PSYCHIATRIC CO-MORBIDITIES IN PATIENTS WITH CHRONIC PAIN SYNDROME: A CROSS SECTIONAL STUDY

Kollara Sukumaran Jyothi[1], Thoppil Purushothaman Sumesh[2]

[1]Assistant Professor, Department of Psychiatry, Government Medical College, Thrissur.
[2]Assistant Professor, Department of Psychiatry, Government Medical College, Thrissur.

ABSTRACT

BACKGROUND

Severe persistent pain is a significant stressful experience and it possibly causes psychiatric morbidities. Most of doctors working in chronic pain management apart from psychiatrist believes that worries and distress of patients with chronic pain can be consider as normal response to a chronic stress. This study aims to measure the prevalence of psychiatric co morbidities in patients with chronic pain, its relation with severity of pain and to compare the common screening questionnaires to valid diagnostic interview.

MATERIALS AND METHODS

Patients with chronic pain were recruited from pain clinic of Christian Medical College, Vellore after an informed consent. Data such as socio demographic information, two screening questionnaires GHQ and HADS, and a Clinical Interview Schedule-Revised (CIS-R) were collected. Pain severity was assessed by VAS (Visual Analogue Scale).

RESULTS

62 Patients were included in the study. As a screening tool, we found that General Health Questionnaire (GHQ) is more useful than Hamilton Anxiety Depression Scale (HADS). CIS-R (clinical interview schedule revised) detected 51.6% of sample as cases of psychiatric morbidity. No correlation between severity of pain and psychiatric co morbidity was seen in this study.

CONCLUSION

Around fifty percent of pain patients are detected to have possible psychiatric disorders. Labelling all these as psychiatric disorders is too inclusive. Some of these can consider as normal response to a chronic distress. Referring them to a psychiatrist is an option. As a screening tool GHQ is simple, less confusing and time consuming than HADS, with more specificity and sensitivity.

KEYWORDS

Chronic Pain, Psychiatric Comorbidity, Psychiatric Illness.

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BACKGROUND

Severe or persistent pain is one of the most challenging experiences that a person can face and it affects health.[1] Psychological impact of chronic pain on individual is important; many of them have adjustment disorders, major depression or anxiety. From the mid to late 1990s, structured interviews such as the Diagnostic Interview Schedule have been used to ascertain the presence of formal psychiatric diagnosis in chronic pain patients.[2]

Studies related to psychological effects of pain in an Indian context are scarce. Western Studies show that chronic pain is a state of continuous distress that causes psychiatric morbidity.[3,4,5,6,7,8,9]

Most of the pain management team believes that psychiatric symptoms like anxiety and depression, associated with chronic pain are normal response to pain and no need of psychiatric referral.

Identifying these psychiatric morbidities by using simple screening questionnaires and appropriately treating them or referring them to a psychiatrist are important.

MATERIALS AND METHODS

Aims and Objectives

- To identify psychiatric co morbidity in patients with chronic pain syndrome
- To examine the correlates between severity of pain and psychological morbidity.
- To compare common screening questionnaires to a valid diagnostic interview.

Methods

This study was conducted at the pain clinic of Christian Medical College, Vellore, where patients with chronic pain were recruited. Two screening scales were administered. The first one was the General Health Questionnaire (GHQ)

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Corresponding Author:
Dr. Thoppil Purushothaman Sumesh,
#M10/18, Aswathi, Ashok Nagar,
Ayyanthole, Thrissur-680003, Thrissur.
E-mail: drsumeshtp@gmail.com
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to measure the degree of mental distress. The second scale used was the Hospital Anxiety and Depression Scale (HADS) to detect anxiety and depression and also to measure their severity. The Revised Clinical Interview Schedule CIS-R) was carried out to identify minor psychiatric disorders. A visual analogue scale (VAS) was administered to assess subjective severity of pain.

Inclusion Criteria

1. Patients with chronic pain (pain more than 6 months).
2. Age above 16 years.
3. Able to speak English or Hindi or Tamil.

Exclusion Criteria

1. Patients with cognitive deficit or psychotic symptoms.
2. Suffering from terminal illness or awaiting surgery.
3. Unable to give informed consent or unwilling to participate.

