51.4–64.2)	53.3 (40.1–66.1)

CMs, community members; VHWs, village health workers; CI, confidence interval.
NB: More than one response was possible.

more inclined to give interpersonal support, less likely to refer the person to a doctor or hospital, and equally likely to suggest marriage.

Participants were asked structured questions about the helpfulness or otherwise of a range of possible treatments (pharmacological and non-pharmacological) for the problems identified in the vignettes (Table 4). They were invited to rate the options as 'helpful', 'harmful', 'neither' or 'it depends'. Once again, interpersonal interventions were favoured by both community members and VHWs, as were the administration of various tonics and medications (appetite stimulants, sleeping pills), as well as special diets.

Using structured questions, participants were asked to rate different categories of people as either 'helpful', 'harmful' or 'neither' for the people in the vignettes. They were also allowed a response of 'it depends' and 'don't know' (Table 5). Immediate community members (family, neighbours, friends) were most strongly endorsed as potentially helpful. Similarly, the VHWs were clearly viewed as having an important role to play. Local doctors were also judged to be helpful by the majority of participants, but psychiatrists less so. Approximately half of the sample were of the view that 'dealing with the problem alone' was a helpful strategy, and only a very small number thought that this was likely to be harmful.

Perceived outcomes for people with mental disorders

Structured questions were asked about anticipated recovery for the people in the vignettes, both with and without help (Table 6). In both vignettes, a positive outcome was generally anticipated if help was received, and a negative outcome was anticipated in the absence of help.

Discussion

This study of MHL in a poor rural area of Maharashtra found that both community members and VHWs were able to recognize the presence of a mental disorder, but their knowledge and understanding of effective responses and treatments were limited. They also clearly perceived differences in the nature of the conditions described in the two vignettes; the most common name for the problems experienced in the depression vignette was 'depression', while that for the psychosis vignette was a 'brain/mind problem'. However, this distinction was not particularly fine-tuned; about one-quarter of participants mislabelled the psychosis vignette as depression, and the broad catch-all term 'stress' was a popular label for both vignettes. However, it is arguably not essential for community members, or even VHWs, to make such diagnostic distinctions; more important is their capacity to recognize the range of symptoms commonly associated with the various mental disorders, and then respond and refer appropriately.

While family, friends and neighbours were viewed as most likely to be helpful to the people in the vignettes, certain professional groups (VHWs, local doctors) were also judged favourably, but the role of psychiatrists in the provision of mental health care was less well recognized. This is possibly due to the stigma attached to having a family member consult a psychiatrist. Additionally, psychiatrists are fairly inaccessible to village people, due to the distance that has to be travelled for consultation as well as their relatively elevated social status and high cost. The professionals judged to be helpful in this instance were those who already exist within the relatively small world of village life and are therefore known and trusted, whereas psychiatrists are relatively distant and unfamiliar service providers. A study in Delhi found that trust, accessibility and recommendations by significant others determined the choice of healthcare provider for people with mental disorders.[17] While the provision of support from family and friends is likely to have therapeutic value for people with mental disorders, it is also important that both community members and VHWs are able to recognize when additional professional services are required, and are able to seek help from appropriate sources.

The majority of participants did not consider the problems in either of the vignettes to be a 'real illness'.[14] This may at least partially explain why referring the person to a doctor or hospital was not a common response to the open-ended question about helpful actions, although community members were more likely to endorse this option than the VHWs in the case of the psychosis scenario. VHWs are often the first point of contact for health care in this setting, so it is essential that they have good knowledge and understanding of mental health concepts and treatments in order to promote appropriate responses and referrals. Psychosocial interventions including the provision of interpersonal and financial support were viewed by the majority of participants as the most helpful response. These findings are congruent with local views regarding the causes of mental distress, which are largely thought

Table 3
Proportion of participants identifying different actions to be taken for the people in the vignettes (based on open-ended question).

