

A Comparative Study of Health Anxiety in Neurology and Psychiatry Settings

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J Neurosci Rural Pract 2020;11:125–129

Abstract

Objectives Prevalence of health anxiety is highly varied based on different settings and samples studied. This study aimed to assess the prevalence of health anxiety among outpatients attending neurology and psychiatry outpatient setting in tertiary care hospital and understand the clinical correlates.

Participants and Methods This was a cross-sectional study conducted in the outpatient settings including participants fulfilling study criteria. The assessments included semi-structured proforma for demographic and clinical details, general hypochondriasis subscale of Illness Behavior Questionnaire, and Short Health Anxiety Inventory. Data were collected in Epi-info and data analysis was done using STATA12.

Results The health anxiety was reported to be 25% and 19% among psychiatry and neurology outpatients, respectively. Higher education level positively correlated with health anxiety. Skilled workers tend to have higher health anxiety than semiskilled workers. Patients with diagnosis of somatoform disorder and multiple diagnosis scored higher on health anxiety in both the settings.

Conclusion Health anxiety appears to be common in psychiatry and neurology settings and needs further evaluation to understand its impact on consultation and health resource usages.

Keywords

- ▶ health anxiety
- ▶ psychiatry
- ▶ neurology
- ▶ outpatient

Introduction

Health anxiety has been described as “concern about health in the absence of pathology or excessive concern when there is some degree of pathology.”¹ It is associated with functional impairment, as well as inappropriate utilization of health care services. The severe form of health anxiety constitutes hypochondriasis.²

Significant variation in the prevalence rates of health anxiety within different medical settings has been reported. A study conducted to assess the prevalence of pathological health anxiety across different specialities of medical outpatient clinics using Short Health Anxiety Inventory (SHAI) reported that around 20% were found to have significant health anxiety.³ A prevalence of 36.7% for hypochondriasis and 51.1% for severe and disabling health anxiety was reported in chronic pain patients in a comparative study of health anxiety among

patients attending chronic pain clinic with controls using SHAI.⁴ Studies on health anxiety in diabetes mellitus and multiple sclerosis have reported high levels of health anxiety.^{5,6} A community study done in German population ($n = 2198$) reported that only 0.4% fulfilled the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition, criteria for hypochondriasis and approximately 6% of subjects found to have high health anxiety.⁷ Another epidemiological study in Australian population among 8841 respondents reported that 3.4% of the sample had health anxiety at the time of assessment and 5.7% had health anxiety at some point in their life.⁸ In a review done on epidemiology of health anxiety and hypochondriasis by using different diagnostic criteria, health anxiety reported in the general population had a wide range (2.1–13.1%). Weighted prevalence of hypochondriasis was around 0.40% (range: 0.0–4.5%) and abridged hypochondriasis 1.00% (0.6–2.0%) in general population.⁹ These variations in the prevalence of health anxiety is due to different

DOI <https://doi.org/10.1055/s-0039-3399395>
ISSN 0976-3147.

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specialties, settings, and different medical diagnosis. There is minimal research in the area of health anxiety in developing countries such as India. This study aimed to assess prevalence and clinical correlates of health anxiety among patients attending neurology and psychiatry outpatient clinics.

Methods

The objectives of the study included assessment of the health anxiety in patients attending neurology and psychiatry settings and studying the demographic and clinical correlates of health anxiety. It was a cross-sectional study with sample being chosen from patients attending outpatients' services of psychiatry and neurology at NIMHANS, Bengaluru, India. The inclusion criteria for the study were gender, age more than 18 years, and patients who could understand Kannada, Tamil, or English. Patients with a diagnosis of severe mental illness were excluded. Patients were excluded if they could not complete the survey because of mental or physical incapacity. Based on reported prevalence of health anxiety as 20%, a relative error of 20%, and 5% type-1 error probability, a target sample size of 400 patients was required in each setting. Eligible patients were identified by systematic random sampling from psychiatry and neurology outpatient services.

After obtaining written informed consent, the patients were interviewed and information on demographics (age, sex, education level, socioeconomic status, occupation), clinical symptoms, comorbid conditions, and diagnoses was obtained. This was followed by administration of, self-report questionnaire of SHAI, and general hypochondriasis subscale of Illness Behaviour Questionnaire.

Short Health Anxiety Inventory

It is a self-report 18-item questionnaire that assesses health concerns over a period of 6 months that includes domains of illness worry, disease conviction, and negative consequences, rated on a Likert scale from 0 to 3. The SHAI has demonstrated good reliability, criterion validity, and sensitivity to treatment.¹⁰ The SHAI was translated and back translated following standard procedures of translation.

