

Explanatory Models of Depression in a Rural Community of Coastal Karnataka, India: A Cross-Sectional Survey

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ABSTRACT

Background: Depression is a major public health problem but there is a huge treatment gap in India. Cultural beliefs influence conception of illness, personal meaning, help-seeking behaviors, and adherence to treatment. Research on explanatory models of depression attempt to explore these unique characteristics in an individual and the community. We set out to examine explanatory models of depression in a rural community of coastal Karnataka and explore the association between sociodemographic variables and explanatory models of depression.

Methods: A cross-sectional household survey in the rural community of Harekala village, Mangaluru taluk, Dakshina Kannada district, Karnataka, was done using Kish tables. A total of 200 individuals were interviewed with an adaptation of the Short Explanatory Model Interview in a local language using a case vignette of depression.

Results: Around 40% of the individuals perceived the problem as tension/stress/excessive worrying and did not perceive it as mental illness. A scant 10% of the

participants recognized some mental illness. Around one-fifth of the individuals attributed the problem to evil spirits and black magic; female participants were more likely to endorse consulting a doctor ($P = 0.003^{**}$) or a psychiatrist ($P = 0.012^*$). In addition, participants belonging to Islam were less likely to consult a doctor ($P = 0.028^*$) and psychiatrist ($P = 0.021^*$). Also, participants belonging to lower social class were less likely to endorse psychiatric consultation ($P = 0.018^*$)

Conclusions: A vast majority of the study subjects failed to identify depression as an illness or acknowledge biomedical causation. Gender, religion, and socioeconomic class may influence help-seeking behavior.

Keywords: Depression, explanatory models, short explanatory model interview, illness explanation, help-seeking, cultural beliefs

Key Messages: There is a poor awareness of depression, its causative factors and treatment in the specific rural community where the study was done. Help-seeking behaviors were determined by gender, religion, and socioeconomic class.

Mental disorders, in particular depression, are a major public health concern and a significant cause of disability worldwide.¹ Nearly 150 million Indians need mental health interventions, but the treatment gap is still high for mental disorders, ranging from 28% to 83%.² A community's culture and belief systems influence the expression of distress, help-seeking behavior, compliance with treatment, satisfaction with health care services, and coping with illness.³⁻⁵ A mental health professional from a different cultural background may fail to consider these during treatment. Kleinman coined the term "illness explanatory model" and described it as "the conceptions of sickness held by patients, communities, practitioners, and researchers."³ Explanatory models include beliefs concerning the etiology of the illness, its course, the meaning of sickness, its diagnosis, the methods of treatment, and the roles and expectations of the subjects involved in the process. People seem to simultaneously hold multiple and contradictory illness beliefs and

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HOW TO CITE THIS ARTICLE: Hegde S. and Karkal R. Explanatory Models of Depression in a Rural Community of Coastal Karnataka, India: A Cross-Sectional Survey. *Indian J Psychol Med.* 2022;44(4):371-377.

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Submitted: 20 Apr. 2021
Accepted: 18 Sep. 2021
Published Online: 01 Dec. 2021



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ACCESS THIS ARTICLE ONLINE
Website: journals.sagepub.com/home/szj
DOI: 10.1177/02537176211051001

seek help from diverse sources of cure and healing.³⁻⁵ Many patients with depression seek out a variety of carers other than mental health professionals, due to their beliefs and conceptualization of their illness. This leads to delay in treatment, escalates financial costs, and may worsen prognosis.

Earlier research exploring explanatory models in patients with depression has shown that they believe in nonmedical explanatory models of illness.⁶⁻⁸ In addition, research done in India revealed that many patients contact a faith/traditional healer before reaching psychiatric services. Belief in supernatural causation of mental illness, trustworthiness, accessibility, and recommendation by significant others were the major reasons for choosing faith healers.⁹⁻¹²

Previous research on explanatory models of mental illness in India has mostly been done on patients, community health workers, and faith healers.^{5, 13, 14} In this study, we want to examine the explanatory models of depression among laypeople in a rural community of coastal Karnataka and explore the association between sociodemographic variables and explanatory models of depression. The study was done in the Dakshina Kannada district, which has unique cultural aspects and traditions.¹⁵ Our effort will throw light on the cultural and local beliefs about depression prevalent in this community. Understanding the personal conceptualization of depression, causal attributions, and help-seeking behavior will help design culturally appropriate services and help create awareness about depression and its treatment in this specific community.

