The effect of VISHRAM, a grass-roots community-based mental health programme, on the treatment gap for depression in rural communities in India: a population-based study

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Summary

Background VISHRAM was a community-based mental health programme with the goal of addressing the mental health risk factors for suicide in people from 30 villages in the Amravati district in Vidarbha, central India. We aimed to assess whether implementation of VISHRAM was associated with an increase in the proportion of people with depression who sought treatment (contact coverage).

Methods A core strategy of VISHRAM was to increase the demand for care by enhancing mental health literacy and to improve the supply of evidence-based interventions for depression and alcohol-use disorders. Intervention for depression was led by community-based workers and non-specialist counsellors and done in collaboration with facility-based general physicians and psychiatrists. From Dec 25, 2013, to March 10, 2014, before VISHRAM was introduced, we did a baseline cross-sectional survey of adults randomly selected from the electoral roll (baseline survey population). The structured interview was administered by field researchers independent of the VISHRAM intervention and included questions about sociodemographic characteristics, health-care service use, depression (measured using the Patient Health Questionnaire [PHQ]-9), and mental health literacy. 18 months after VISHRAM was enacted, we repeated sampling methods to select a separate population of adults (18 month survey population) and administered the same survey. The primary outcome was change in contact coverage with VISHRAM, defined as the difference in the proportion of individuals with depression (PHQ-9 score >9) who sought treatment for symptoms of depression between the baseline and the 18 month survey population. Secondary outcomes were whether the distribution of coverage was equitable, the type of services sought, and mental health literacy.

Findings 1887 participants completed the 18 month survey interview between Sept 18, and Oct 8, 2015. The contact coverage for current depression was six-times higher in the 18 month survey population (27·2%, 95% CI 21·4–33·7) than in the baseline survey population (4·3%, 1·5–7·1). Contact coverage was equitably distributed across sex, education, income, religion, and caste. Most providers consulted for care were general physicians. We observed significant improvements in a range of mental health literacy indicators, for example, conceptualisation of depression as a mental health problem and the intention to seek care for depression.

Interpretation A grass-roots community-based programme in rural India was associated with substantial increase in equitable contact coverage for depression and improved mental health literacy. It is now crucially important to translate this knowledge into real-world practice by scaling-up this programme through the National Mental Health Programme in India.

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Background

Despite evidence supporting pharmacological and psychosocial interventions for depression and the effectiveness of the delivery of these interventions by frontline non-specialist workers in a collaborative setting, most individuals with depression do not receive interventions due to supply-side and demand-side barriers.[1–3] These barriers lead to large treatment gaps, even in relatively well-resourced middle-income countries such as India and China.[4]

In 2013, 50% of all disease burden in India was caused by non-communicable disease, while mental disorders accounted for about 6% of the total disease burden. A third of this is due to depression, which also significantly contributes to the burden attributed to suicide and ischaemic heart disease, thus making it a critical public health priority.[5] The findings of the Million Death Study in 2012 suggest that suicide is a leading cause of death in the people aged 15–29 years in India.[6]

VISHRAM (the Vidarbha Stress and Health ProgRAM) was a community-based mental health programme designed to address the mental health risk factors (ie, depression and alcohol use disorders) for suicide in a

Research in context

Evidence before this study

A 2015 systematic review assessing the magnitude of and health system responses to the mental health treatment gap in adults in India and China did not find any studies that had evaluated change in contact coverage to assess the impact of a community-based mental health programme. Another relatively recent global systematic review found that seven studies had evaluated the impact of mental health interventions on population contact coverage but none of the evaluations were of community mental health programmes from lower middle-income and low-income countries (LMIC).

Added value of this study

The VISHRAM programme was associated with an increase in the contact coverage and a consequent reduction in the treatment gap for depression. Contact coverage was equitable across sex, educational attainment, income, religion, and caste. Most providers consulted were general physicians and there was significant improvement in a range of mental health literacy indicators such as conceptualisation of depression as a mental health problem and intention to seek care for depression.