Illness Behavior Questionnaire

It is a self-administered questionnaire that uses a "yes"/"no" response format. The expanded version contains 62 items of which 11 of the questions were taken from the general hypochondriasis subscale of Illness Behaviour Questionnaire. It assesses the maladaptive responses to illness including hypochondriacal responses.^{11,12}

Data Analysis

Data entry was done using Epi-info 7.0¹³ and data analysis using Stata 12.¹⁴ Descriptive analyses were done with mean (standard deviation), median (interquartile range), or proportions (%) as appropriate. The responses received for each option of Illness Behavior Questionnaire (IBQ) and SHAI scales were tabulated separately for patients from neurology and psychiatry. Test scores on each scale

were computed as were the proportion of patients with threshold scores. Only the first 14 items of the SHAI that assess the illness worry and body vigilance were included while estimating the overall score and prevalence, because the last four items assessed the perceived negative consequences of developing a serious illness that may not be applicable for patients already having a serious illness as reported in earlier studies (medical samples). Correlations between IBQ and SHAI were assessed using r^2 values. Respondents from neurology and psychiatry outpatient department were compared using chi-squared tests for proportions and t -tests for scores. The statistical significance level was considered at $p < 0.05$.

Results

A total 843 patients were assessed in the study of which 431 were in psychiatry setting and 412 were in neurology setting. The mean age of participants was 37 ± 11.77 years; being lower in the neurology group (35 ± 11.6) than psychiatry group (39 ± 10.95) ($t = 5.44$; $p < 0.01$). Women composed 49% (411) of the total sample, with more women in psychiatry group than neurology group ($p < 0.05$). Majority of them were from urban background (527, 62.5%), while 13.4% (113) were illiterate. In the total sample, 11.2% (95) participants were unemployed, 23.7% (200) were home-makers, and the rest were skilled and semiskilled workers. Majority of the sample belonged to upper lower (51%, 418) and lower middle (25.4%; 208) socioeconomic status (**►Table 1**).

In the total sample, the most common primary diagnosis was seizure disorder (26%) followed by depression (17%), anxiety disorder (15%), somatoform disorder (15%), in that order. The most common diagnosis in psychiatry sample was depression (32%) and the most common diagnosis in neurology was seizure disorder (52%). Patients in psychiatry group had more than one diagnosis (second diagnosis). In neurology, the most common additional diagnosis (second diagnosis) was other psychiatry diagnosis (3%) followed by seizure disorder (2%) and headache disorder (1%) in that order, respectively. Sixteen percent of the sample had comorbidities such as cardiovascular disorders, thyroid disorders, diabetes mellitus, tuberculosis, and others apart from their primary psychiatric or neurological diagnosis.

The mean SHAI score in psychiatry and neurology was 14.76 ± 8.01 and 13.17 ± 7.23 , respectively, while the mean SHAI score in the total sample was 13.98 ± 7.67 . This difference in the mean SHAI scores was statistically significant. With cutoff score of SHAI ≥ 20 , the prevalence of health anxiety in psychiatry was 25% that was more than the prevalence of health anxiety in neurology (i.e., 19%), with an overall prevalence of 22%. The difference in the two groups was significant. With a cutoff score of ≥ 27 for 14 items, the prevalence estimates were 9% in psychiatry and 5% in neurology that were again statistically significant.

The mean SHAI score was compared with age, gender, background, marital status, education level of the patient, and socioeconomic status. Only education level correlated with SHAI scores. Higher the education, higher were the scores on

