Original Article

The High Prevalence of Obsessive-Compulsive Disorder in Patients with Chronic Pain

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Objective: Chronic pain is a common disorder with a high prevalence of psychiatric disorder that imposes a worse prognosis on both conditions. Obsessive compulsive disorder (OCD) is estimated to be the fourth most prevalent life time psychiatric disorder, but yet has gained less attention in chronic pain comorbidity researches.
Methods: Ninety three heterogeneous chronic pain patients who attended a pain clinic in Tehran (Iran) in an outpatient setting during three months were included in this study. Diagnosis was made by Structured Clinical Interview for DSM-IV (SCID).
Results: The mean age of the patients was 46.37 (SD 15.005) years; of the patients, 66.7% were female and 33.3% were male. The mean duration of pain was 34.43 (SD 51.422) months. The mean pain severity on numerical pain scale was 5.82 (SD 1.950) from 10. The mean pain site number was 3.68 (SD 3.401) from the maximum of 27 places. Furthermore, 61.3% of the participants were diagnosed with lifetime OCD, 25.8% with subclinical OCD and 61.5 % with major depressive disorder (MDD). OCD diagnosis was not correlated with MDD or pain intensity. Female gender was associated with OCD (OD; 4.182, 95% CL (1.655-10.568)). Pain intensity was correlated with MDD ($P < 0.05$).Conclusions: The high prevalence of OCD was comorbidity, independent of MDD and most pain characteristics. The high prevalence of OCD may be explained by the high rate of undiagnosed cause of pain as well as cultural and local factors. Using screening tests is suggested for tackling under diagnosis and under treatment of OCD and MDD.

Keywords: *Chronic pain, Obsessive-Compulsive Disorder, Major Depressive Disorder.*

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Chronic pain prevalence of 10 to 42% in the general population makes it a common disorder, which imposes a great deal of disability and despair (1) (2). About 85% of chronic patients still suffer from pain after 12 years, and during this time have had a significantly higher mortality rate (3).

One of the most common definitions of chronic pain is from the International Association for the Study of Pain (IASP): "A pain longer than three months" (4). Many studies have been conducted on the comorbidity of chronic pain with psychiatric disorders, reporting up to 65% prevalence (5).

The most common and most studied disorder is major depressive disorder (MDD) that affects up to 50% of chronic pain patients in pain clinics or rehabilitation programs (5).

Many studies showed the reciprocal connection of psychiatric disorders like depression and anxiety with chronic pain such that the presence of one increases the prevalence of the other (1, 6-8). However, the onset of most anxiety disorders precedes the onset of chronic pain in contrast to MDD (9), and associations between several pain conditions and anxiety disorders were stronger than depression (10).

Among anxiety disorders, there has been greater focus on generalized anxiety disorder (GAD) (11) and post-traumatic stress disorder (PTSD) (12). Among other anxiety disorders, obsessive compulsive disorder (OCD) deserves special attention. OCD is estimated to be the fourth most prevalent life time psychiatric disorder (13); it is even more common in psychiatric clinics (up to 10%) (13). By considering the subclinical OCD that has at least the same prevalence of OCD, this percentage doubles. Both the OCD and subclinical OCD patients had impaired quality of life (14). OCD patients have selective attention to pain related stimulus (15).

In the Iranian general population survey, among 25180 individuals, based on DSM-IV criteria, OCD prevalence was 1.8% (0.7% males and 2.8% females) that is within the range of other countries (16). Within 3515 patients in an outpatient psychiatric clinic in Iran, 4.72% were diagnosed to have OCD, and the most common psychiatric comorbidity was MDD (44.57%) (17).

To the best of our knowledge, data on the prevalence of OCD in chronic pain are available as only a part of survey studies of all psychiatric disorders. The reported prevalence of OCD widely varies from 0.0% (18), 1.1% (19) and 2% (9) in two DSM-IV based studies to 2.2% (20) and 8% (21) in DSM-III-R studies. Moreover, there is no data on the prevalence of chronic pain in OCD. However, there is a case report on the possibility of correlation of OCD with facial chronic pain after plastic surgery (22) or possible union in strength between OCD and low back pain (23).