Responses	Depression % (95% CI)		Psychosis % (95% CI)	
	CMs ($n = 240$)	VHWs ($n = 60$)	CMs ($n = 240$)	VHWs ($n = 60$)
Provide interpersonal support	50.8 (44.3–57.3)	65.0 (51.5–76.5)	28.7 (23.1–35.0)	48.3 (35.4–61.5)
Facilitate financial support	29.4 (23.8–35.7)	25.0 (15.1–38.1)	23.2 (18.1–29.2)	11.7 (5.2–23.2)
Refer to doctor or hospital	14.3 (10.2–19.5)	5.0 (1.3–14.8)	33.3 (27.4–39.8)	16.7 (8.7–29.0)
Arrange marriage	–	–	10.1 (6.7–14.9)	15.0 (7.5–27.1)
Other	5.5 (3.1–9.4)	5.0 (1.3–14.8)	4.6 (2.5–8.4)	8.3 (3.1–19.1)

CMs, community members; VHWs, village health workers; CI, confidence interval.

Table 4
Participants' perceptions of the helpfulness of various interventions that may be used to treat the conditions described in the vignettes.

Intervention	Depression % (95% CI)		Psychosis % (95% CI)	
	CMs ($n=240$)	VHWs ($n=60$)	CMs ($n=240$)	VHWs ($n=60$)
Non-pharmacological interventions				
Love and affection				
Helpful	99.2 (96.7–99.9)	98.3 (89.7–99.9)	92.1 (87.7–95.0)	96.7 (87.5–99.4)
Harmful	0.4 (0–2.7)	0	0.4 (0–2.7)	3.3 (0.6–12.5)
Neither	0	0	2.5 (1.0–5.6)	0
It depends	0.4 (0–2.7	1.7 (0.1–10.1)	4.6 (2.4–8.3)	0
Listening to understand				
Helpful	96.3 (92.8–98.2)	100	91.7 (87.2–94.7)	95.0 (85.2–98.7)
Harmful	0.4 (0–2.7)	0	0.8 (0.1–3.3)	5.0 (1.3–14.8)
Neither	0.4 (0–2.7)	0	2.1 (0.8–5.1)	0
It depends	2.9 (1.3–6.2)	0	5.4 (3.0–9.3)	0
Distraction from the problem				
Helpful	93.3 (89.2–96.0)	93.3 (83.0–97.8)	87.9 (83.0–91.6)	93.3 (83.0–97.8)
Harmful	2.9 (1.3–6.2)	3.3 (0.6–12.5)	6.7 (4.0–10.8)	6.7 (2.2–17.0)
Neither	0	0	2.1 (0.8–5.1)	0
It depends	3.3 (1.6–6.7)	1.7 (0.1–10.1)	3.3 (1.6–6.7)	0
More physical activity				
Helpful	87.5 (82.5–91.3)	93.3 (83.0–97.8)	82.9 (77.4–87.3)	93.3 (83.0–97.8)
Harmful	5.4 (3.0–9.3)	5.0 (1.3–14.8)	5.8 (3.4–9.8)	3.3 (0.6–12.5)
Neither	1.3 (0.3–3.9)	0	3.3 (1.6–6.7)	0
It depends	5.8 (3.3–9.8)	1.7 (0.1–10.1)	7.9 (5.0–12.3)	3.3 (0.6–12.5)
Having a special diet				
Helpful	71.7 (65.4–77.2)	75.0 (61.9–84.9)	60.3 (53.5–66.2)	80.0 (67.3–88.8)
Harmful	12.9 (9.1–18.0)	18.3 (9.9–30.8)	21.3 (16.4–27.1)	13.3 (6.3–25.1)
Neither	2.1 (0.8–5.1)	1.7 (0.1–10.1)	1.7 (0.5–4.5)	0
It depends	12.5 (8.7–17.5)	5.0 (1.3–14.8)	15.9 (11.6–21.2)	6.7 (2.1–17.0)
Admission to hospital				
Helpful	64.6 (58.1–70.6)	78.3 (65.5–87.5)	74.1 (67.6–79.1)	81.7 (69.1–90.1)
Harmful	1.7 (0.5–4.5)	3.3 (0.6–12.5)	2.9 (1.3–6.2)	8.3 (3.1–19.1)
Neither	2.9 (1.3–6.2)	5.0 (1.3–14.8)	1.3 (0.3–3.9)	0
It depends	28.8 (23.2–35.0)	13.3 (6.3–25.2)	20.1 (15.2–25.7)	10.0 (4.1–21.2)
Pharmacological interventions				
Vitamins, tonics, herbal remedies				
Helpful	90.4 (85.8–93.7)	88.3 (76.8–94.8)	91.7 (87.2–94.7)	100
Harmful	0.4 (0–2.7)	3.3 (0.6–12.5)	0	0
Neither	2.9 (1.3–6.2)	5.0 (1.3–14.8)	5.0 (2.7–8.8)	0
It depends	5.4 (3.0–9.3)	3.3 (0.6–12.5)	3.3 (1.6–6.7)	0
Appetite stimulants				
Helpful	90.0 (85.3–93.4)	93.3 (83.0–97.8)	90.4 (85.8–93.7)	96.7 (87.5–99.4)
Harmful	1.3 (0.3–3.9)	3.3 (0.6–12.5)	0.4 (0–2.7)	1.7 (0.1–10.1)
Neither	3.8 (1.8–7.2)	1.7 (0.1–10.1)	5.0 (2.7–8.8)	0
It depends	4.6 (2.4–8.3)	1.7 (0.1–10.1)	4.2 (2.1–7.8)	1.7 (0.1–10.1)
Sleeping pills				
Helpful	77.5 (71.2–82.5)	90.0 (78.8–95.9)	78.3 (72.5–83.3)	93.3 (83.0–97.8)
Harmful	10.8 (7.3–15.6)	5.0 (1.3–14.8)	12.9 (9.1–18.0)	3.3 (0.6–12.5)
Neither	3.8 (1.8–7.2)	1.7 (0.1–10.1)	2.9 (1.3–6.2)	0
It depends	6.8 (4.0–10.8)	3.3 (0.6–12.5)	5.8 (3.4–9.8)	3.3 (0.6–12.5)
Other medication				
Helpful	6.8 (4.0–10.8)	8.3 (3.1–19.1)	5.8 (3.4–9.8)	15.0 (7.5–27.1)
Harmful	0.4 (0–2.7)	0	1.7 (0.5–4.5)	1.7 (0.1–10.1)
Neither	3.4 (1.6–6.7)	3.3 (0.6–12.5)	2.1 (0.8–5.1)	5.0 (1.3–14.8)
It depends	34.6 (28.3–40.6)	28.3 (17.8–41.6)	35.0 (29.1–41.5)	28.3 (17.8–41.6)

