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The Association Between Chronic Back Pain and Psychiatric Disorders; Results from a Longitudinal Population-Based Study

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1. Introduction

Chronic back pain is a common pain condition; it results in significant personal, social and occupational impairment, role disability and health care utilization.[30, 34, 9, 32, 24]
Epidemiologic studies have found that chronic back pain is comorbid with psychiatric disorders, other chronic pain conditions (migraine, arthritis, headache) and chronic psychical conditions.[26, 15, 30, 5, 13] Most of the published studies regarding the assocation between chronic back pain and psychiatric disorders focus on the association with major depression.[30, 5, 21, 22, 4] It is found that the prevalence of major depression among persons with chronic pain is about 2-3 times higher than among pain-free individuals.[18] A study conducted by Von Korff et al. (2005) showed that chronic back pain is also significantly associated with mood, anxiety (except agoraphobia without panic) and alcohol abuse and dependence disorders.[30] A recent international study conducted by Tsang et al. (2008) found that various chronic pain conditions (headache, back or neck pain, arthritis or joint pain) are associated with depression-anxiety spectrum disorders both in developed and developing countries.[29]
Although an association between chronic back pain and psychiatric disorders has been repeatedly demonstrated, little is known about the temporal relationship between the two, as most studies are based on clinical samples and cross-sectional data.[6] Fishbain et al. (1997) analysed 40 studies addressing the temporal relationship between generic pain and major depression. However, no firm conclusions could be drawn as most of these studies differed in study design, methods and definition to identify depression.[11] Fishbain et al. (1997) stated that more support was found for the hypothesis that pain precedes depression, although some of the selected studies found depression to be a predictor of first onset pain.[22, 31, 4, 16, 3, 20] The aims of the present study are:

1. To assess cross-sectionally the association between chronic back pain and various mood, anxiety and substance use disorders;
2. To assess longitudinally the temporal relationship between chronic back pain and psychiatric disorders.

2. Material and methods

Sampling procedure

Data from NEMESIS were used. NEMESIS (see[2], for a detailed description of the objectives of this study) is a population-based study with repeated measurements among the same subjects in 1996 (T_0), 1997 (T_1) and 1999 (T_2). A stratified, random sampling procedure was utilized. First, a sample was drawn from 90 Dutch municipalities, stratified by urbanicity and sufficiently distributed over the 12 provinces of the Netherlands. Post office registers were used to draw a sample of private households (addresses). The number of households selected in each municipality was in proportion to its population. One respondent in each household was selected randomly, according to whose birthday was most recent, on the condition that he or she was between 18 and 65 years of age and sufficiently fluent in Dutch. To maximize the response and to compensate for any seasonal influences, the initial data collection phase was spread over the entire period from February to December, 1996. At baseline, a total of 7076 people (response rate of 69.7%) were interviewed. Informed consent was obtained for the interview. All participants in the baseline interview (T0) were approached for the follow-up waves, one year (T1) and three years (T2) after T0. Of the 7076 participants at baseline, 5618 subjects (response 79.4%) were available for re-interview at T_1 and 4796 subjects (response of T_1 subjects: 85.4%) at T_2. The ethics committee of the Netherlands Institute of Mental Health and Addiction approved these procedures. The subjects well reflected the Dutch population in terms of gender, civil status and degree of urbanization.[14] Only the 18-24 age group was underrepresented.

Loss of subjects in the second or subsequent waves of longitudinal data collection can be selective. Therefore, it was examined whether nonresponders at T_1 and T_2 differed from responders at T_1 and T_2 on the presence of psychiatric disorders or chronic back pain at T_0. After adjustment for demographic variables, a 12-month chronic back pain at T_0 did not increase the probability of loss to follow-up between T_0 and T_1 nor between T_0 and T_2 (OR= 1.00, CI= 0.81-1.22; OR= 1.09, CI= 0.91-1.30). After adjustment for demographic variables, any 12-month psychiatric disorder at T_0 only slightly increased the probability of loss to follow-up between T_0 and T_1 as well as between T_0 and T_2 (OR=1.20, CI=1.04-1.38; OR=1.29, CI=1.15-1.46)[14]

Instruments

Psychiatric disorders

The Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R) Axis I psychiatric disorders were diagnosed with the computerised version of the Composite International Diagnostic Interview (CIDI version 1.1;[27]). The CIDI is a structured interview, developed by the World Health Organization, based on the Diagnostic Interview Schedule (DIS) and the Present State Examination (PSE), and administered by trained interviewers. The CIDI has good test-retest reliability[35] and validity[10] for all psychiatric disorders examined in NEMESIS. The following classes and seperate diagnoses of psychiatric disorders were measured: mood disorders (major depression, dysthymia, bipolar disorder); anxiety disorders (obsessive compulsive disorder, generalized anxiety disorder, simple phobia, social phobia, agoraphobia, and panic disorder); substance use disorders (alcohol abuse, alcohol dependency, drug abuse, drug dependency).