Materials and Methods

Study Site

Data were collected from the rural community of Harekala village, Mangaluru taluk, Dakshina Kannada district, Karnataka, India, with a population of 6,814.¹⁶ The village has four wards, two of which were surveyed, namely Panchayat Area and Grama Chavadi.

Study Design

This study was a cross-sectional community survey conducted from June 15, 2018, to July 31, 2018. Convenient sampling was used to identify 200 households

from the two wards, 150 from the Panchayat area and 50 from the Gramachavadi area. Household visits were done in the evening, and subjects were selected using Kish tables. One individual was interviewed from each household. If the selected member was not available at the time of visit, a phone call was made, and the interview was conducted after the participant reached home. Only in four households another member of the household was interviewed.

Sample

Considering that the community has a population of around 6,814, a total of 200 individuals (112 females and 88 males) were surveyed (confidence level—95% and margin of error—5%–10%). People of both sexes above 18 years of age and willing to participate were included in the study. Individuals with intellectual disability or significant neurological or medical illness that hinders interview and individuals presently having psychiatric disorders were excluded.

Study Tools

A specially designed questionnaire was used to assess sociodemographic details. The socioeconomic classification of participants was done using Modified BG Prasad scale. An adaptation of the Short Explanatory Model Interview (SEMI)¹⁷ in the Kannada language was used to examine the explanatory models of depression. A case vignette describing a typical case of depression in nontechnical terms was designed in the Kannada language to capture the characteristic features of a typical case of depression (Box 1).

BOX 1.

Case Vignette of a Patient with Depression

Mrs. A is a 30-year-old housewife with three small children. Her husband is a manual laborer. For the past six months she feels sad most time of the day. She is low in energy and has lost interest in day-to-day activities. She doesn't have appetite and has lost weight. She is not sleeping properly and has nightmares. She also feels low in confidence and pessimistic about future. At times, if it was not for the children, she wonders if it would be worth going on. Her in-laws live nearby but are not supportive.

Two doctors proficient in Kannada and English first translated the tool and case vignette into Kannada. Two other doctors then back-translated the Kannada version to English. The final Kannada versions of the tool and the vignette were designed in consensus with all four doctors, with attention to the technical accuracy of the translated tool and vignette. The pilot was done on three individuals from the specific community to check if the respondents understand the questions from the interview that was designed using adaptation of SEMI. The final version of the tool in Kannada was prepared taking the pilot into consideration.

Procedure

Ethical clearance was taken from the Institutional Ethical Committee. Four undergraduate students, including the first author, were trained to conduct interviews using the case vignette and SEMI by the second author (Associate Professor in Department of Psychiatry). The head of the community (Panchayat member) was informed about the study's aims, objectives, and methodology, and permission was taken to conduct the study. Written informed consent was taken from the participants, and they received written information about the study in their vernacular language (Kannada). They were informed that individual information would be kept confidential and told how data would be stored and reported. The interview was conducted with one person in each household at their homes. The interview was conducted in Kannada, which is the local language in the Dakshina Kannada district. The case vignette was provided to the participants. After giving adequate time to read and understand the case vignette, as a method for collecting qualitative data, the investigator conducted a detailed interview with open and closed-ended questions to elicit explanatory models of depression. The investigator took field notes in Kannada during the interview, which lasted 30–45 minutes. The interviewer gave attention to the beliefs of the individual about whether they consider the described vignette as a problem, a mental illness; its causes and consequences; its impact on the body, emotional well-being, social network, work, and home-life; and their beliefs about appropriate help-seeking. Answers to open-ended questions were recorded verbatim as described by the participant.

After each open-ended question, probing was done to encourage responses, followed by closed-ended questions to assess varying causal attributions and remedies. The interviewer translated the responses into English wherever possible, giving importance to local terminology for illness and psychological distress. Some local vocabulary was included with their English translation whenever possible.

Data Analysis

Analysis of the qualitative data on the explanatory models of depression, which was the primary objective of this study, was done through thematic analysis by coding responses and grouping them into categories, which allowed quantitative analysis of the data. Categorical data were presented as frequencies, and continuous variables were presented as means and standard deviations. Statistical analysis was done using SPSS version 23 (Statistical Package for the Social Sciences). The chi-square test was used to assess the association between sociodemographic variables and perception of disease in the case vignette, which was the secondary objective of the study. Exploratory analyses were done using the chi-square test to study the association between sociodemographic variables and other aspects of explanatory models. Fisher's exact test was used where any cell had expected count less than 5.