Therefore, because of the special characteristics of anxiety disorders and lack of data on the prevalence and possible effects of OCD in managing chronic pain, we studied the prevalence of OCD in chronic pain patients. Due to the precedent onset of OCD to the onset of chronic pain (9), OCD may be considered as an etiological factor in chronic pain.

Material and Methods

The attendees of pain clinic in outpatient setting during a three month period who agreed to participate in the study were screened for having chronic pain disorder for more than three months (4).

The protocol was approved by the Shahid Beheshti Medical University Ethics Committee, and the research followed the tenets of the Declaration of Helsinki. After providing sufficient information to the participants, written informed consent was obtained from all of them

Ninety three patients met the chronic pain criteria. They were interviewed based on DSM-IV using the Persian translation and cultural adaptation of Structured Clinical Interview for DSM-IV-TR (SCID-I) for lifetime OCD and current MDD criteria. SCID-I is a structured interview tool that was first created in 1992 for the diagnosis of axis-I psychiatric disorders, and different studies confirmed its reliability and validity (24, 25).

Most chronic pain patients complain of severe, persistent pain in one or more physical areas in their bodies in a way that it has sufficient severity to warrant clinical attention and significant impairment. Also, in most of the patients, psychological factors are related to the severity, exacerbation and maintenance of pain symptoms (26-27). Therefore, nearly all of chronic pain patients meet the criteria of pain somatoform disorder particularly when there is a psychiatric disorder it is usually impossible to determinate pain whether to be primary or secondary (5, 20). For this reason, we did not use this diagnostic category.

Numerical Pain Intensity Scale (0-10) is a common tool in pain studies for quantifying the severity of experienced pain and changes in pain intensity (28) (29).

Other collected variables were demographic data (age, gender and marital status), pain characteristics (mean pain intensity during the last 4 weeks, number of pain sites, pain duration, cause of pain and whether cause of pain is undiagnosed for specialist), OCD dominant symptom feature (obsessive or compulsive), using antidepressants, Gabapentin, using assistant tools for walking or needing assistant for personal activities. The patients were also asked if they had a history of psychiatric visit.

Definition of subclinical OCD diagnosis was made if the symptoms fulfilled the full criteria, except one criterion (number 3 or 4 of A criterion of obsession or number 5 and 6 of A criterion of compulsion or criterion B or C) for diagnosis based on DSM-IV-TR (26). Different definitions were used in previous studies. For example, the patient would fulfill all criteria except marked distress or one hour daily time consuming (both in criteria C) (30) or, beside obsession and compulsion, only one criterion from numbers 2-6 (criteria A) (14) or by excluding the attempts to ignore or suppress such thoughts/impulses (number 3 of criteria A) (31).

We used the MDD criteria of SCID (24) because MDD is the most common and most studied comorbidity in chronic pain and OCD.

Pain sites number was determined based on 9 major sites; each of which included three sites of right, middle and left with the possibility of having maximum 27 sites of pain in one patient. Also, it was possible for a single wide pain area in the back to be counted as three pain sites.

Lifetime OCD symptoms were reported in one of three categories: OCD diagnosis (DSM-IV full criteria), subclinical OCD (if only one criteria of DSM-IV was not met) and by merging these two into one category of OCD symptomatology (OCD plus subclinical OCD). Furthermore, each of the symptoms in OCD was reported independently in the obsessive or compulsive category.

Chi-square tests were performed to examine the associations between the categories of diagnosis and qualitative (including gender) and clinical variables such as using antidepressants, using Gabapentin, psychiatric visit, death wish and cause of pain (Yes, No variables).