Measures

1. General Health Questionnaire (GHQ).[10]

The General Health Questionnaire[10] is widely used to assist in the detection of non-psychotic psychiatric illnesses. The original version contains 60 items. The GHQ 12 is the shortest version of the GHQ. The Tamil version of GHQ version 12 has been validated for use in the rural population of Tamilnadu[11] (S John et al, 2006). Each question contains 4 answers with scores 0, 0, 1, 1 and makes the GHQ an efficient tool for screening for common mental disorders with a threshold of 2/3. Two bilingual persons carried out the translation of GHQ into Hindi. The process included translation and back translation. A consensus was reached by discussing semantic, content, and technical equivalence. The English, Hindi and Tamil versions of GHQ were used for this study.

2. Hospital Anxiety and Depression Scale (HAD)

HAD is a self-screening questionnaire for depression and anxiety.[11] Although it was designed for hospital general medical outpatients, it has been extensively used in primary care. It consists of 14 questions, 7 for anxiety and 7 for depression. Each question contains 4 answers with scores 0, 1, 2, 3 respectively. Total scores 0-7 in respective subscale are considered normal, with 8-10, borderline and 11 or more indicate clinical case ness. Two bilingual persons carried out the translation of HAD scale into Hindi and Tamil. The process included translation and back translation. A consensus was reached by discussing semantic, content, and technical equivalence. The English, Hindi and Tamil versions of HAD scale were used for this study.

3. Visual Analogue Scale (VAS)[12]

A Visual Analogue Scale (VAS) is a measurement instrument that tries to measure a characteristic or attitude that is believed to range across a continuum of values and cannot easily be directly measured. Operationally a VAS is usually a horizontal line, 100 mm in length, anchored by word descriptors at each end. The patient marks on the line the point that they feel represents their perception of their current state. The VAS score is determined by measuring in from the left-hand end of the line to the point that the patient marks. The pain clinic members administered the VAS and the score was unknown to the primary investigator when he collected the study data.

4. Socio Demographic Profile

The following information was collected from patients - age, gender, education, literacy, residence, religion, and employment status.

5. Clinical Interview Schedule – Revised (CIS –R)

Clinical interview schedule is for the assessment of minor psychiatric disorders.[13] The first part (entitled reported symptoms) has 10 items and the second (manifest abnormalities) has 12. Each of the 22 parts is scored on a 0-4 scale. The CIS-R asks about the symptoms during the week immediately preceding the interview and assigns a score according to their frequency and severity. The score obtained from each of the reported symptoms and manifest abnormalities are combined to yield a "total weighted score. The CIS-R consists of 14 domains, such as anxiety, depression, irritability, obsessions, compulsions, and panic. Each domain includes mandatory and scoring questions. The sum of the scoring questions generates a total score (range, 0-57) that is a measure of non-psychotic psychiatric morbidity; scores of 12 or more indicate case-level morbidity.

Procedure

Charts of all patients attending the Pain Clinic were screened. Those fulfilling inclusion and exclusion criteria were invited to participate. Informed consent was taken. Those willing to participate were interviewed using the study instruments. Confidentiality was assured and maintained. 62 subjects were included in the study. None of those screened refused consent.

Ethical Considerations

The project was presented to the Institutional Review Board of the Christian Medical College Hospital for ethical clearance before any data was collected. Informed consent was obtained.

Determination of Sample Size

EpiInfo (Ver. 5.0, 1990) was employed to calculate the sample. A sample size of 62 was obtained based on the following assumptions; estimated prevalence of psychiatric morbidity in patients with chronic pain 40%; estimate of error 10%; confidence limits 95%.

Data Analysis

The data was entered in MS EXCEL and the following analysis was done.

1. The prevalence of psychological co morbidity in patients with chronic pain syndrome.

2. Correlation between pain and psychological co morbidity.

Mean, standard deviation and range was employed to describe continuous variables, while frequency distributions were obtained for di/polychotomous variables. The chi-square was used to assess the significant of association for categorical data. Student's t test was used to test the association of continuous variables. Spearman's Rank correlation was used to assess the relationship between continuous variables

The statistical software SPSS for Windows Release 12 was employed for the analysis of the data.