Chronic back pain and other somatic illnesses

Chronic back pain and other somatic illnesses were assessed at two waves (T_0 and T_2) by means of a questionnaire listing 31 chronic somatic conditions divided over different somatic classes, in line with the classification used in the National Comorbidity Survey Replication (NCS-R)[30]: asthma, chronic pain conditions (arthritis, migraine, chronic back pain), cardiovascular disease (high blood pressure, heart attack, stroke), digestive disease (stomach ulcer, intestinal/abdominal disorders, gallbladder, liver disease, cirrhosis), sensory impairment, diabetes, chronic cystitis (kidney punch, kidney disease, chronic bladder infection), thyroid gland diseases, other (sinusitis, epilepsy, dizziness, skin disease, cancer, multiple sclerosis, Parkinson's disease, myalgic encephalomyelitis, severe injury, HIV/AIDS).

Self-report was used to ascertain chronic back pain (and other physical illnesses). Subjects were asked whether they had chronic back pain in the prior 12 months (at T_0) or 24 months (at T_2), lasting longer than three months. Different studies indicate that self-report on the presence of chronic diseases have a moderate to high agreement with medical records.[25, 19, 17]

Sociodemographic variables

The following sociodemographic variabes were measured at T_0: gender; age (18-24, 25-34, 35-44, 45-54, 55-64); highest completed level of education (primary vocational, lower vocational, secondary-middle vocational, higher vocational, academic); living conditions (living with partner with or without children, parent living alone, living alone, living with parents, living with other people); urbanicity (very low, low, average, high, very high); employment status (employed, housewife or houseman, student, unemployed, disabled, retired, other).

Statistical analyses

To assess cross-sectional comorbidity between chronic back pain and 12-month psychiatric disorders (research question 1), logistic regression analysis was used generating odds ratios (ORs) and 95% confidence intervals (CI). Data were used of the first wave (T_0; n=7076).

To examine whether having chronic back pain increases the risk of developing a psychiatric disorder (research question 2), 3-year incidence figures of psychiatric disorders were calculated. For this analysis, subjects were selected without lifetime psychiatric disorder at T_0. Again, logistic regression analysis was used to calculate the association between chronic back pain and later onset of psychiatric disorders.

To examine whether having a psychiatric disorder elevates the risk of developing chronic back pain (research question 2), 2-year incidence figures of chronic back pain were calculated at T_2. At T_1, no somatic illnesses (including chronic back pain) were assessed. Therefore, only 2-year incidence figures could be calculated (at T_2 subjects were asked whether they experienced chronic back pain that lasted longer than three months in the preceding 24 months). For this analysis, subjects without diagnosis of chronic back pain at baseline (T_0) were selected. Again, logistic regression analysis was performed to calculate the association between classes of psychiatric disorders (mood disorders, anxiety disorders and substance use disorders) and later onset of chronic back pain. The sample sizes were too small to study the association between individual psychiatric disorders and later onset of chronic back pain.

Adjustment of statistical analyses was necessary as chronic back pain is associated with various socio-demographic factors and other somatic illnesses, such as arthritis, migraine, cardiovascular diseases.[26,15,30,5,13] In the first step, all analyses were adjusted for sociodemographic variables (age, gender and education; Model 1); in the second step

additionally for employment status, living conditions and the dichotomous (yes/no) variable 'any other somatic illness than chronic back pain' (Model 2), ruling out that any relationship found between chronic back pain and psychiatric disorders was mediated by any of the somatic illnesses listed above in the paragraph 'chronic back pain and other somatic illnesses'. Significance was set at the two-sided 0.05 level. All calculations were performed using STATA 8.0 statistical software.[28] The appropriate statistical weight was employed in all analyses to ensure the data were representative of the national population. Weighted data can cause problems in estimating variances, standard errors and corresponding tests and confidence intervals. Therefore, STATA[28] was applied, using the Taylor series linearization method.

3. Results

Sociodemographic variables

The 12-month prevalence estimate of chronic back pain was 8.2%. More women than men had chronic back pain (9.4% were female and 7.1% male; $p < 0.001$). The rate of chronic back pain increased with age. Lower educational level, parent living alone and being unemployed were also related to higher prevalence estimates of chronic back pain.

