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Association of chronic ache with depression and anxiety

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ABSTRACT. To investigate relationship between chronic ache, depression and anxiety. The study looked into correlations between chronic pain, sadness, and anxiety using data from several Karachi regions. There are 1490 people in the entire sample. The Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM IV)-based Composite International Diagnostic Interview was used to assess depression and/or anxiety (CIDI, version 2.1). The Quick Inventory of Depressed Symptomatology-Self-Report, which excludes questions related to pain, was used to measure the severity of depressive symptoms. We employed self-report questionnaires to evaluate mental health. According to our findings, 326 people showed no signs of psychopathology, 314 had remitted depressive or anxiety disorders, and 198 had a current depressive disorder, which was then followed by a current anxiety illness. Maximum of 381 people reported having current concurrent depression and anxiety, while 392 people in the entire group took antidepressants. 90 (5.7%) of the 1490 individuals made no mention of any pain symptoms. Maximum participants (700) reported experiencing musculoskeletal discomfort, which was followed by gastro-intestinal pain (400), and cardio-respiratory pain (300). It has been shown that anxiety and depression are also related to the site of pain.

Keywords: depression; musculoskeletal pain; anxiety; mental disorder.

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Introduction

Pain is an unpleasant physical sensation that is influenced by a person's gender, socioeconomic class, culture, heredity, and other factors. According to several studies, the main causes of disability and sickness are pain and diseases that are associated with it (Vos et al., 2017). Around 10% of the world's population suffers from chronic pain (Raffaeli & Arnaudo, 2017). The neural system may undergo irreversible modifications as a result of the transition from acute to chronic pain (Kuner, 2010). According to the World Health Organization (WHO), depression is a significant contributor to the global illness burden and is a major cause of disability. Depression and anxiety have more common in world (Hadjistavropoulos & Craig, 2004). The association amongst chronic pain and depression has been well known (Luna et al., 2000). Comorbidity of pain and depression can affect persons of any age, but 13% of the world’s elderly population are effected.

Anxiety and depression are the two psychological diseases that are most closely associated with heightened pain sensitivity. The majority of people who live with chronic pain feel sadness and anxiety, with a significant risk of making attempts at or considering suicide. Numerous processes contribute to the etiology of chronic pain in humans, and there is growing evidence linking depression and anxiety with chronic pain (Humo, Lu, & Yalcin, 2019).

Pathophysiology of depression, anxiety and pain symptoms

Recent biomedical research has indicated that chronic pain problems, sleeplessness, and anxiety disorders all share biochemical and environmental factors with depression and anxiety disorders. Genes that control inflammatory cytokine neurotransmitters and neurotropic signaling have been discovered among biological variables. Stress can alter the sensitivity of glucocorticoid receptors in the CNS and other organs, cause hypothalamic-pituitary-adrenal axis dysfunction, alter autonomic functions, and result in an increase in the production and release of pro-inflammatory cytokines in unhealthy people. Psychosocial stress is the most prevalent environmental risk factor, especially when it is continuous. Figure 1 indicate the comorbidity of depression, anxiety, and pain as well as the clinical manifestation of sleeplessness. The purpose of this study is to examine the connections between pain and its relationships with anxiety and depression (Arango-Dávila &Rincón-Hoyos, 2018).