Implications of the findings

A grass-roots community based programmes led by a team of community health workers and lay counsellors working in collaboration with primary care physicians and visiting psychiatrists may contribute to reducing the huge treatment gap for depression. It is now critically important to translate this knowledge into real-world practice by scaling up this programme through the National Mental Health Programme in India.

predominantly rural population in the Amravati district of Vidarbha, central India.[7] The evaluation methodology was modelled on that used by the PRIME (PRogramme for Improving Mental health carE) consortium to assess the impact of programmes intended to increase the coverage of interventions in five low-income and middle-income countries (LMICs).[8]

Contact coverage is the proportion of people with a mental disorder who seek care for the symptoms of that disorder. Treatment gap is a related construct, defined as the proportion of people with a mental disorder who do not seek any care for their disorder.[9] Therefore, contact coverage for depression comprises individuals with depression who seek care, as defined by treatment from a health-care provider; the treatment gap is composed of those who do not seek care.

In a baseline population study of the 30 villages targeted with VISHRAM, we calculated the contact coverage for depression to be 4·3% (95% CI 1·5–7·1).[7] Here we aimed to assess whether 18 months of VISHRAM increased contact coverage for depression, while also investigating whether coverage was equitable and increased knowledge of mental disorders in the rural population. We do not report the impact of the programme on the treatment gap for alcohol use disorders because the prevalence was very low in the baseline survey.

See Online for appendix

For the **documentary on VISHRAM** see https://youtu.be/Q1DLwBbdxIY

Methods

Programme description

VISHRAM was rolled out to 15 villages each in Chandur Bazaar and Dhamangaon talukas. The total population covered was 100 555 people. Before the implementation of VISHRAM, mental health services were available only through the District Mental Health Program (DMHP) in the public sector. The details regarding the settings and availability of health services in the district have been published previously.[7]

A core strategy of VISHRAM was to target interventions for the detection and management of depression. The strategy sought to increase demand for care by enhancing mental health literacy and to improve the supply of evidence-based interventions through a collaborative care model involving three tiers of health workers: village-based community health workers; lay counsellors (health counsellors who worked in the village as well as in the health facilities—primary health care centre or rural hospitals); and facility-based general physicians and visiting psychiatrists. Community health workers conducted small-group meetings and household visits to increase awareness about mental disorders and to inform people about availability of mental health services. Community health workers proactively identified individuals with depression and provided them mental health "first aid",[10,11] and referred individuals who had greater needs to the next tier of workers, health counsellors. Counsellors offered the Healthy Activity Program (HAP), a brief structured psychosocial intervention for depression.[12,13] Patients who had severe symptoms, had attempted suicide or made suicidal plans, or did not respond to the therapy were referred to the health facilities where they could consult the general physician or a psychiatrist (see appendix for more details of interventions). A documentary about the VISHRAM can be accessed online.

39 community health workers were engaged with at least one community health worker in each of the 30 villages (in bigger villages there were two per village). Community health workers were residents of the village and none of them had any formal training or prior experience of working in the health sector, except for 12 workers who were ASHA (Accredited Social Health Activist) workers. Eight counsellors covered the 30 villages; counsellors were university graduates but without formal training in psychology or counselling. A psychiatrist was initially contracted by the project for 4 months, after which

the Government deployed its District Mental Health Program psychiatrist to provide services for rest of the 14 months of the intervention implementation. All services in VISHRAM were free, but patients paid for travel costs to the facilities for specialist clinics and medication costs (in case there was a stock-out).

The baseline community survey was conducted from Dec 25, 2013, to March 10, 2014. The details about the baseline community survey were published previously.[7] In brief, systematic random sampling was used to select participants from voter lists in all the 30 villages. The interview contained sections on sociodemographic characteristics, health-care service utilisation, health-seeking behaviour, and mental health literacy. Depression was screened by using the Patient Health Questionnaire (PHQ)-9. The interview was administered by field researchers who had a college degree and were independent of the VISHRAM implementation team.