CMs, community members; VHWs, village health workers; CI, confidence interval.
NB: Some participants selected 'Don't know' responses and these are not recorded in the table so percentages do not always total 100.

to be social and economic.[15] Another form of psychosocial intervention, i.e. arranging a marriage if the person is single, was also favoured by some participants, including VHWs.

Increased physical activity and special diets were also judged to have therapeutic value. While there is evidence that physical activity can reduce depression,[18] people living in rural India already engage in a lot of physical activity on a daily basis, so promoting even more physical activity is unlikely to be beneficial. There is no good evidence to support the use of special diets for depression or psychosis.[18] Potentially ineffective and inappropriate medications (vitamins, tonics, herbal remedies, appetite stimulants and sleeping pills) were widely endorsed for the conditions described in both vignettes. VHWs were inclined to endorse these medications even more than community members. While vitamins and tonics may be harmless (if not too expensive to purchase), the use of appetite stimulants and sleeping pills is of doubtful value and may even be harmful. While psychiatric medications were not asked about explicitly, the low endorsement of the 'other medications' category suggests that awareness of this treatment option was negligible. While most of the identified psychosocial interventions have potential therapeutic value, appropriately administered psychotropic medication also has an important role to play in recovery, particularly for people with psychosis.

The participants had great faith in the ability of the appropriate help (appropriate according to the participant) to result in health improvements. However, this does not necessarily indicate faith in professional help, as they may have had socio-economic interventions in mind when answering this question. In contrast, when

Table 5
Participants' perceptions of the helpfulness of various people who may be consulted by the people in the scenarios.