RESULTS

The total sample of patients with chronic pain syndrome was 62 of which 38.7% were males and 61.3% were females. In the sample about 54.8% had secondary education, 14.5% had higher education. 12.9% were graduates, 9.7% had primary education, 3.2% were postgraduates, and 4.8% were illiterate. In the sample 90.3% were able to read and write, 3.2% could read only and 6.5% were illiterate. In the sample 72.6% were urban and 27.4% were rural, 12.9% were married and 87.1 % were unmarried.

Religion	Frequency	Percentage
Hindu	56	90.3
Muslim	2	3.2
Christian	4	6.5
Total	**62**	**100.0**

Table 1. Religion Status

Among the sample 90.3% were Hindu, 6.5% were Christian, and 3.2 % were Muslims.

Regarding employment status, 38.7% were employed, 44.4% were housewives, 14.4% were unemployed and 1.6% was students.

VAS Score	Frequency	Percentage
0-2	3	4.8
3-5	26	41.9
6-8	30	48.38
9-10	3	4.8
Total	**62**	**100.0**

Table 2. VAS Pain Score Status

4.8% people scored below 2, 41.9% scored 3 to 5, 48.4% scored 6 to 8 and 4.8% scored 9 to 10.

GHQ score	Frequency	Percentage
< 5	34	54.83
5 and above	28	45.16
Total	**62**	**100**

Table 3. Prevalence of Psychiatric Disorders Using GHQ

GHQ cut of 5 and above was considered for case ness. There were 54.83% cases and 45.16% non-cases.

HADS score	Frequency	Percentage
< 11	35	56.45
11 and above	27	43.16
Total	**62**	**100**

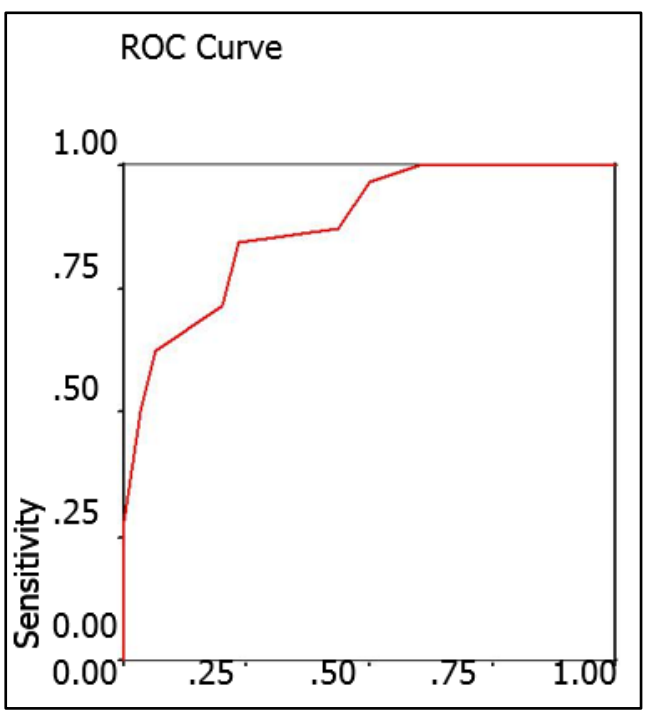
Table 4. Prevalence of Psychiatric Disorders Using HADS

HADS cut of 11 and above was considered for case ness. There were 56.45% cases and 443.16% non-cases.

CIS-R Score	Frequency	Percentage
< 12	30	48.4
12 and above	32	51.6
Total	**62**	**100**

Table 5. Prevalence of Psychiatric Disorders CIS - R

CIS-R cut of 12 and above was considered for case ness. There were 51.6% cases and 48.4% non-cases.