Data collection

The 18 month survey was conducted from Sept 18 to Oct 8, 2015. Similar to the baseline community survey, the sampling frame comprised adults aged 18 years and older who we randomly selected from voter lists in all 30 villages.[7] To detect a change in contact coverage for depression from the baseline survey (4·3%) to 15% after 18 months with 90% power and a two-sided α of 0·05, we calculated that we needed a sample of 180 individuals with depression (appendix). Systematic random sampling was used to select the participants from voter lists in all 30 villages. The number of individuals sampled per village was estimated according to the proportional contribution of the village population to the total population. The voter lists were obtained from the website of the Election Commission, which had been updated in 2013. Eligibility criteria for participation were fluency in spoken Marathi or Hindi and absence of any cognitive impairment that was severe enough to interfere with the informed consent procedure or survey. All participants spoke Marathi. The Institutional Review Board of Sangath approved the study protocol.

The same structured interview schedule used in the baseline community survey was used for the 18 month survey. Depression was measured using the Marathi/Hindi version of the PHQ-9, a screening questionnaire for depression[14] that has been extensively used and validated in India.[15–17] Participants who scored higher than 9 on PHQ-9, indicating a probable case of depression (thus screened positive), were asked questions related to seeking help for depression-related problems from a range of providers, including non-formal providers, in the past 12 months. Details about the treatment received, medications, and costs of care (incurred by the individual) were elicited. Participants were then asked questions on suicidal ideation, adapted from the Mini-International Neuropsychiatric Interview (MINI), a semi-structured interview for the assessment of mental disorders.[18] Sociodemographic factors assessed included possession of Below Poverty Line (BPL) card and employment with Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA),[7] both indicators of socioeconomic deprivation. Mental health literacy was assessed by presenting a case vignette of a 45 year-old woman with typical symptoms of depression to a random subsample of participants and asking about how the respondent conceptualised the problem, whether they knew anyone with a similar problem, and what their beliefs were regarding individuals similar to the woman in the vignette. The questions were adapted from a mental health literacy survey conducted in the same state (appendix).[19] The field researchers were independent of the implementation team. The structured interview was administered using tablet computers using STAR (Sangath digital Tool for Advanced Research).[20]

Outcomes

In this cross-sectional, population-based, follow-up of the VISHRAM project, our primary outcome was change in contact coverage after VISHRAM, defined as the difference in the proportion of individuals with depression (PHQ-9 score >9) who sought treatment for symptoms of depression between the baseline and 18 month survey populations. We also planned analyses to assess how equitable coverage was at 18 months across age, sex, education, marital status, religion, caste, and poverty status. We aimed to compare scores from the