		Chronic back pain (n=631) %	p-value
Gender	Male	7.1	<0.001
	Female	9.4	
Age	18-24	3.6	<0.001
	25-34	4.9	
	35-44	8.7	
	45-54	10.8	
	55-64	14.2	
Educational level	Primary, basic vocational	16.9	<0.001
	Lower secondary	10.4	
	Higher secondary	6.9	
	Higer professional, university	4.8	
Urbanicity	Very low	7.7	
	Low	8.2	
	Average	8.8	
	High	8.1	
	Very high	8.3	
Living conditions	Living with partner	9.0	<0.001
	Parent living alone	10.4	
	Living alone	7.5	
	Living with parents	2.9	
	Living with other people	6.9	
Employment	Employed	6.3	<0.001
	Housewife/man	12.9	
	Student	2.2	
	Unemployed/ disablement	17.6	
	Retired/other	12.6	

Table 1. Sociodemographic variables of Dutch adults with chronic back pain (n=7076)

Chronic back pain and comorbid psychiatric disorders

Comorbidity between chronic back pain and psychiatric disorders was first assessed cross-sectionally. Chronic back pain and any psychiatric disorder appeared to be significantly associated, as shown by the adjusted odds in both models (Table 2).

Psychiatric disorder	Chronic back pain (n=631)	No chronic back pain (n=6445)	Model 1 [I]		Model 2 [II]	
	%	%	OR	95% CI	OR	95% CI
Mood disorder	11.8	7.3	1.64***	1.25-2.14	1.42*	1.08-1.88
Anxiety disorder	19.5	11.8	1.69***	1.34-2.12	1.52**	1.20-1.92
Substance use disorder	8.5	8.9	1.56*	1.07-2.28	1.53*	1.05-2.23
Any psychiatric disorder	29.7	22.7	1.59***	1.31-1.94	1.44***	1.18-1.75
Two or more psychiatric disorders	12.6	7.3	1.82***	1.37-2.41	1.58**	1.18-2.12

I Adjusted for age, gender and educational level.
II Adjusted for age, gender, educational level, urbanicity, household composition, employment status, any other somatic illness than chronic back pain (see paragraph 'chronic back pain and other somatic illnesses' for detailed description).
* p<0.05; ** p<0.01; *** p< 0.001

Table 2. Association between chronic back pain and psychiatric disorders in the Dutch adult population (12-month prevalence estimates, Odds ratios and 95% confidence intervals)

Looking at the classes of psychiatric disorders, the adjusted odds for mood disorder, anxiety disorder and substance use disorder were also significant in both models. Additional analyses (not in table) demonstrated that for the following individual psychiatric disorders in both models the association was significant: obsessive compulsive disorder (Model 2: OR=3.62; CI=1.51-8.69), generalised anxiety (Model 2: OR=3.13; CI=1.71-5.74), simple phobia (Model 2: OR=1.38;CI=1.03-1.84 in model 2), dysthymia (Model 2: OR=1.85;CI=1.23-2.79) and alcohol abuse (Model 2: OR=1.92; CI=1.11-3.32).

Temporal relationship

The temporal relationship between chronic back pain and psychiatric disorders was assessed longitudinally. Results showed that subjects with chronic back pain had an elevated risk of developing any psychiatric disorder in both models (Table 3). In both models it was found that the risk of developing a mood or anxiety disorder was significantly higher among subjects with chronic back pain. Additional analyses (not in table) showed that for the individual psychiatric disorders in both models the risk was significant for obsessive compulsive disorder (Model 2: OR=3.36; CI=1.05-10.7), major depression (Model 2: OR=2.49; CI=1.73-3.59) and simple phobia (Model 2: OR=1.88; CI=1.20-2.94).

			Odds ratio's and 95% confidence interval			
	Chronic back pain %	No chronic back pain %	Model 1 I		Model 2 II	
			OR	95% CI	OR	95% CI
Mood disorder III	11.4	5.1	2.14***	1.63-3.57	2.37***	1.60-3.52
Anxiety disorder	9.8	5.3	1.80**	1.17-2.79	1.74*	1.13-2.67
Substance use disorder	3.3	3.9	1.23	0.62-2.41	1.20	0.60-2.41
Any psychiatric disorder	20.0	10.7	2.28***	1.57-3.32	2.25***	1.54-3.28