Mann-Whitney's test was performed for numerical variables (age, numerical pain scale, age, pain site number and pain duration). All reported P-values were from two-sided tests; the p values of $<.05$ and 95% confidence intervals were used to denote statistical significance. Data were analyzed using SPSS for Windows (version 15.0).

Results

From March until May 2010, all patients attending the pain clinic who fulfilled the inclusion criteria of having chronic pain were asked to participate in this study. The mean age of the participants was 46.37 (SD 15.005, Min. 18, Max. 89) years, and the most prevalent age group was 50-59 (N = 29, 30.2%).

Of the participants, 31.2% (N = 29) were male and 68.8% (N = 64) were female; 40% of the patients were married, 14.6% single and 5.2% divorced.

The mean duration of pain was 34.43 (SD 51.422) (Median: 12, Max. 250) months; the mean pain severity on numerical pain scale was 5.82 (SD1.950) from 10; and the mean pain site number was 3.68 (SD 3.401).

The sample mean and standard deviation of age and pain characteristics in three categories are demonstrated in Table 1. The only significant association was between pain severity and MDD (Table 1).

In our sample, 61.3 % (N = 57) were diagnosed to have OCD, 25.8% (N=24) subclinical OCD and 61.5 % (N=59) MDD. However, only 22.9% (N=22) of the patients received antidepressant which was in low doses in most cases. Gabepentin was used by 19.8 % (N = 19) of the patients and 3 patients were using Sodium Valproate.

Among the chronic pain patients, 52.1% had compulsive features of OCD and 28.1% had obsessive features. Contamination obsessive thoughts and washing compulsion were the most common types of OCD (49.3%), followed by checking (36.6%) and ordering 10.4%. Moreover, 84.5% of the participants needed to use assistant tools and 36.6% needed help for personal self- care.

In 43.8 % (N = 42) of the cases, cause of pain was not certainly diagnosed and after 12 months, in a telephone follow up we found that only 10 patients had received a diagnosis by their physician. Most common causes of pain were disk disorders/herniation (21.9%), post-operative (10.4%), osteoarthritis 6.2%, trauma (3.1%), cancer (3.1%), neuropathic pain (2.1%) and other causes (11.5%).

Also, the correlation of categories of the diagnosis (OCD, subclinical OCD, OCD plus subclinical OCD), the obsessive feature of OCD and compulsive feature of OCD with the above mentioned variables were analyzed.

In Mann-Whitney's test, the number of pain sites had a meaningful correlation with obsessive feature (P = .05), but MDD diagnosis was correlated with pain severity (P =.012) (Table 3).

Female gender in Pearson's Chi-Square test was correlated with OCD (P =.002). The Odds Ratio for Female / Male was 4.182. Also, male gender was correlated with subclinical OCD (P = .021) with the odd ratio of 3.058 for Male / Female. We found no significant association between categorical diagnosis and age, intensity, duration of pain, marital status and MDD diagnosis with categories of diagnosis (Table 4).

In addition, antidepressant use, Gabapentin use, having a death wish, visiting a psychiatrist, OCD family history, cause of pain, pain site and whether to have known cause or unknown cause of pain had no correlations with categories of diagnosis. Death wish was reported by 55.9% of the patients, which was described to be most prominent during the peak of pain intensity and was strongly associated with MDD diagnosis (P = .000). Sleep problem was reported by 60.2% of the patients.

Discussion

In our study, there was a very high prevalence of lifetime OCD (61.3 %) comparing to none (0.0%) (18) to highest of 8.2% (21) in previous studies. Many factors may contribute to this prevalence.

Also, there are reports of similarity between chronic pain conditions in the developed and developing countries (32). There are cultural and local influencing factors like disorder presentation, lack of formal referral pathway and psychiatric comorbidity underdiagnosis.