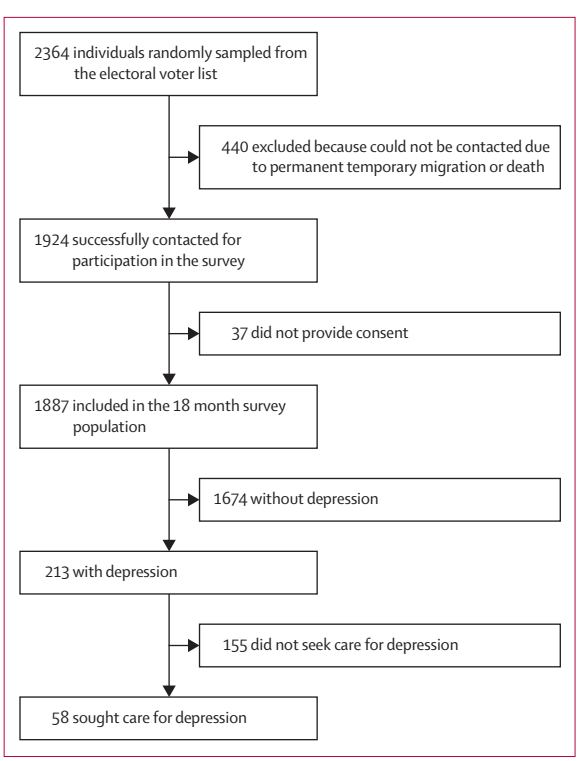

Figure: **Study profile of 18 month survey population**

	Baseline survey population (n=1456)	18 month survey population (n=1887)	p value
Age	..	..	0·527
18–30 years	400 (27%)	476 (25%)	..
31–40 years	355 (24%)	482 (26%)	..
41–55 years	360 (25%)	476 (25%)	..
>56 years	341 (23%)	453 (24%)	..
Sex	..	..	0·780
Male	762 (52%)	997 (53%)	..
Female	694 (48%)	890 (47%)	..
Education	..	..	0·030
Middle school (grade7) and below	704 (48%)	841 (45%)	..
Middle school (grade 8) and above	752 (52%)	1046 (55%)	..
Marital Status	..	..	0·165
Unmarried	172 (12%)	265 (14%)	..
Currently married	1181 (81%)	1491 (79%)	..
Widowed, divorced, or separated	103 (7%)	131 (7%)	..
Religion	..	..	0·070
Hindu	1097 (75%)	1472 (78%)	..
Muslim or other	359 (25%)	415 (22%)	..
Caste*	..	..	0·095
Scheduled caste	284 /1447 (20%)	317 (17%)	..
Scheduled tribe	110 /1447 (8%)	140 (7%)	..
Not scheduled caste or tribe	1053/1447 (72%)	1430 (76%)	..
Currently employed	..	..	0·165
Yes	852 (59%)	1149 (61%)	..
No	604 (41%)	738 (39%)	..
Annual household income	..	..	<0·001
Lowest quintile	291/1436 (20%)	365 (19%)	..
Second quintile	333/1436 (23%)	341 (18%)	..
Third quintile	279/1436 (19%)	478 (25%)	..
Fourth quintile	307/1436 (21%)	391 (21%)	..
Highest quintile	226/1436 (16%)	312 (17%)	..
Employed with MNREGA	..	..	0·014
Yes	141/1362 (10%)	148 (8%)	..
No	1221/1362 (90%)	1732 (92%)	..
Below Poverty Line card ownership	..	..	<0·001
Yes	679/1451 (47%)	1016 (54%)	..
No	772/1451 (53%)	871 (46%)	..
Loan owed	..	..	0·084
Yes	219/1455 (15%)	326 (17%)	..
No	1236/1455 (85%)	1561 (83%)	..

Data are n (%) or n/N (%) where data missing. MNREGA=Mahatma Gandhi National Rural Employment Guarantee Act. *Scheduled castes and scheduled tribes are subgroups of the population that the Government of India officially recognises as socially and economically disadvantaged and in need of special protection from injustice and exploitation.[22]

***Table 1*: Comparison of socioeconomic characteristics of sample from baseline and 18 month survey**

For the **purchasing power conversion from the Organisation for Economic Co-operation and Development** see https://stats.oecd.org/Index.aspx?DataSetCode=SNA_TABLE4

vignette at baseline and at 18 months to assess whether VISHRAM improved attitudes and awareness.

Statistical analysis

The sociodemographic characteristics of the baseline survey population and the 18 month survey population were treated as categorical variables and compared with the χ^2 test. The change in contact coverage was estimated using Poisson regression with robust variance estimator.[21] First we estimated the unadjusted association (prevalence ratio and 95% CI) between time of survey and outcome of contact coverage and then estimated the association adjusted for age, sex, education, marital status, religion, caste and below poverty-line status. Equity of contact coverage in 18 month survey was analysed using simple Poisson regression with robust variance estimator to estimate prevalence ratio with 95% CIs for all associations reported. The costs of care were converted to US dollars based on purchasing power parity from the Organisation for Economic Co-operation and Development. Our analyses of suicide outcomes were restricted to questions related to suicidality in the interview schedule because our population was too small to expect an effect on the number of deaths by suicide. Data were analysed with Stata/SE version 14.