I Adjusted for age, gender and educational level.
II Adjusted for age, gender, educational level, urbanicity, household composition, employment status, any other somatic illness than chronic back pain (see paragraph 'chronic back pain and other somatic illnesses' for description).
III The incidence rate for a diagnostic grouping involves the first onset of any disorder from that grouping in subjects who had never had any disorder in that grouping before the first assessement. The incidence rate for the separate disorders involves the first onset of that disorder irrespective of whether the subjects in question had ever had any other disorder from the same grouping. This explains why the rates for some groupings come out lower than the rates for some of the separate disorders within them.
* p<0.05; ** p<0.01; *** p< 0.001

Table 3. Three-years incidence of psychiatric disorders among Dutch adults with and without chronic back pain

To examine whether having a psychiatric disorder elevates the risk of developing chronic back pain, 2-year incidence figures were calculated among subjects with and without psychiatric disorders. Results showed that the risk of developing chronic back pain was significantly higher among subjects with an anxiety disorder in both models (Table 4).

		Odds ratio's and 95% confidence interval			
	Chronic back pain %	Model 1 I		Model 2 II	
		OR	95% CI	OR	95% CI
No mood disorder	5.3	1		1	
Mood disorder	6.0	1.13	0.62-2.05	1.16	0.64-2.13
No anxiety disorder	5.0	1		1	
Anxiety disorder	7.9	1.62*	1.02-2.59	**1.65***	1.03-2.64
No Substance use disorder	5.3	1		1	
Substance use disorder	5.1	1.09	0.57-2.05	1.17	0.61-2.21
No psychiatric disorder	5.0	1		1	
Any psychiatric disorder	6.6	1.39	0.96-2.02	1.43	0.98-2.08

I Adjusted for age, gender and educational level.
II Adjusted for age, gender, educational level, urbanicity, household composition, employment status, any other somatic illness than chronic back pain (see paragraph 'chronic back pain and other somatic illnesses' for description).
* p<0.05; ** p<0.01; *** p< 0.001

Table 4. Two-years incidence of chronic back pain among Dutch adults with and without a 12-month psychiatric disorder.

4. Discussion

This article provides the first longitudinal population-based assessment of the temporal relationship between chronic back pain and mood, anxiety and substance use disorders. The study also adds to current knowledge on cross-sectional associations between chronic back pain and psychiatric disorders.

The key findings of this study are that persons with chronic back pain are more likely to have mood, anxiety and alcohol abuse disorder. These results add to the growing body of knowledge that chronic back pain is associated not only with depression but also with anxiety and alcohol abuse disorder.[30, 7]

Secondly, regarding the temporal relationship this study provides empirical support for both the consequence (chronic back pain precedes the development of psychiatric disorders) and the antecedent hypothesis (anxiety disorders precede the development of chronic back pain). Regarding the consequence hypothesis, it was found that pre-existing chronic back pain not only elevates the risk of developing a mood disorder (major depression[6, 5, 11]), but also of other psychiatric disorders, such as obsessive-compulsive disorder and simple phobia. Regarding the antecedent hypothesis, it was found that anxiety disorders predict new onset chronic back pain.

In interpreting these results, first several strengths and limitations of this study need to be considered. The present study has important advantages over other studies. Until recently, research in this field focused exclusively on the association between chronic back pain and depression. Our study has a much broader scope, by focusing on mood disorders, anxiety disorders and substance use disorders. In addition, a valid and reliable instrument (CIDI) was used measuring DSM-III-R Axis I psychiatric disorders. Also a limitation of this study needs to be considered: the ascertainment of chronic back pain on self-report. It was not feasible to abstract medical records or to conduct a medical assessement to determine whether chronic back pain was present or absent. As noted earlier, results indicate that self-report has a moderate to high agreement with medical records on the presence of chronic diseases.[25, 19, 17] Another limitation is that no information on pain severity and duration of the chronic back pain was collected. Consequently, exceeding the scope of this study is the estimation of duration and pain severity-specific curves for subjects with chronic back pain in relation to psychiatric disorder onset rates.

This study provides empirical support for both the consequence and the antecedent hypothesis. It remains unclear, however, which causal mechanisms underly the temporal relationship between the two. Various explanations may be put forward for the antecedent hypothesis; having an anxiety disorder may lead to physical symptoms such as pain due to increased physiological arousal.[16] In addition, people with anxiety disorders may be more likely to somatize their psychological symptoms, with somatization being the mediating variable, as a way of expressing their general distress by reporting pain.[7] Regarding the consequence hypothesis, it has been assumed that chronic pain of any type rather than chronic back pain specifically may be a generic risk factor in the development of psychiatric disorders.[6] In this study, however, all statistical analyses were adjusted for two other chronic pain conditions than chronic back pain: arthritis and migraine. After this adjustment, the temporal relationship between chronic back pain and psychiatric disorders remained significant, in the sense that pre-existing chronic back pain precedes the development of psychiatric disorders. It therefore does not seem plausible to assume that chronic pain of any type would serve as a mediating variable underlying the temporal