Category of person	Depression % (95% CI)		Psychosis % (95% CI)	
	CMs ($n = 240$)	VHWs ($n = 60$)	CMs ($n = 240$)	VHWs ($n = 60$)
Close friend				
Helpful	97.1 (93.8–98.7)	98.3 (89.9–99.1)	94.6 (90.7–96.7)	98.3 (89.9–99.1)
Harmful	0.4 (0–2.7)	1.7 (0.1–10.1)	0	0
Neither	0	0	2.9 (1.3–6.2)	0
It depends	2.5 (1.0–5.6)	0	2.5 (1.0–5.6)	1.7 (0.1–10.1)
Neighbour				
Helpful	87.9 (82.9–91.6)	91.7 (80.9–96.9)	80.4 (74.7–85.1)	98.3 (89.9–99.1)
Harmful	0.8 (0.1–3.3)	1.7 (0.1–10.1)	0	0
Neither	5.0 (2.7–8.8)	1.7 (0.1–10.1)	8.8 (5.6–13.2)	0
It depends	6.3 (3.7–10.3)	5.0 (1.3–14.8)	10.8 (7.3–15.6)	0
Close family member				
Helpful	92.5 (88.2–95.4)	88.3 (76.8–94.8)	96.3 (92.8–98.1)	93.3 (83.0–97.8)
Harmful	3.3 (1.6–6.7)	6.7 (2.2–17.0)	0.4 (0–2.7)	0
Neither	0.4 (0–2.7)	3.3 (0.6–12.5)	0.8 (0.1–3.3)	0
It depends	3.8 (1.8–7.2)	1.7 (0.1–10.1)	2.5 (1.0–5.6)	6.7 (2.2–17.0)
VHW				
Helpful	84.1 (78.7–88.4)	98.3 (89.9–99.1)	82.9 (77.4–87.3)	95.0 (85.2–98.7)
Harmful	0	1.7 (0.1–10.1)	0.8 (0.1–3.3)	0
Neither	3.3 (1.6–6.7)	0	5.8 (3.4–9.8)	0
It depends	12.1 (8.4–17.1)	0	10.4 (7.0–15.1)	3.3 (0.6–12.5)
Local doctor				
Helpful	78.8 (72.9–83.6)	86.7 (74.9–93.7)	84.1 (78.7–88.4)	93.3 (83.0–97.8)
Harmful	0	0	0	0
Neither	6.3 (3.7–10.3)	3.3 (0.6–12.5)	0.8 (0.1–3.3)	3.3 (0.6–12.5)
It depends	15.0 (10.9–20.3)	10.0 (4.1–21.2)	15.1 (10.9–20.4)	3.3 (0.6–12.5)
Self-help group members[a]				
Helpful	64.2 (57.7–70.2)	91.7 (80.9–96.9)	63.3 (56.9–69.4)	93.3 (83.0–97.8)
Harmful	0.4 (0–2.7)	0	0	0
Neither	8.8 (5.6–13.2)	0	11.3 (7.7–16.1)	0
It depends	23.8 (18.6–29.7)	8.3 (3.1–19.1)	22.1 (17.1–28.0)	6.7 (2.2–17.0)
Psychiatrist				
Helpful	50.8 (44.3–57.3)	58.3 (44.9–70.8)	50.0 (43.5–56.5)	66.7 (53.2–78.0)
Harmful	2.1 (0.8–5.1)	5.0 (1.3–14.8)	4.6 (2.4–8.3)	1.7 (0.1–10.1)
Neither	4.6 (2.4–8.3)	3.3 (0.6–12.5)	4.6 (2.4–8.3)	1.7 (0.1–10.1)
It depends	32.9 (27.1–39.3)	23.3 (13.8–36.3)	29.2 (23.6–35.4)	25.0 (15.1–38.1)
Deal with the problem alone				
Helpful	51.3 (44.7–57.7)	43.3 (30.8–56.7)	50.4 (43.9–56.9)	51.7 (38.5–64.6)
Harmful	0.8 (0.1–3.3)	0	1.7 (0.5–4.5)	3.3 (0.6–12.5)
Neither	15.8 (11.5–21.2)	23.3 (13.8–36.3)	15.0 (10.9–20.3)	8.3 (3.1–19.1)
It depends	27.9 (22.4–34.1)	28.3 (17.8–41.6)	27.9 (22.4–34.1)	33.3 (22.0–46.8)
Local pharmacist				
Helpful	31.3 (25.5–37.6)	53.3 (40.1–66.1)	42.5 (36.2–49.0)	61.7 (48.1–73.6)
Harmful	4.2 (2.1–7.8)	8.3 (3.1–19.1)	3.8 (1.8–7.2)	1.7 (0.1–10.1)
Neither	22.1 (17.1–28.0)	16.7 (8.7–29.0)	21.7 (16.7–27.5)	16.7 (8.7–29.0)
It depends	40.8 (34.6–47.4)	20.0 (11.2–32.7)	30.4 (24.7–36.7)	20.0 (11.2–32.7)
Aryuvedic doctor				
Helpful	26.7 (21.3–32.8)	46.7 (33.9–59.9)	47.1 (40.7–53.6)	58.3 (44.9–70.7)
Harmful	1.7 (0.5–4.5)	5.0 (1.3–4.8)	2.5 (1.0–5.6)	5.0 (1.3–14.8)
Neither	10.0 (6.6–14.7)	10.0 (4.1–21.2)	7.1 (4.3–11.3)	3.3 (0.6–12.5)
It depends	47.1 (40.7–53.6)	33.3 (22.0–46.8)	37.5 (31.4–44.0)	31.7 (20.6–45.1)
Priest				
Helpful	21.7 (16.7–27.5)	30.0 (19.2–43.4)	20.4 (15.6–26.2)	23.3 (13.8–36.3)
Harmful	5.0 (2.7–8.8)	11.7 (5.2–23.2)	7.5 (4.6–11.8)	16.7 (8.7–29.0)
Neither	24.6 (19.4–30.6)	28.3 (17.8–41.6)	27.9 (22.4–34.1)	28.3 (17.8–41.6)
It depends	40.0 (33.8–46.5)	28.3 (17.8–41.6)	36.3 (30.2–42.7)	20.0 (11.2–32.7)
Witch-doctor[b]				
Helpful	17.1 (12.7–22.6)	18.3 (9.9–30.8)	14.6 (10.5–19.8)	21.7 (12.5–34.5)
Harmful	47.5 (41.1–54.0)	63.3 (49.8–75.1)	47.5 (41.1–54.0)	53.3 (40.1–66.1)
Neither	19.2 (14.5–24.8)	11.7 (5.2–23.2)	21.7 (16.7–27.5)	18.3 (9.9–30.8)
It depends	13.3 (9.4–18.4)	5.0 (1.3–14.8)	13.8 (9.8–18.9)	1.7 (0.1–10.1)