Results

Sociodemographic Profile

Mean (\pm SD) age of the participants was 37.73 (\pm 13.76) years, and the majority were in the age group of 18–39 years. Majority were female ($n = 112$, 56%), married ($n = 157$, 78.5%), and followers of Islam ($n = 155$, 77.5 %). Eighty-one (40.5%) participants were unemployed, and 111 (55.5 %) were employed in some way. The majority had a qualification of Secondary School Certificate (SSC, $n = 98$, 49%) and belonged to lower socioeconomic class ($n = 78$, 39%, **Table 1**)

Explanatory Models of Depression

Perception of the problem

Most of the participants ($n = 193$, 96.5%) perceived that the person in the case

TABLE 1.

Sociodemographic Profile of Study Participants

Variables	Categories	n (%)
Sex	Male	88 (44)
	Female	112 (56)
Age in years	18-39	123 (61.5)
	40-59	55 (22.5)
	>60	22 (11)
Marital status	Married	157 (78.5)
	Single	35 (17.5)
	Divorced/widow	8 (4)
Religion	Hindu	36 (18)
	Islam	155 (77.5)
	Christianity	9 (4.5)
Occupation	Unemployed	81 (40.5)
	Self-employed	46 (23)
	Unskilled	22 (11)
	Semiskilled	20 (10)
	Skilled	23 (11.5)
	Student	8 (4)
Educational status	No qualification	26 (13)
	SSC (Secondary School Certificate)	98 (49)
	HSC (Higher Secondary Certificate)	61 (30.5)
	Diploma	9 (4.5)
	University	6 (3)
Socioeconomic status	Class 5	78 (39)
	Class 4	47 (23.5)
	Class 3	46 (23)
	Class 2	22 (11)
	Class 1	7 (3.5)

vignette had a problem (**Table 2**). A sizeable proportion ($n = 78$, 39%) perceived it as “tension,” a term used colloquially to imply stress/excessive worrying, but did not think of it as a mental illness. Nine (9.5%) participants perceived it as some mental illness, and only one participant named the problem as depression. Although most participants responded that the person in the case vignette had a problem, only 99 (49.5%) perceived it to be a disease.

Causal attribution

The five most common causes for the ailment of the person in the case vignette as reported by the participants were stress/worry ($n = 157$, 78.5%),

psychological disturbances ($n = 114$, 57%), bad luck ($n = 94$, 47%), poverty ($n = 90$, 45%), and food habits ($n = 78$, 39%). A total of 47 (23.5%) participants attributed the problem to the effects of black magic and 42 (21%), to the effects of evil spirits.

Helpful strategies

The majority ($n = 129$, 64.5%) perceived that family support is helpful to manage the problem. A total of 73 (36.5%) and 51 (25.5%), respectively, reported that visiting a place of worship or a religious/spiritual healer would be beneficial. Although 148 (74%) participants suggested that the person in the vignette should contact a doctor, consultation with a mental health professional was

TABLE 2.

Perception of the Problem by the Study Participants

Variables	Categories	n (%)
Does she have a problem?	Yes	193 (96.5)
	No	7 (3.5)
If yes, what is the problem?	"Tension"	78 (39)
	No response	50 (25)
	Mental illness	19 (9.5)
	Poverty	19 (9.5)
	Problems related to husband	14 (7)
	Physical disease	7 (3.5)
	Problems related to children	4 (2)
	Family problem	3 (1.5)
	Anemia	1 (0.5)
	Bad luck	1 (0.5)
	Depression	1 (0.5)
	Lack of confidence	1 (0.5)
	Stomachache	1 (0.5)
	Weakness	1 (0.5)
Does she have a disease?	Yes	99 (49.5)
	No	73 (36.5)
	Don't know	28 (14)

less popular, with 69 (34.5%) endorsing a psychiatrist and 46 (23%), a psychologist, on probing.

Participants responded that the doctor should prescribe medications ($n = 111$, 55.5%), do counselling ($n = 60$, 30%), do a health check-up ($n = 24$, 12%), and give emotional support ($n = 19$, 9.5%) to help the person in the case vignette.