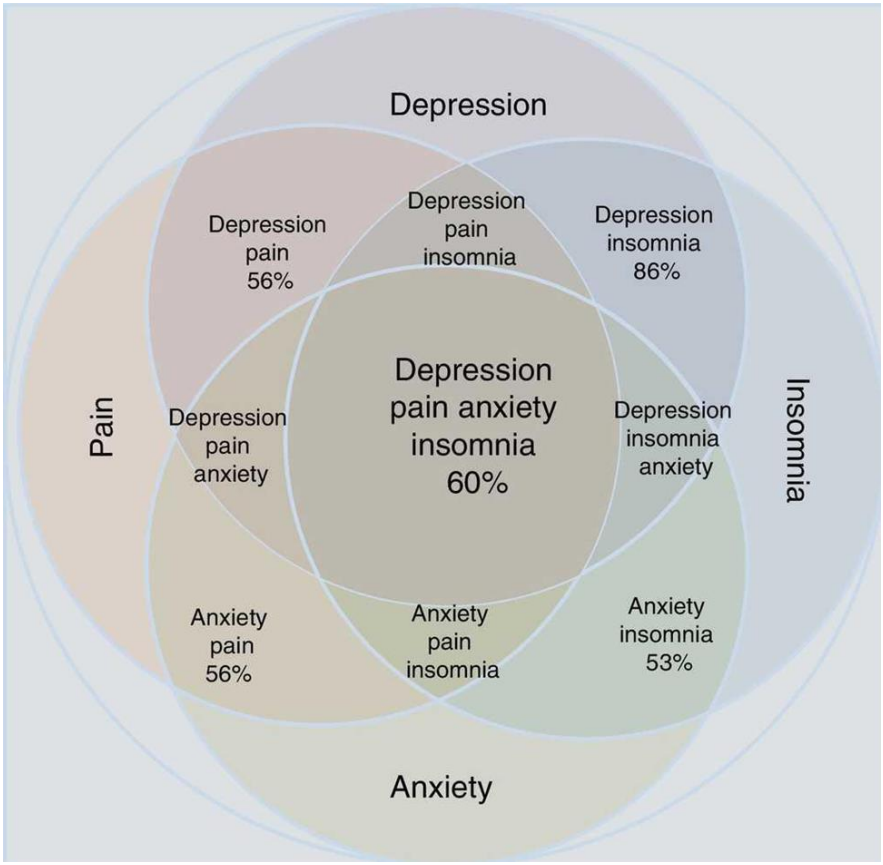

Figure 1. Epidemiological information on the overlap, co-occurrence, and comorbidity of anxiety disorder and depressive illness about symptoms of pain and insomnia.

Source: Adapted from Arango-Dávila & Rincón-Hoyos (2018).

Methodology

The Karachi Pakistan Study of Depression and Anxiety provided the data for this study. The ethical committee of the collaborating college approved the study procedure, and all participants provided signed informed permission. The total sample size is 1490 people, of whom 198 have depression, 271 have anxiety, 314 have remitted disorders, and 326 have neither a history of depression nor an anxiety disorder nor a current diagnosis of either one. Clinical research professionals with training interviewed all 1490 participants. We used the Composite International Diagnostic Interview, which was based on the DSM IV, to assess depression and/or anxiety (CIDI, version 2.1). The Quick Inventory of Depressed Symptomatology-Self-Report, which omits items related to pain, was used to gauge the severity of depressive symptoms. For this study, the baseline data for Karachi, which was gathered between December 2021 and July 2022, were used. In addition to the structured interview for evaluating mental health, physical health was evaluated using self-report questionnaires (such as chronic disease, pain, and severity of mental health).

Ethical Consideration

Ethical Approval from the Iqra medical Centre and maternity home was obtained IRB/IUNC/2022/003. Informed consent was taken from all participants. The study population received verbal and written questionnaires explaining the purpose including its significance and every step of data collection procedures of this study. The Respondent's identity was kept anonymous and their confidentiality was maintained.

Measures Pain assessment.

We measured the precise location of the pain in addition to the pain intensity. A self-report questionnaire was used to create an inventory of the pain symptoms in the neck, lower back, stomach, head, joints, face, and chest in order to pinpoint the specific pain location. Participants were asked to list one or more of these sore spots and to choose the one that has bothered them the most during the past six months. These sore spots were then classified as musculoskeletal, gastrointestinal, and chest pain signals. People might desire to

record several aching symptoms in various categories. The CIDI's use was made mandatory by the existence of a depressive or anxiety disorder. Based on this observation, psychopathology profiles were created for each person. Participants were classified as having no psychopathology (n = 326), remitting depression and/or anxiety (n = 314), current depression (n = 198), current anxiety (n = 271), or current co-morbid depression and anxiety (n = 381). (In the past 6 months).

We evaluated the severity of the depression and anxiety symptoms like this specific approach to disorders (yes/no). The quick inventory of Depression Symptomatology-Self-Report, which excludes pain relief devices, was used to gauge the severity of depressive symptoms. The QIDS-SR, a 16-object questionnaire with a wide range of responses from 0 to 27 and excessive internal consistency, is the condensed form of the self-rated assessment of Depressive Symptomatology. A score of zero to five denotes no or very mild depression symptoms, a score of six to ten denotes mild severity, a score of eleven to fifteen denotes moderate severity, and a score of sixteen or more denotes (very) extreme symptoms of depression.