CMs, community members; VHWs, village health workers; CI, confidence interval.
NB: A few participants selected 'Don't know' responses and these are not recorded in the table so percentages do not always total 100.
[a] Self-help groups are mainly involved in income generation and micro-finance activities.
[b] Locally known as bhagat, tantric and mantric.

answering structured questions about the value of doctors or hospitals for problems such as these, the majority judged them as likely to be helpful, especially in relation to the psychosis scenario. People in India are generally comfortable with a pluralist approach to health care and are willing to access a range of services, some of which may be incongruent with their conceptualization of the health problem, e.g. they can seek biomedical solutions for problems perceived to have social (or even supernatural) causes.[19,20]

The questionnaire used in the present survey was based on one used in national surveys in Australia and Japan.[12] When the findings from these three culturally and socio-economically diverse countries are compared, some substantial differences emerge. The

Table 6
Proportion of participants identifying likely outcomes for people in the vignettes with and without help.

	Depression % (95% CI)		Psychosis % (95% CI)	
	CMs ($n = 240$)	VHWs ($n = 60$)	CMs ($n = 240$)	VHWs ($n = 60$)
Likely outcome if appropriate help is received				
Full recovery, no problems	90.0 (85.3–93.4)	88.3 (76.8–94.8)	83.3 (77.8–87.7)	91.7 (80.9–96.9)
Full recovery, problems recur	6.7 (4.0–10.8)	10.0 (4.1–21.2)	13.8 (9.8–18.9)	8.3 (3.1–19.1)
Partial recovery	2.1 (0.8–5.1)	0	1.3 (0.3–3.9)	0
Partial recovery, problems recur	0.8 (0.1–3.3)	1.7 (0.1–10.1)	1.7 (0.5–4.5)	0
No improvement	0.4 (0–2.7)	0	0	0
Get worse	0	0	0	0
Likely outcome if appropriate help is not received				
Full recovery, no problems	3.3 (1.6–6.7)	1.7 (0.1–10.1)	0.4 (0–2.7)	0
Full recovery, problems recur	2.5 (1.0–5.6)	0	1.3 (0.3–3.9)	3.3 (0.6–12.5)
Partial recovery	1.3 (0.3–3.9)	0	0.8 (0.1–3.3)	0
Partial recovery, problems recur	8.8 (5.6–13.2)	11.7 (5.2–23.2)	12.9 (9.1–18.0)	8.3 (3.1–19.1)
No improvement	5.8 (3.3–9.8)	1.7 (0.1–10.1)	5.0 (2.7–8.8)	1.7 (0.1–10.1)
Get worse	78.3 (72.5–83.3)	85.0 (72.9–92.5)	79.2 (73.4–84.0)	85.0 (72.9–92.5)

CMs, community members; VHWs, village health workers; CI, confidence interval.
NB: A few participants selected 'Don't know' responses and these are not recorded in the table so percentages do not always total 100.