Mental illnesses and their local remedies known to participants

The majority ($n = 170$, 85%) had not heard specific names of any mental illness, although they knew about the existence of mental illnesses. A meagre 7 (3.5%) had heard of "Khinnathe" (depression). A small portion ($n = 22$, 11%) reported that a family member have had mental illness. The majority were not aware of any local remedies. A few participants suggested visiting an *Ustaad* (religious teacher, $n = 3$, 1.5%), *Thangal* (noble person considered a descendant of prophet Muhammad, $n = 2$, 1%), and an expert of *Vastu Shastra* (traditional Indian system of architecture, $n = 1$, 0.5%) for addressing the problem. Others suggested drinking *Kashaya* (a local ayurvedic/herbal tea, $n = 1$, 0.5%), praying ($n = 1$, 0.5%), meditat-

ing ($n = 1$, 0.5%), and reciting Quran ($n = 1$, 0.5%).

Association of Sociodemographic Variables and Explanatory Models of Depression

Chi-square tests of independence/Fisher's exact test were performed to examine the association between sociodemographic variables and (a) perception of disease in the person described in the case vignette, (b) whether the participant attributed the problem in the vignette to black magic, (c) whether the participant attributed the problem in the vignette to evil spirits. We found no significant associations.

Table 3 shows chi-square tests of independence which were performed to examine the association between sociodemographic variables and endorsement of consultation with a doctor and a psychiatrist. There was a significant association between the sex of the participant and their views on consulting a doctor ($P = 0.003$), with more women recommending visiting a doctor. In addition, there was a significant

association between religion and their views on consulting a doctor, with significantly more participants belonging to non-Islamic religions suggesting consulting a doctor for the problem in the vignette ($P = 0.028$).

There was a significant association between the sex of the participant and their views on psychiatric consultation, with more female participants recommending a psychiatrist ($P = 0.012$). In addition, there was a significant association between religion and their views on consulting a psychiatrist, with significantly more participants belonging to non-Islamic religions suggesting psychiatric consultation ($P = 0.021$). We also observed a significant association between socioeconomic class and views on psychiatric consultation, with significantly lesser participants belonging to the lower socioeconomic class endorsing a psychiatrist ($P = 0.018$).

Discussion

Nearly half of the participants from the community failed to recognize any disease when they were presented with a typical case of depression. This is consistent with previous research by Kermodé et al., who reported that most of their participants rejected that the person had a "real medical illness."⁷ This is also consistent with findings by Buus et al.,¹⁸ Alang et al.,¹⁹ and Qiu et al.,²⁰ who demonstrated that majority of their participants did not perceive the presentation as an illness. A scant 10% of the participants in our sample recognized some mental illness in the person described in the vignette, with only 1 participant (0.5%) correctly naming it as "depression." This is similar to findings by Qiu et al.²⁰ who reported that about 1% of the participants attached the label of depression. Buus et al. also reported that most of their participants did not attach distress to depression.¹⁸ Studies on patients with depression from India have also shown that the majority do not endorse a biomedical causation and attribute their problems to psychosocial factors rather than a medical illness.^{6,21} However, research from countries like China has reported slightly higher rates of recognition of depression.²² Research from Italy, Australia, and Canada has reported significantly higher rates than our findings.²³⁻²⁵ Among those who tried to label the problem, about 40%

TABLE 3.

Association of Sociodemographic Variables with whether the Participant Endorsed Consulting a Doctor and a Psychiatrist

Variables	Categories	Should she contact a doctor for treatment?		P Value	Should she consult a psychiatrist?		P Value
		Yes	No		Yes	No	
Age in years	18-39	90	33	0.89	39	84	0.40
	40-59	42	13		23	32	
	>60	16	6		7	15	
Sex	Female	92	20	0.003**	47	65	0.012*
	Male	56	32		22	66	
Marital status	Married	116	41	0.94	47	65	0.50
	Single	32	11		22	66	
Occupation	Not working	71	18	0.09	36	53	0.11
	Working	77	34		33	78	
Religion	Non-Islam	39	6	0.028*	22	23	0.021*
	Islam	109	46		47	108	
Education	Up to SSC	87	37	0.11	43	81	0.95
	HSC and above	61	15		26	50	
Socioeconomic status	Class 5	31	15	0.66	10	36	0.018*
	Class 4	59	19		24	54	
	Class 3	35	12		19	28	
	Class 2 and above	23	6		16	13	

*P < 0.05 **P < 0.005. SSC: Secondary School Certificate, HSC: Higher Secondary Certificate.

suggested it was “tension” or worrying or too much thinking but did not think of it as a mental illness. These findings are similar to the report by Markova and Sandal.²⁶ Depression is one of the leading causes of disability globally, and these gaps in awareness are worrisome and call for public health action.