Statistical analyses

In SPSS 19 for Windows, all statistical calculations were carried out. Assessing baseline features across the entire pattern has been done using descriptive techniques.

Results

Table 1 represents the population's average traits. Of the total pattern, 326 people indicated no psychopathology, and only slightly fewer people (314) reported remission of their depressive and/or anxiety disorders (with a mean of 1.71 depressive episodes). The least number of people (with a mean of 9.66 depressive episodes) had a current depressive illness, which was followed by a current anxiety condition. With an average of nearly 10 episodes of depression, the majority of respondents indicated a current co-occurring depressive and anxiety disorder. In the entire sample, 26.0% of people took antidepressants. 85 (5.9%) of the 1490 individuals made no mention of any pain symptoms. Most participants (92.2%) reported experiencing musculoskeletal pain, which was followed by gastrointestinal discomfort (358 participants), and cardio-respiratory discomfort (382 individuals).

Table 1. Baseline trait of total sample (N = 1490).

		N (%)	Mean
Demographics			
Female gender		989 (65.2)	
Age in years			41.9 (13.1)
married		1033 (67.0)	
Psychological pathology features			
No psychological pathology		326 (22)	
Remitted syndrome		314 (22.1)	
Current depressive disorder	Number of depressive episodes	198 (12)	1.73 (7.1)
Current anxiety syndrome		271 (16)	
Current depressive and anxiety syndrome		381 (256)	
# of depressive episodes			9.88 (73.4)
Severity of depression (QIDS)*	No	560 (38)	
	Slight	410 (25)	
	Partial	313(20)	
	Severe	187 (13)	
Severity of anxiety	Normal	738 (50)	
	Slight	378 (26)	
	Partial	247 (17)	
	Severe	109 (7.1)	
Other features			
Msk chronic problem		700(20)	
GIT chronic problem		400(10.9)	
Cardiopulmonary chronic problem		300 (26.4)	
Psychotic drugs use		392 (25.9)	
Use of other psychotropic drugs		350 (24)	

Table 2 indicates the features of the pain, divided into no psychopathology, remitted disorder, current depression, current anxiety disorder, and current depression and tension sickness. Most participants of the entire sample, as well as each of the groups mentioned, had low intensity and low pain-associated disability (CPG1), as well as pain that had a musculoskeletal origin. More individuals report particularly incapacitating and severely excluding pain, particularly when a depressive illness coexists with an anxiety illness (CPG4).

Table 2. Baseline ache trait divided by psychopathology.

		Total	None psychopathology	Remitted disorder	Current Depressive disorder	Current anxiety disorder	Current Anxiety and Depressive Disorder
		N= 1490	N= 326	N= 311	N= 200	N= 271	N=381
CPG*	Grade 0, N (%)	90 (5.8)	41 (12.7)	16 (5.4)	9(4.9)	11 (4.3)	7 (1.8)
	Grade 1, N (%)	817 (54.9)	220(67.7)	189(60.3)	97(49.1)	157(57.8)	153 (40.2)
	Grade 2, N (%)	302(20.1)	40 (12.3)	67 (21.2)	43 (21.9)	59(21.9)	93 (24.2)
	Grade 3, N (%)	155(10.2)	14 (4.2)	24 (7.9)	30(15.4)	26(9.8)	61(16.`)
	Grade 4, N (%)	129 (8.7)	9 (2.7)	16(5.1)	18 (9.1)	18 (6.2)	67 (17.9)
Pain location	No pain, N (%)	90(5.9)	41 (12.8)	16 (5.1)	9 (4.6)	11 (4.1)	7 (1.9)
	Musculoskeletal, N (%)	700(92.2)	276 (84.9)	293 (93.3)	187 (94.2)	253 (93.2)	367 (96.3)
	Gastro-intestinal, N (%)	400(48.0)	103 (31.9)	125 (39.6)	108(54.5)	139 (51.1)	240 (63.3)
	Cardio respiratory, N (%)	300(25.6)	33(11.6)	58(18.8)	50 (25.5)	78(28.9)	156 (41.3)