Still controversial, culturally different presentation of psychiatric disorder should be considered. For example, in Turkey, depressed patients who solely complain from somatic symptoms, could reach 95% of all patients and up to 26% of the patients are in denial about their psychological symptoms (33). This would be interpreted in line with evidences that support the notion of pain to be a 'depressive equivalent' such as high family history of depression and depressive spectrum disorders in chronic pain patients (34) and pain prevalence of 59.1% in depressed patients (35). This could also be applied to anxiety disorders like OCD, but it needs to be investigated.

For many reasons, and most importantly, due to the lack of formal referral pathway for pain and almost complete separate management of chronic pain patients from the psychology and psychiatry modalities, the prevalence of undiagnosed psychiatric comorbidity may be higher. This was evident by the fact that despite the fact that this study was done in a multidisciplinary pain clinic with a psychiatrist available in the team, only 45.6% of all of the OCD patients received antidepressants but in low doses which most likely targeted the pain, not MDD or OCD. Therefore, using antidepressant was not correlated with OCD or MDD diagnosis. It was also expected that the time span from the first pain sensation until coming to a specialized pain center, which is 12 years on average in the developed countries (36) to be longer in Iran. However, the mean duration of pain at the time of our study was 34.43 months (SD 51.422) (Median: 12).

Nevertheless, there is a report of less OCD prevalence in tertiary referral setting in heterogeneous groups of chronic pain patients (9). In contrast to previous studies, this may contribute to a high prevalence of undiagnosed cause of pain (44.1%), 76.2 % of which remain unknown after a one year telephone follow up

(32). The most frequent reason for patients and clinicians for referral to pain clinic was lack of clarity in cause of pain. Undiagnosed cause of pain could be due to a general mismanagement and referral pathway for chronic patients in Iran, but due to the lack of prevalence study on the cause of pain in the general population of Iran, this also remains unknown. Unknown cause of pain was not correlated with OCD, OCD plus subclinical OCD or MDD diagnosis. Thus, by not confirming the cause of pain, we could not differentiate between psychological versus biologic pain.

Summing up, the high prevalence of psychiatric disorders, particularly MDD would be expected (61.5%), which is even higher than previous reports in pain clinics or rehabilitation programs (50%) (5). However, attributing the same reasoning to OCD needs to be investigated.

Overdiagnosis could also be considered which may contribute to the inclusion of subclinical OCD. However, subclinical OCD prevalence was considered separately in our study (25.8%), which had even a different gender correlation (male) than OCD itself.

The high prevalence of OCD symptoms has been reported previously. In a general population study, in 1037 individuals in New Zealand, it was reported that 21-23% of the general population (13%-17% of healthy population) have endorsed obsession-compulsion as defined in DSM-IV, but only 2-3% met the full criteria (37). Overdiagnosis of OCD by the lay interviewers compared to the experienced personnel (3.1% dropped to 0.6%) was postulated to be due to labeling of worries or concerns as obsessions and overestimating the degree of functional impairment or distress attributable to obsessive-compulsive symptoms (30). Although, in our study, most patients were diagnosed to have compulsive feature of OCD and the interviews were done by a psychologist, estimation of functional impairment or distress was difficult because of comorbid pain disorder.

Some characteristics of patients in our study were different from previous studies including the significant gender difference between OCD and subclinical OCD, and this needs to be more investigated. Also, each of OCD and subclinical OCD has features, suggesting that they have a different entity from one another like age of onset, duration and course of symptoms and gender ratio (14). It may be due to the cultural tendency of males to council psychological symptoms that leads to false diagnosed of subclinical form.

The high prevalence of OCD independent of MDD and pain characteristics (intensity, duration and site of pain, with exception of pain site number that is associated with obsessive feature in chronic pain) suggests different patterns of association comparing to MDD. Since the onset of anxiety disorders (100% for OCD and 77% for all anxiety disorders) preceded the onset of pain (9), OCD may be considered a risk factor for chronicity or multiplicity of pain sites.