Stress, worrying, or too much thinking was given causal attribution by many participants. This is consistent with reports by Dejman et al. from Iran in women with depression,²⁷ Sadule-Rios et al. in older Hispanics of South Florida with depression,²⁸ Shankar et al. from South India in traditional healers and their patients,¹³ Pereira et al. from Goa, India, in women with depression,⁶ and Kermodé et al. from a community in Maharashtra, India.⁷ Other causative factors reported were psychological disturbances, bad luck, poverty, and food habits, which is consistent with findings of Grover et al.,⁸ who reported that psychological explanations and karma-deed-heredity category were frequently reported as causative factors. In contrast, food as a causative factor was reported

by only 3% in their study compared to 39% in our sample. In light of these findings, it is clear that the understanding of biomedical causation is poor and needs to be promoted. While screening for depression, health-care professionals need to be aware of idioms of distress such as “tension,” which is colloquially used to denote a wide range of mental health concerns.

Around one-fifth of the individuals attributed the problem to evil spirits and black magic, which may be because belief in spirits, black magic, and jinn are quite prevalent in the rural communities of Dakshina Kannada district of coastal Karnataka where the study was conducted. These beliefs can become an impediment in help-seeking and may lead to delays in treatment. Our findings are in line with a study by Joel et al.¹⁴ that reported that when given a vignette describing psychosis, 40% of the participants believed black magic, and about 30% believed evil spirits, to be causative of the problem. In contrast, Grover et al.⁸ reported a smaller proportion of participants, with 9.7% reporting possession

and 2.4% reporting sorcery as a causative factor, which may be because more than half of their participants were from an urban background.

A majority of participants perceived that support from the family helps address the problem in the vignette, which is consistent with findings from studies by Kermodé et al.,⁷ Dejman et al.,²⁷ and Qiu et al.²⁰. Nearly one-fourth of the participants suggested visiting a religious/spiritual healer, which is due to the prevalent beliefs in this community. A meagre 34.5% of the participants recommended consulting a psychiatrist, consistent with findings from a study by Qiu et al.¹⁹.

The majority of the participants had not heard of any specific mental illness, and a paltry 3.5% had heard about depression, which may be due to the lower educational attainment of the participants and lack of effective awareness programs in the community. Our study also revealed that female participants were more likely to endorse consulting a doctor or a psychiatrist, which may be because men perceive consultation

with a psychiatrist as stigmatizing.²⁹ In addition, participants belonging to the Islam religion were less likely to consult a doctor/psychiatrist. This is similar to a study by Abiodun in Nigeria, which reported that Muslims were more likely to seek care from traditional or religious healers rather than mental health professionals.³⁰ Also, participants belonging to the lower social class were less likely to endorse psychiatric consultation, which may be because psychiatric services may be perceived as expensive and less accessible than visiting a religious or spiritual healer.

Our study had a few limitations. It was a cross-sectional interview using a single case vignette, which may not reveal the full spectrum of beliefs held about depression. Convenient sampling was used to identify households from two of the four wards of the village, which means the findings may not fully represent the whole community. Despite these limitations, this study was unique. It was one of the first to look at explanatory models of depression in a rural community in Southern India and picked up unique cultural beliefs of the rural population of coastal Karnataka.

Conclusion

Stress and excessive worrying predominate the explanatory models of depression of people in the studied rural community of coastal Karnataka, and clinicians should be aware of these idioms of distress. A vast majority failed to identify depression as an illness or acknowledge the biomedical model of depression. Sex, religion, and socioeconomic class are determinants of help-seeking behavior and predict whether individuals endorse consulting a doctor or a psychiatrist. Awareness campaigns are the need of the hour to educate people about depression and its treatment. The inclusion of explanatory models of a particular community in designing mental health services and building the capacity of healthcare professionals to screen, diagnose, and treat/refer is crucial to reduce the mental health gap.

Acknowledgments

We acknowledge support from Faculty of Department of Community Medicine, Yenepoya Medical College, Mangaluru, especially Dr Madhavi Bhargava and Dr Poonam Nirgude for their

support in the planning and execution of community survey and data collection at Harekala village, Mangaluru.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

This project was done with funding from ICMR-STS (Short Term Studentship) award (Reference ID: 2018-01181) given to medical undergraduates for research activities.

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