Indian sample was much more likely to label the problems in both vignettes as stress (depression: India 48%, Australia 11%, Japan 20%; psychosis: India 58%, Australia 3%, Japan 5%), which is congruent with the findings of the authors' earlier work in this setting.[15]

The Indian and Australian samples were more likely than the Japanese to endorse consultation with the local doctor (depression: India 79%, Australia 84%, Japan 26%; psychosis: India 84%, Australia 77%, Japan 19%), but the Indians had the least faith in psychiatrists (depression: India 51%, Australia 71%, Japan 72%; psychosis: India 50%, Australia 81%, Japan 73%). People in India are more likely to recommend the use of vitamins (depression: India 90%, Australia 44%, Japan 16%; psychosis: India 92%, Australia 31%, Japan 11%), sleeping pills (depression: India 77%, Australia 22%, Japan 26%; psychosis: India 78%, Australia 18%, Japan 21%) and special diets (depression: India 72%, Australia 46%, Japan 6%; psychosis: India 60%, Australia 42%, Japan 4%) for mental health problems.

The Indian group more strongly endorsed family as a source of help, especially compared with the Australian group (depression: India 93%, Australia 65%, Japan 84%; psychosis: India 96%, Australia 63%, Japan 77%). This may reflect the relatively greater individuation of adults from their natal families in Western countries such as Australia, where being able to take care of oneself without depending on parents is a measure of success. Also, likely to be relevant is the fact that, in India, having a family member with a mental disorder is highly stigmatizing for the entire family unit. This results in a number of socially debilitating consequences for all family members, and makes it much harder for them to seek assistance from outside sources. The Indian group was also much more likely than the other two groups to favour 'dealing with it alone' (depression: India 51%, Australia 10%, Japan 20%; psychosis: India 50%, Australia 11%, Japan 22%), which may be similarly linked to a reluctance to share their problems with others in order to protect the family honour. Such differing views on various aspects of mental health underline the importance of understanding MHL in context, and designing interventions accordingly.

A number of limitations should be considered when interpreting the findings of this study. Despite careful and consultative adaptation, translation and piloting of the questionnaires, ensuring the equivalence of meaning across cultures and languages is always a complex and challenging process. Consequently, it is possible that some questions were not interpreted as intended. Even though community members were sampled systematically, older participants were somewhat over-represented,[21] possibly due to the fact that younger people often migrate for work. While younger people may be better informed about mental health, it is usually the more senior family members who decide if, when and where help will be sought for health problems, so their beliefs about mental health have a direct impact on health-seeking behaviours. It should also be acknowledged that the people participating in this survey belong to communities that have been served by a successful and mature primary healthcare project, so their views are not necessarily typical of all rural Maharashtran communities.

The VHWs were one of the most favoured professional sources of help for people with a mental health problem. This highlights the extent to which they are trusted by the communities they serve and live with, and thus the urgent need for training to enhance their MHL and capacity to deliver mental health first aid. However, it will be essential to adapt concepts of mental health first aid to the local context as there is little point in urging people to seek professional psychiatric care if the quality of the psychiatric care they can afford to access (often inadequately resourced government services) is likely to cause more distress. Strengthening the local community and primary healthcare response coupled with selective referral to professional psychiatric services is probably most appropriate in this context. The findings from this study have highlighted a number of areas to be covered in such a training programme including: enhancing awareness of the need to access appropriate professional help when someone has a mental health problem; promotion of knowledge about the effectiveness and affordability of evidence-based psychotropic medications; dispelling the myth that marriage is a useful form of treatment; and discouraging the use of sleeping pills, appetite stimulants and special diets as treatment for mental disorders.

Acknowledgements

The authors wish to thank the following people for their contributions to this study: Dr Raj Arole for having the vision to incorporate mental health into primary health care; Mr Ravi Arole for data management; Dr Soumitra Pathare for technical advice; Professor Helen Herrman for support and encouragement; Mrs Ratna Kamble, Ms Shainaj Khudbuddin Sayyad and Ms Shobha Kulkarni for data collection; and Dr Ramaswamy Premkumar for assistance with sampling.