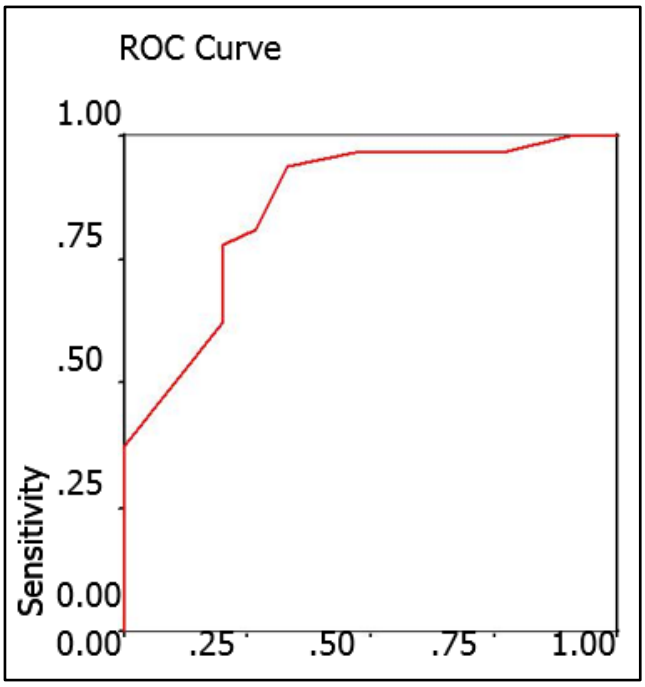
Graph 1. Best Cut off Value for GHQ

1 - Specificity

Diagonal segments are produced by ties.

Area Under the Curve is 0.879

Receiver operating characteristic curve (ROC) was done to find the best cut off for General Health Questionnaire to distinguish cases and non-cases as detected by the CIS-R. A cut off of 5/6 was found to be best with a sensitivity of 84% and specificity of 77%.



Graph 2. Best Cut off Value for HADS

1 - Specificity

Diagonal segments are produced by ties.

Area under the Curve is .860

Receiver operating characteristic curve (ROC) was done to find the best cut off for Hospital Anxiety Depression Scale to distinguish cases and non-cases as detected by the CIS-R. A cut off of 11 was found to be best with a sensitivity of 81% and specificity of 74%.

	Number	Median	Range	P value
Cases CISR>11	30	6.0	3-10	0.41
Control CISR<12	32	6.5	3- 9	

Table 6. Relationship between VAS Score in Cases and Non-Cases (CISR)

Median VAS scores for cases and non-cases were compared using chi square test. It was found that there was no significant difference in the VAS scores between cases and non-cases

DISCUSSION

Sociodemographic Profile

The socio demographic profile of this group with chronic pain is in some ways similar to a general population; but in some variables it is different. Our sample contains 61.3% of females and 38.7% of the males; which is not comparable with Indian census data 2001(number of females for 1000 males is less than 1000). The reason for this discrepancy could be the high prevalence of chronic pain syndrome in females.

Our sample represents 72.6% of urban and 27.4% of rural population, which is the reverse of general population data (70% rural and 30% urban). This could be a reflection of the fact that hospital facilities are more used by the urban population (WHO, World Health Statistics 2007).

Hindus were predominant in the sample (90.3%) with 6.5% of the Christians and 3.2% of Muslims; but our general population data is, 80% Hindu, 13% Muslims, and 1.8% Christians. The higher proportion of Christians in our data may be due to this being a Christian institution.

The literacy rate (the ability to read and write) of the sample was 90.3%; which is more than the National literacy rate (65.38%), this may be because literate people use hospital facilities more (WHO, World Health Statistics 2007).

The total unemployment in the sample was 9%, which is similar to national data (7.8%).

In conclusion our sample is not fully representative of the general population; but is a mostly urban, more literate, and predominantly female population. This is possibly more representative of a population in a specialty clinic of a hospital.

Psychological Morbidity

After screening with CIS-R we found that 51.6% of the sample reaches the level of psychiatric "caseness". A population-based study.[14] reported 16.9% of psychiatric diagnosis in chronic pain patients. Another naturalistic study in lower back ache pain patients.[15] reported a life time and 6-month prevalence of major depression 32% and 22% respectively. Rickie et al, 1983 has reported 98% of axis I diagnosis in patients with chronic pain; this included alcohol dependence.[16] Our sample has not included alcohol dependence, as we have used CIS-R for screening. 70% of axis I diagnosis is reported by Edward et al, 2002. The levels of psychological morbidity in this sample are similar to other published data.