Table 1 Demographic and clinical characteristics of enrolled patients

	Psychiatry (n = 431)	Neurology (n = 412)	Total (n = 843)	p-Value
Age (mean [SD])	39 (10.5)	35 (11.6)	37 (11.8)	< 0.01
Gender				
Male				
Female	240 (55.7)	171 (41.6)	411 (48.8)	< 0.05
Education				
Illiterate	81 (18.7)	32 (7.7)	113 (13.4)	< 0.01
Primary/middle/high	221 (51.3)	217 (52.6)	438 (51.9)	
Intermediate/post-high	129 (29.9)	163 (39.5)	292 (34.6)	
Occupation				
Unemployed	48 (11.1)	47 (11.4)	95 (11.2)	< 0.01
Unskilled	92 (21.3)	26 (6.3)	118 (13.9)	
Semiskilled	84 (19.5)	128 (31.1)	212 (25.1)	
Skilled	56 (12.9)	57 (13.8)	113 (13.4)	
Clerical/ business/professional	46 (10.7)	58 (14.1)	104 (12.3)	
Housewife	104 (24.1)	96 (23.3)	200 (23.7)	
Socioeconomic status (modified Kuppaswamy Scale)				
Lower	3 (0.7)	4 (1.0)	7 (0.9)	0.001
Upper lower	235 (57.7)	183 (44.4)	418 (51.0)	
Lower middle	86 (21.1)	122 (29.6)	208 (25.4)	
Upper middle	68 (16.7)	87 (21.1)	155 (18.9)	
Upper	15 (3.7)	16 (3.9)	31 (3.8)	
Monthly family income (median [IQR])	7000 (5000–15000)	10000 (5000–16000)	9000 (5000–15000)	0.02
Symptom profile				
No symptoms	96 (22.3)	228 (55.3)	324 (38.4)	< 0.01
Only physical	273 (63.3)	125 (30.3)	398 (47.2)	
Only psychological	35 (8.1)	53 (12.9)	88 (10.4)	
Both physical and psychological	27 (6.3)	6 (1.5)	33 (3.9)	
Primary diagnosis				
Only neurology	35 (8.1)	393 (95.4)	428 (50.8)	–
Neurology and psychiatry	32 (7.4)	16 (3.9)	48 (5.7)	
Only psychiatry	364 (84.5)	3 (0.7)	367 (43.5)	
Comorbidities				
Cardiovascular	35 (8.1)	28 (6.8)	63 (7.5)	0.46
Diabetes mellitus	28 (6.5)	12 (2.9)	40 (4.7)	0.01
Thyroid disorders	1 (0.2)	20 (4.9)	21 (2.5)	< 0.01
Prior consultations	253 (58.7)	197 (47.8)	450 (53.4)	< 0.01

Abbreviations: IQR, interquartile range; SD, standard deviation.

SHAI indicating high levels of health anxiety. No other demographic variables correlated with SHAI scores. Skilled workers had higher scores on SHAI than semiskilled workers.

The mean SHAI score of patients with both neurological and psychiatric diagnosis (15.91) was higher than the patients with only neurological or only psychiatric

Table 2 Sociodemographic correlates of scores on SHAI

	Psychiatry			Neurology		
	<i>n</i>	Score	<i>p</i> -Value	<i>n</i>	Score	<i>p</i> -Value
		Mean (95% CI)			Mean (95% CI)	
Gender						
Male	240	15.4 (14.2,16.6)	0.15	171	12.9 (11.8,13.9)	0.52
Female	191	14.3 (13.3,15.2)		240	13.3 (12.4,14.3)	
Education						
Illiterate	81	12.8 (11.1, 14.5)	0.03	32	11.4 (9.6, 13.2)	0.24
Primary–high school	221	14.9 (13.8, 15.9)		217	13.0 (12.0, 14.0)	
Intermediate school or higher	129	15.7 (14.3, 17.1)		163	13.7 (12.6, 14.8)	
Occupation						
Unemployed	48	14.3 (12.0, 16.5)	0.01	47	12.79 (10.68,14.89)	0.62
Unskilled	92	12.7 (11.3, 14.1)		26	12.04 (9.52,14.56)	
Semiskilled	84	17.1 (15.3, 18.8)		128	13.53 (12.22,14.84)	
Skilled	56	16.3 (13.9, 18.6)		57	14.42 (12.53,16.31)	
Clerical/business/Prof/farmer	46	14.2 (11.8, 16.6)		58	13.09 (11.38,14.79)	
Housewife	104	14.2 (12.7, 15.7)		96	12.53 (11.07,13.99)	
Physical symptoms						
No	131	13.01 (11.5, 14.5)	0.01	281	12.8 (11.9, 13.6)	0.08
Yes	300	15.5 (14.7, 16.4)		131	14.1 (13.0, 12.2)	
Psychological symptoms						
No	369	14.4 (13.6, 15.2)	0.02	353	12.8 (12.0, 13.5)	0.01
Yes	62	16.9 (14.5, 19.3)		59	15.6 (13.5, 17.6)	

Abbreviations: CI, confidence interval; SHAI, Short Health Anxiety Inventory.

diagnosis. Patients with diagnosis of somatoform disorders had higher scores on SHAI compared with other diagnosis.

The SHAI scores had no significant correlation with age of the patients both in psychiatry (correlation = 0.034, $p = 0.48$) and in neurology (correlation = 0.035, $p = 0.48$) (– **Table 2**).