*CPG= Chronic pain grade

Discussion

Recent studies clarify the connection between pain, anxiety disorders, and depression (musculoskeletal, gastro-intestinal, and cardiorespiratory). Our findings demonstrate that pain is amplified by mood or anxiety disorders. The majority of the sample's participants reported experiencing musculoskeletal pain sensations, followed by gastro-intestinal discomfort and cardio-respiratory pain, respectively. In an analysis by (Celano & Huffman, 2011), cardio vascular disease was associated with depression and anxiety. Relation of stress inflammation and pain could be explain in Figure 2. Stress induced anxiety may increasing level of cytokines (Maes et al., 1998).

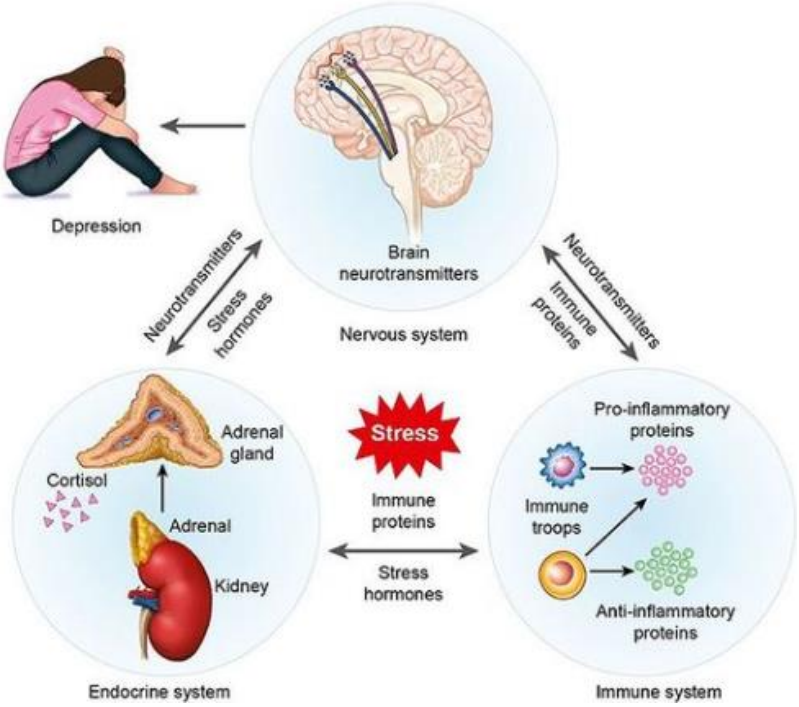

Figure 2. Relation of stress inflammation and pain (Phillips et.al., 2019).

And increased cytokines cause pain signs. Our research demonstrates a significant correlation between cardiac illness and depression and anxiety, whether present or in remission. Biochemical amines (neurotransmitters), neurochemical pathways, hormones, stressors, neurotropic variables, and pro-inflammatory cytokines are shared by depression and pain and have an impact on the development and management of these conditions. The final frequent way that chronic pain and depression can become long-term allies is when they emerge from similar underlying causes. Another very interesting issue is that we need to keep in mind the link between pain and suicide since those with both pain and depression are more likely to commit suicide. Proving that pain would undoubtedly be a frequent mediator or hazard element in both clinical scenarios (Fall et al., 2009; Robinson, Renshaw, Okello, Moller, & Davies, 2009; Beghi, Rosenbaum, Cerri, & Cornaggia, 2013; Ilgen et al., 2013; Phillips, Baldridge, Phillips, Baktir, & Fahimi, 2019).

Conclusion

This study reveals a similar and robust correlation between anxiety-related depression illnesses and the CPG (which includes pain-related disability and pain intensity). Cardio-respiratory discomfort has a substantial correlation with depression and anxiety as well, and this correlation persisted even after accounting for cardiovascular or respiratory disease. This intriguing finding, which calls for additional longitudinal research to examine a potential causal relationship between cardiac pain and a mental disorder (current or in remission with cardiac disease), is the strong association between depression/anxiety (current or in remission) and cardiorespiratory pain. Chronic pain and pain location has a clear correlation with depression and anxiety.

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