Role of the funding source

The funder of the study had no role in study design, data collection, data analysis, data interpretation, or writing of the report. The corresponding author had full access to all the data in the study and had final responsibility for the decision to submit for publication.

Results

In the baseline survey, 1482 of 1900 randomly selected individuals were located, and interviews were completed with 1456 participants (the baseline sample population).[7] In the 18 month survey, 1924 individuals were located and interviews were completed with 1887 (the 18 month survey population; figure). The baseline and 18 month sample populations were generally similar, except that a higher proportion of people in the 18 month survey had received higher education and more participants reported below poverty line status (table 1). The 18 month survey sample had similar demographical characteristics to the population of Amravati district overall.[23]

More than 1000 small group meetings were held during the 18 month implementation period, with meetings attended by approximately 16 000 villagers. A specially produced documentary *Prakashdoot* based on clips from popular cinema was screened 63 times in these 30 villages. In four villages, wall paintings were developed to further improve mental health literacy.

Mental health first aid was provided to 1441 individuals with psychosocial distress in the villages targeted with VISHRAM. More than half of these people (55%, n=793) were referred to counsellors for further management. Counsellors enrolled 505 patients with depression to provide psychosocial interventions. However, 392 patients received three or fewer counselling sessions. 81 (16%) were referred to the psychiatrist. Psychiatric clinics were held every month and provided care to 292 individuals, a quarter of whom were individuals with depression (n=73, 25%).

	Adjusted prevalence ratio (95% CI)
Survey population	
Baseline	1
18 month	6·7 (3·3–13·6)
Age	
18–30 years	1
31–40 years	1·3 (0·6–2·8)
41–55 years	0·9 (0·4–2·1)
>56 years	0·9 (0·4–2·1)
Sex	
Male	1
Female	0·8 (0·6–1·3)
Education	
Middle school and below	1
Middle school and above	0·8 (0·5–1·4)
Marital status	
Unmarried	1
Married	0·5 (0·2–1·2)
Widowed, divorced, or separated	0·3 (0·1–0·9)
Religion	
Hindu	1
Muslim or other	1·4 (0·8–2·4)
Caste	
Scheduled caste	1
Scheduled tribe	1·7 (0·5–6·1)
No scheduled caste or tribe	2·3 (1·1–4·7)
Below Poverty Line card ownership	
No	1
Yes	1·0 (0·7–1·6)

***Table 2*: Multivariable analysis of associations with contact coverage for current depression**

	Prevalence of sociodemographic factor (n=1887)	Unadjusted prevalence ratio (95% CI)
Age		
18–30 years	476 (25%)	1
31–40 years	482 (26%)	0·9 (0·4–2·0)
41–55 years	476 (25%)	0·9 (0·4–1·9)
>56 years	453 (24%)	0·7 (0·4–1·5)
Sex		
Male	997 (53%)	1
Female	890 (47%)	0·8 (0·5–1·3)
Education		
Middle school and below	841 (45%)	1
Middle school and above	1046 (55%)	1·0 (0·6–1·5)
Currently employed		
Yes	1149 (61%)	1
No	738 (39%)	1·1 (0·7–1·8)
Annual income		
Lowest quintile	365 (19%)	1
Second quintile	341 (18%)	0·7 (0·3–1·3)
Third quintile	478 (25%)	0·9 (0·5–1·7)
Fourth quintile	391 (21%)	1·0 (0·5–2·0)
Highest quintile	312 (17%)	1·4 (0·7–2·7)
Employed with MNREGA		
Yes	148 (8%)	1
No	1732 (92%)	1·9 (0·8–4·5)
Below Poverty Line card ownership		
No	871 (46%)	1
Yes	1016 (54%)	1·0 (0·6–1·6)
Marital status		
Unmarried	265 (14%)	1
Currently married	1491 (79%)	0·6 (0·3–1·2)
Widowed, divorced, or separated	131 (7%)	0·3 (0·1–0·9)
Religion		
Hindu	1472 (78%)	1
Muslim or other	415 (22%)	1·1 (0·7–1·8)
Caste		
Scheduled caste	317 (17%)	1
Scheduled tribe	140 (7%)	1·5 (0·5–4·8)
No scheduled caste or tribe	1430 (76%)	1·8 (0·9–3·6)
Loan owed		
No	1561 (83%)	1
Yes	326 (17%)	1·8 (1·1–2·8)