The question of wrongly labelling distress associated with significant chronic pain as psychiatric caseness is relevant in this situation. None of the identified cases were viewed by the pain clinic team to be suffering from a definite depressive illness or anxiety disorder, which undeniably fell into conventional conceptions of psychiatric "illness"; all were seen to be showing an "understandable" or "normal" response to their pain. It may not always be accurate, and might sometimes be harmful to assume that all of them are cases. It is important to be clear about this differentiation. In the case of patients disabled by the psychological consequences of adversity, a relatively brief period of legitimate social space may well facilitate the solution of problems, which might otherwise have resulted in the breakdown of family or work relationships. This is an important role for the doctor.[17] People with personal and social difficulties who might benefit from counseling are ill-served if they are misunderstood and encouraged to view their difficulties as disease meriting treatment. Ill directed treatment is a potent cause of costly and disabling abnormal illness behaviour and may contribute to long term morbidity.[18]

However, there is increasing evidence that many of the clearly defined neurotic syndromes panic attacks, social

phobia, obsessive compulsive disorder, and agoraphobia- are best construed as discrete disorders and treated accordingly, with appropriate medication or cognitive behavioural psychotherapy.[19] Patients with ill-defined psychiatric problems can have a poor prognosis. Appropriate treatment can happen only if the neurotic syndrome is identified as a primary cause of distress and disability, rather than a consequence of adversities like chronic pain and personal difficulties. In this situation there is a need to consider their problems in greater detail and to identify specific disorders where they exist, and where they don't, to respect the roles of social, economic, occupational, and physical health problems in determining and shaping psychological disability. Only then can empathy, social support, and understanding be provided when they are appropriate and a more medical approach, whether drug treatment or psychological therapy, be made available where it might be most effective.

Screening Tools

We have used 2 screening instruments for detecting cases (GHQ and HADS), and found that General Health Questionnaire is a better tool in screening due to following reasons-

GHQ, in administration was simple, less confusing and less time consuming than HADS. At a cut-off of 5/6 GHQ had high specificity (77%) and sensitivity (84%) to detect psychiatric cases against the gold standard (CIS-R). In comparison the HADS sensitivity (81%) and specificity (71%) was lower at the best cut off score of 11.

John et al (2006) report that the predictive value of the GHQ as a tool for screening was found to differ depending on the setting in which it is used. Screening instruments need to be validated in specific types of populations before being employed.[10]

Pain and Psychological Morbidity

There was no correlation between the severity of pain and being a case using the CIS-R. In the presence of over 50% of case positive in the group, this may suggest that it is the experience of continuous pain, rather than its severity that causes psychological symptoms. This hypothesis needs to be confirmed.

Limitations of the Study

1. The cross-sectional design of the study does not allow us to trace the sequence and pattern of changes in pain, and development of psychiatric symptoms.
2. CIS-R uses an atheoretical construct to detect psychological distress, anxiety and depression. It is not possible to differentiate disorders from understandable or normal reactions to stress.

CONCLUSION

Psychiatric co-morbidity in chronic pain syndrome is around 51.6% in our study, detected by clinical interview scheduled-revised (CIS-R). Our pain clinic team was considering all these cases as normal and understandable reaction to pain. Labelling all these cases as psychiatric disorder may not be right. Because a subgroup of this can be explained by normal response of distress associated with pain. However, detecting this as probable psychiatric disorder and referring to a psychiatrist may be prospective. That will facilitate detailed evaluation and appropriate management by medication or psychotherapy.

General Health Questionnaire (GHQ), and hospital anxiety and depression scale were used as screening tools and found that GHQ is simpler, less confusing and less time consuming with more sensitivity and specificity and sensitivity. So, in a general hospital setting like pain clinic GHQ can be used as an effective screening tool.

For making proper psychiatric disorder diagnosis CIS-R may not be adequate because it includes only anxiety and depression related questions. A structured clinical interview-based ICD-10 or DSM-5 may be more useful which include all categories of diagnosis.

Our study could not find any co-relation between severity of pain and psychiatric morbidity, it could be because of psychological experience of pain. This hypothesis has to be studied further with appropriate study designs.

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