Ethical approval

University of Melbourne, Australia and the Maharashtra Association of Anthropological Sciences, Pune, India.

Funding

Early Career Research grant from the University of Melbourne.

Competing interests

None declared.

References

1. World Health Organization. *The world health report: 2001. Mental health: new understanding, new hope*. Geneva: WHO; 2001.
2. Patel V, Kleinmen A. Poverty and common mental disorders in developing countries. *Bull World Health Org* 2003;**81**:609–15.
3. Thornicroft G, Maingay S. The global response to mental illness. *BMJ* 2002;**325**:608–9.
4. World Health Organization. *Mental health gap action programme. Scaling up care for mental, neurological, and substance use disorders*. Geneva: WHO; 2008.
5. Patel V, Garrison P, de Jesus Mari J, Minas H, Prince M, Saxena S. The Lancet's series on global mental health: 1 year on. *Lancet* 2008;**372**:1354–7.
6. World Health Organization, World Organization of Family Doctors (Wonca). *Integrating mental health into primary care: a global perspective*. Geneva: WHO and Wonca; 2008.
7. Weiss MG, Isaac M, Parkar SR, Chowdhury AN, Raguram R. Global, national, and local approaches to mental health: examples from India. *Trop Med Int Health* 2001;**6**:4–23.
8. Simon GE, Vonkorff M, Piccinelli M, Fullerton C, Ormel J. An international study of the relation between somatic symptoms and depression. *N Engl J Med* 1999;**341**:1329–35.
9. Patel V, Oomman N. Mental health matters too: gynaecological symptoms and depression in South Asia. *Reprod Health Matters* 1999;**7**:30–8.
10. Jorm AF. Mental health literacy: public knowledge and beliefs about mental disorders. *Br J Psychiatry* 2000;**177**:396–401.
11. Jorm AF, Barney LJ, Christensen H, Highet NJ, Kelly CM, Kitchener BA. Research on mental health literacy: what we know and what we still need to know. *Aust NZ J Psychiatry* 2006;**40**:3–5.
12. Jorm AF, Nakane Y, Christensen H, Yoshioka K, Griffiths K, Wata Y. Public beliefs about treatment and outcome of mental disorders: a comparison of Australia and Japan. *BMC Med* 2005;**3**:12.
13. Nakane Y, Jorm AF, Yoshioka K, Christensen H, Nakane H, Griffiths K. Public beliefs about causes and risk factors for mental disorders: a comparison of Japan and Australia. *BMC Psychiatry* 2005;**5**:33.
14. Kermode M, Bowen K, Arole S, Pathare S, Jorm AF. Attitudes to people with mental disorders: a mental health literacy survey in a rural area of Maharashtra, India. *Soc Psychiatry Psychiatr Epidemiol*; 2009 Mar 21 [Epub ahead of print].
15. Kermode M, Herrman H, Arole R, White J, Premkumar R, Patel V. Empowerment of women as a strategy for mental health promotion in developing countries: a qualitative study from rural Maharashtra. *BMC Public Health* 2007;**7**:225.
16. Goldberg DP, Blackwell B. Psychiatric illness in general practice: a detailed study using a new method of case identification. *BMJ* 1970;**1**:439–43.
17. Chadda RK, Agarwal V, Singh MC, Raheja D. Help seeking behaviour of psychiatric patients before seeking care at a mental hospital. *Int J Soc Psychiatry* 2001;**47**:71–8.
18. Morgan AJ, Jorm AF. Self-help interventions for depressive disorders and depressive symptoms: a systematic review. *Ann Gen Psychiatry* 2008;**7**:13.
19. Charles H, Manoranjitham SD, Jacob KS. Stigma and explanatory models among people with schizophrenia and their relatives in Vellore, South India. *Int J Soc Psychiatry* 2007;**53**:325–32.
20. Saravanan B, Jacob KS, Deepak MG, Prince M, David A, Bhugra D. Perceptions about psychosis and psychiatric services: a qualitative study from Vellore, India. *Soc Psychiatry Psychiatr Epidemiol* 2007;**43**:231–8.
21. US Census Bureau. http://www.census.gov/cgi-bin/ipc/idbagg.