Data are n (%), unless otherwise noted.

***Table 3*: Association of sociodemographic factors with contact coverage for current depression in the 18 month survey population**

The prevalence of current depression fell from a baseline of 14·6% (95% CI 12·8–16·4) to 11·3% (9·9–12·8) at 18 months (p=0·005). The contact coverage for current depression was six-times higher in the 18 month survey population, from 4·3% (95% CI 1·5–7·1) in the baseline survey population to 27·2% (21·4–33·7) in the 18 month survey population (p<0·001). The unadjusted prevalence ratio for contact coverage in the 18 month survey population compared with the baseline survey population was 6·3 (95% CI 3·2–12·4). This measure of association remained similar after adjusting for sociodemographic factors (table 2). Sex, education, income, religion, and caste were not associated with contact coverage in the 18 month survey (table 3). Individuals who were in debt had higher contact coverage than those without debt and those who were widowed, divorced, or separated had lower contact coverage than those who were unmarried (table 3).

Of the 58 individuals who had sought help for depression, 12 sought help from two different service providers, four from three different service providers, and the remaining 42 from one service provider, resulting in a total of 78 consultations. Most of these consultations were with general physicians (n=48; 62%) followed by the psychiatrist in the rural hospital (n=15; 19%). Individuals reported improvement for more than half of the consultations (n=41, 53%). The most common reason for discontinuation of treatment was perceived lack of improvement (n=34, 43%). Compared with this, at the baseline, the general physician was consulted by

	Baseline survey population (n=593)	18 month survey population (n=798)	p value
Type of problem*			
Social or financial; family or marital	466 (79%)	568 (71%)	0·016
Ill-spirit	22 (4%)	22 (3%)	0·315
Physical	233 (39%)	196 (25%)	<0·001
Mental	202 (34%)	413 (52%)	<0·001
Attitudes and knowledge			
Know someone with this type of problem	67 (11%)	166 (21%)	<0·001
Person can completely recover from this problem	407 (69%)	652 (82%)	<0·001
Person can get back to normal routine	373 (63%)	660 (83%)	<0·001
This problem is a sign of personal weakness	389 (66%)	398 (50%)	<0·001
People with this problem are dangerous	275 (46%)	331 (41·5%)	0·069
It is best to avoid these people	219 (37%)	204 (26%)	<0·001
Social distance			
Agree to be a neighbour to this person	408 (69%)	459 (58%)	<0·001
Agree to spend time socialising with this person	351 (59%)	461 (58%)	0·595
Agree to develop a friendship with this person	320 (54%)	438 (55%)	0·732
Agree to work closely with the person	323 (54%)	440 (55%)	0·804
Agree to have the person marry into your family	153 (26%)	189 (24%)	0·365
Perceived effectiveness of interventions			
Talking to a friend or family member	496 (84%)	733 (92%)	<0·001
Consulting a primary care doctor	492 (83%)	719 (90%)	<0·001
Consulting a mental health professional	461 (78%)	682 (85%)	<0·001
Consulting a traditional healer	376 (63%)	372 (47%)	<0·001
Taking vitamins or tonics	447 (75%)	557 (70%)	0·022
Taking a saline drip	387 (65%)	514 (64%)	0·743
Intention to seek care			
Will you seek care if you had a similar problem?	428 (72%)	645 (81%)	<0·001

*After the depression vignette was read out, participants were asked, "What would you say, what problem Rani Bai is having?" Participants could choose multiple options such as, "financial", "social", "family", "marital", "physical", "ill-spirit", "mental problem", "don't know", or "other". Responses for first four options were combined.