Compatible with previous studies, pain severity in the present study was associated with MDD. However, in spite of finding no correlation in our study, the number of pain conditions in previous studies was a better predictor of major depression than pain measures such as pain severity (38). This difference could be explained by different definitions of widespread pain in these studies that "was having at least three regions representing both upper and lower halves of the body" (3).

Conclusion

The high prevalence of OCD in our study suggests underdiagnosis in current management of chronic patients in Iran's pain clinics with special attention in undiagnosed cause of pain. GAD has been the focus of recent researches in the field of reciprocal relation of anxiety disorders and chronic pain.(11) This study brought attention to other somehow different member of anxiety disorders (OCD). Due to the heterogeneity of the patients (mostly in the cause of pain and high rate of undiagnosed cause of pain) and small sample size, the conclusion is limited only to the referral settings of chronic pain to tell that there are more prominent symptoms of OCD.

Due to underdiagnosis, screening questions for OCD, besides the MDD, are useful especially in pain clinics for proper treatment and referral. We propose using more structured tools for diagnosing and measuring the severity of obsessive-compulsive symptoms in future studies with special groups of chronic pain based on causation and also comparing it to non-referral chronic pain patients who may have less OCD features. It is left to future studies to show an etiologic correlation between OCD and chronic pain or obsession about pain as a contributing factor,

Table 1: Sample Characteristics of Categorical variables based on Diagnosis (Mean and Standard Deviation)

	Total	Within OCD	Within Subclinical OCD	Within MDD
Age	46.37(15.005)	47.28(16.403)	44.58(11.662)	47.46(14.018)
Pain site number	3.68(3.401)	3.63(3.638)	3.37(1.715)	4.02(4.041)
Pain duration	34.43(51.422)	37.32(55.28)	30.62(47.854)	37.69(52.659)
Pain intensity	5.82(1.950)	5.67(1.845)	6.08(1.866)	6.20(1.910)*

*All associations were insignificant except for pain severity and MDD ($P < 0.05$).

Table 2: Sample Characteristics of Clinical Variables (Frequency and Percentages)

	Total	Within OCD	Within subclinical OCD	Within MDD
Gender (female)	64(68.8%)	46(80.7%)*	12(50.0%) **	44(74.6%)
History of psychiatric visit	31(34.8%)	16(29.6%)	16(29.6%)	23(41.1%)
Using antidepressant	22(26.5%)	11(21.6%)	9(40.9%)	16(30.76%)
Undiagnosed cause of pain	41(44.1%)	26(45.6%)	11(26.8%)	27(45.8%)
Death wish	52(55.9%)	33(57.9%)	13(54.2%)	42(71.2%) ***
Using Gabapentin	19(22.8%)	9(17.6%)	8(36.4%)	12(23.1%)

*All associations were insignificant except * P<.01, **P < .05 and ***P < .000.

Table 3: Association between Diagnosis and some Categorical Variables by Odds Ratio (OR) and 95% of Confidence Interval (95% CI)

Categorical variables	Obsessive compulsive disorder OR (95% CI)	Subclinical obsessive compulsive disorder OR (95% CI)	Major depressive disorder OR (95% CI)
Gender (female)	4.182 (1.655-10.568)*	.327(.124-.862)*	2.053(0.835-5.050)
Using antidepressant	.525(.195-1.411)	2.556(.896-7.289)	1.852(0.636-5.388)
Using Gabapentin	.471(.167-1.331)	2.597(.876-7.699)	1.029(0.356-2.971)
Having death wish	1.230(.531-2.848)	.909(.357-2.312)	5.929(2.344-15.002)*
Psychiatrist visit	.561(.231-1.365)	1.497(0.571-3.923)	2.178(0.836-5.676)
Useless multiple visits	.670(.283-1.582)	1.889(0.722-4.939)	1.185(0.500-2.811)
Undiagnosed cause of pain	.852(.367-1.979)	.909(.357-2.312)	0.830(0.353-1.948)

*Significant association.

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