There was a significant correlation between the 14-item SHAI score and IBQ score in psychiatry (correlation= +0.63, $p < 0.01$) and in neurology (correlation= +0.57, $p < 0.01$), and overall among all respondents (correlation = +0.61, $p < 0.01$). On linear regression, each unit increase in IBQ was associated with 1.54 (95% confidence interval [CI]: 1.36, 1.72) points increase in SHAI score in psychiatry respondents, while the corresponding change in neurology respondents was 1.32 (95% CI: 1.14, 1.51) points and 1.42 (95% CI: 1.30, 1.55) points among all respondents.

Discussion

Our study reported a prevalence rate of health anxiety was 25% in psychiatry setting and 19% in neurology settings when a cutoff of 20 was used. There are variations in different studies with regard to cutoff score for assessing health anxiety and also regarding 14 or 18 items as there

was a controversy that the last four items that assessed the perceived negative consequences may not be applicable in medical settings in certain studies. Considering these facts, in this study we included only the first 14 items for studying the prevalence in both the settings. The two groups differed significantly on most of the demographic variables, and hence the differences in the prevalence may not be due to the setting alone.

The prevalence of health anxiety in neurology was lower in our study compared with the previous study in neurology setting.³ The rates of higher health anxiety in psychiatry group could be due to the fact that majority of the patients had a diagnosis of somatoform disorders who were reported to have high health anxiety. A cutoff score of ≥ 27 also has been recommended in previous studies especially to discriminate patients with hypochondriasis from other anxiety disorders using a 18-item version of SHAI.¹⁵ Utilizing this cutoff in our study and including only the first 14 items revealed a prevalence of approximately 9% in psychiatry setting and 5% in neurology setting. Despite the use of higher cutoff score, the psychiatry group had higher health anxiety than neurology group that has been demonstrated in previous study.¹⁶

When the demographic characteristics of the groups were examined, women were more in psychiatry group (56%) when compared with neurology (42%) that was significant. However, in the overall sample there were no gender differences. This difference could be due to the fact that the psychiatry group was represented by patients with anxiety, depression, and somatoform disorders whose prevalence has been noted to be high in women than in men.¹⁶ Majority of the patients were from urban background (63%) in both the groups. The sample is chosen from a tertiary care center located in an urban setting that predominantly caters to urban population. Higher education was associated with higher health anxiety, possibly due to higher awareness of the illness or consequences of an illness.

Age did not have any correlation with health anxiety score that is in accordance with earlier studies.⁴ Many studies have reported higher rates of health anxiety in women¹⁷ this study did not find any difference and gender did not have any correlation with health anxiety. Though female patients were more in psychiatry (56%) than neurology, the mean SHAI score was higher in males than in females.

Patients with a diagnosis of somatoform disorder had a statistically significant high health anxiety scores (17.49) than patients without somatoform disorder (13.38). This is an expected outcome as patients with somatoform disorders are overly concerned about their symptoms. It has been found in our study that patients having more than one diagnosis had high health anxiety scores (15.65) than patients with a single diagnosis (13.80). Patients who had both neurological and psychiatric diagnosis had high health anxiety score (15.91) than patients with only psychiatric diagnosis (14.83) or only neurological diagnosis (13.04). Though health anxiety scores have been compared across different symptoms and diagnosis of the patients, there is difficulty in comparing with other studies as there is paucity of data on the same. There is also a heterogeneity of the scores among various diagnosis in medical settings. Also, in our study only few patients had an already established hypochondriacal disorder diagnosis and they have been clubbed under somatoform disorder diagnosis group. Because of this, the difference in score between patients with hypochondriasis and other anxiety disorder diagnosis could not be compared as done in previous studies. Education, somatoform disorders, and multiple diagnosis significantly influenced the prevalence of health anxiety.

The strengths of the study include it being done on a large sample, using tools that are psychometrically validated. The limitations of the study include that even though the tools are psychometrically sound in measuring the construct of health anxiety, they need to be validated in our setting. It is a cross-sectional study and hence the influence of disease status and duration of illness could not be ascertained. The cutoff score is not known in Indian settings. Though the tools have been reported to have good discriminant validity, considering the overlap of health anxiety in different disorders the presence of underlying disorders also might have influenced the score to some extent, which needs consideration.

Health anxiety appears to be common among patients attending psychiatry and neurology settings and may need further evaluation to understand its impact on consultations and health resources usage.

Funding

None.

Conflict of Interest

None declared.

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