***Table 4*: Change in mental health literacy (based on responses to vignette) for depression between baseline and 18 month survey**

eight individuals and only one individual consulted a specialist.

The median 12 month total cost of care for the 58 individuals who sought care in the 18 month survey was US$41·3 (IQR 8·4–230·3), compared with the median cost of $1244·2 reported in the baseline survey (IQR 759·3–2482·5).[7] More than half the total costs at 18 months were incurred for consultation (median $28·1, IQR 5·6–121·9), followed by medications and travel for consultation.

The prevalence of suicidal thoughts in the past 12 months fell from 5·2% (95% CI 4·1–6·4; n=75) in the baseline survey population to 2·5% at 18 months (95% CI 1·9–3·3; p<0·001; n=48). About half of all people who reported suicidality (n=27; 56% in the 18 month survey) had also experienced depression. Emergency medical care was received by five of seven individuals who attempted suicide, but only one individual specifically reported receiving a mental health intervention. All the participants who reported suicidal thoughts in last 12 months (n=48) were referred to the psychiatrist. The number of deaths by suicide in the intervention villages in 18 months before the intervention were 28. During the 18 month VISHRAM implementation period (April, 2014, to September, 2015), the number of deaths by suicide in the same area was 22. However, caution needs to be applied while interpreting these data owing to the instability of the estimates as a result of small numbers of deaths by suicide.

Table 4 shows improvement in a number of indicators used to assess mental health literacy in response to the depression vignette. For example, a significantly higher proportion of individuals in the 18 month survey population than in the baseline survey population identified the vignette as a mental health problem; responded that they know someone who has a similar disorder as depicted in the vignette; and expressed belief that affected individuals can completely recover from this problem and that they can return to a normal routine (table 4). Consulting a mental health professional or a primary care doctor was more likely to be perceived as effective treatment for depression. A significantly higher proportion of individuals expressed intention to seek care if they had depression. However, the response patterns for items related to social distance, such as developing a friendship and socialising with individuals with depression, did not show increase at the follow-up and one of the items related to willingness to be a neighbour to the person with depression showed a statistically significant decrease.

Discussion

We report the findings of the evaluation of VISHRAM, a multicomponent community-based mental health programme, which aimed to address the mental health risk factors for suicide, in particular the demand-side and supply-side barriers to reducing the treatment gap for depression in a rural population in India. Contact coverage for current depression rose six-times over the 18 month implementation phase, the contact coverage was equitably distributed, and there were significant improvements in many indicators of mental health literacy. Most individuals with current depression who sought care did so from general physicians, in line with the key message to seek help from these practitioners. The reduction in the treatment gap could be attributed to increased supply of mental health services through frontline workers and their collaborative linkage with the physicians and psychiatrists in the facilities, as well as increased demand for mental health services due to improved mental health literacy.

A systematic review strongly recommended that, "evaluations of mental health programs should routinely incorporate measures of contact and effectiveness coverage to improve existing services and to inform efforts to scale-up services".[9] To our knowledge, this is

the first study reporting evaluation of change in contact coverage for depression in a mental health programme from a low-income or middle-income country. Our findings align with those of similar interventions in high-income countries, such as the Community Partners in Care (CPIC) programme, which observed that the community engagement approach increases support for clients with depression compared with the traditional depression improvement programmes for treatment and symptoms alone.[24] Addressing the large treatment gap for mental disorders, and depression in particular, is a priority for global mental health.[25,26] Both demand-side and supply-side barriers impede the implementation of evidence-based interventions and innovations that seek to address these, for example tailoring mental health awareness programmes to the context and using non-specialist health workers to deliver interventions.[3] VISHRAM offers a rare example of a programme in a rural context, which, while grounded in the community and led by community-based workers, secured strong buy-in and participation from the village to the district. As a legacy of VISHRAM, each of the 30 villages has a new mental-health human resource (community health worker) who is trained to detect depression, provide low-intensity psychosocial interventions, and refer the patient to the public health system for further management. The increased awareness and the mobilisation of community members triggered the passing of resolutions by 26 Gram Sabhas (village councils) to the State Government demanding mental health services (appendix). There were no specialist services available in the rural hospitals at the baseline, but due to advocacy efforts from the VISHRAM team and the Gram Sabha resolutions, a government psychiatrist was deployed early on during the implementation phase.

The higher costs of care at the baseline might be due to the fact that care was mainly sought in the private sector, as is the case with most outpatient consultations in India.[27] The most probable explanation for the reduction in the median cost of care is that the services were now available in the village itself and even specialist care was available, at no cost, in the rural hospital and the front-line workers advocated the use of these public services where needed.

We note some important limitations of this study. We were unable to accurately estimate the effectiveness coverage—ie, the proportion of those in need of services who actually benefit from them; this would have entailed assessment of change in depression symptoms in each individual who sought care, a task which was beyond our resources. Monitoring symptom and functional change is crucially important to evaluate such programmes, as many individuals received only a few sessions of the counsellor-delivered psychosocial interventions. Future research could consider the use of mobile technologies to evaluate effective coverage through remote monitoring.[28] In the 18 month survey, we were unable to contact 18% of the individuals sampled from the voter list which might have resulted in selection bias. Although there were no other ongoing initiatives to promote mental health literacy or improve access to mental health care during the period of the VISHRAM implementation, in the absence of a comparison control condition, we cannot definitively conclude that the changes we observed can be attributed to VISHRAM. The change in contact coverage might also be due to unmeasured variables such as change in overall quality of health services or increased media coverage of mental health problems leading to increased health-care utilisation. The VISHRAM programme was implemented with one additional human resource (the counsellor) outside the existing public health system, which could limit its scalability. However, all other human resources were available and the additional human resource is consistent with other community-based providers employed by public health programme. The intention to seek care or willingness to see a health professional was quite high at baseline (72%). One reason for this unexpectedly high endorsement might be a genuinely more favourable attitude towards help-seeking for mental health care than expected, but this result could also be biased by social desirability. The improvement in the 18 month survey from baseline demonstrates a further enhancement in the overall acceptability of depression as a health disorder that could benefit from professional help. Contrary to this finding, we noted no association with or, in the case of one item, worsening of attitudes related to social distance. These findings are in alignment with those of other investigators who reported that an increase in population understanding of mental disorder as a brain disorder with biomedical treatments does not correspond with lesser social distance.[29] Finally, improving access to care for depression is a necessary but by no means a sufficient intervention to address the problem of suicide in rural areas; improving the social security net, enhancing gender equality, and protecting against social exclusion are crucial components of a multidimensional programme to address suicide.

In summary, our findings indicate that a grass-roots programme led by a team of community health workers and lay counsellors working in collaboration with primary care physicians and visiting psychiatrists could contribute to reducing the huge treatment gap for depression. It is now crucially important to translate this knowledge into real-world practice by scaling up this programme through the National Mental Health Programme in India.

Contributors

RShi and VP provided overall leadership in conceptualising the study and the structure of the paper. VM supervised the data collection and analysed the data. LA analysed the baseline data for mental health literacy. RShi wrote the first draft, and VP commented and edited all versions of the draft. VM, SG, RSha, RP, RShr, SD, TR, and AN commented and edited the advanced versions of the draft. SG, SD, and

AN supervised the work of health counsellors and AN provided clinical services in first 4 months of VISHRAM implementation on behalf of Sangath. All authors read and approved the final draft.

Declaration of interests

We declare no competing interests.

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