relationship between chronic back pain and psychiatric disorders. A third hypothesis can be put forward presuming that chronic back pain and certain psychiatric disorders share the same pathogenesis; prior research has for example identified neurochemical links between depression and chronic pain in the sense that both serotonin and norepinephrine appear to play a role in the pathogenesis of both chronic pain and depression.[11,6] A fourth hypothesis to be tested is whether chronic back pain and certain psychiatric disorders may share a common risk factor, such as psychological stress. Contemporary models portray low back pain as a sensory-affective response, involving physiological, cognitive, and behavioral components.[34] More research is needed to explore the relationship between chronic back pain/generic pain and psychiatric disorders in depth, by adressing the causal mechanisms that may be involved. It needs for example to be examined whether allevation of pain helps to ameliorate psychiatric symptoms and likewise whether relief of psychiatric symptoms improves pain.[1]

Our findings are important to care providers treating patients with chronic back pain and to clinical care givers treating people with anxiety disorders. As the combination of depression and pain is associated with worse outcomes than either condition alone, it is important to recognize psychiatric disorders in clinical and primary care settings.[1] Care providers should be aware of the co-occurrence of chronic back pain and psychiatric disorders, of the elevated risk patients with chronic back pain have of developing mood and anxiety disorders and of the elevated risk people with anxiety disorders have to develop chronic back pain. Dual treatment of both chronic back pain and psychiatric disorders is needed to improve pain outcomes. Currently, there is a lack of recommendations for valid screening scales for psychiatric disorders and psychiatric treatments appropriate for people with chronic pain conditions. This study underscores the necessity that valid screening tools for psychiatric disorders should to be made available and that guidelines should be developed to inform caretakers how to treat patients with chronic back pain and psychiatric disorders.

5. Acknowledgements

The NEMESIS study was supported by the Ministry of Health Welfare and Sports of the Netherlands.

6. References

[1] Bair MJ, Robinson RL, Katon W, Kroenke K. Depression and pain comorbidity: a literature review. Arch Intern Med 163:2433-45, 2003.

[2] Bijl RV, Ravelli A, Van Zessen G. Prevalence of psychiatric disorder in the general population: results of The Netherlands Mental Health Survey and Incidence Study (NEMESIS). Soc Psychiatry Psychiatr Epidemiol 33:587–95, 1998.

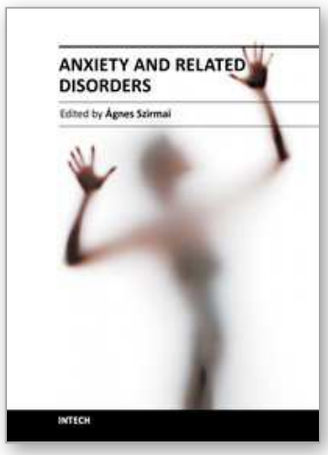
[3] Carroll LJ, Cassidy JD, Coté P. Depression as a risk factor for onset of an episode of troublesome neck and low back pain. Pain 107:134-139, 2004.

[4] Croft PR, Papageorgiou AC, Ferry S, Thomas E, Jayson MI, Silman AJ (1995). Psychologic distress and low back pain. Evidence from a prospective study in the general population. Spine 20:2731-7, 1995.

[5] Currie SR, Wang J. Chronic back pain and major depression in the general Canadian population. Pain 107:54-60, 2004.

[6] Currie SR, Wang J. More data on major depression as an antecedent risk factor for first onset of chronic back pain. Psychological Medicine 35:1275-1282, 2005.
[7] Dersh J, Polatin PB, Gatchel RJ. Chronic pain and psychopathology: research findings and theoretical considerations. Psychosomatic Medicine 64:773-786, 2002.
[8] Deyo RA, Rainville J, Kent DL. What can the history and physical examination tell us about low back pain? JAMA 268:760-765, 1992.
[9] Engels CC, Von Korff M, Katon WJ. Back pain in primary care: predictors of high health-care costs. Pain 65:197-204, 1996.
[10] Farmer AE, Jenkins PL, Katz R, Ryder L. Comparison of CATEGO-derived ICD-8 and DSM-III classifications using the CIDI in severely ill subjects. Brit J Psychiatr 158:177–182, 1990.
[11] Fishbain DA, Cutler R, Rosomoff HL, Rosomoff RS. Chronic pain-associated depression: antecedent or consequence of chronic pain? A Review. The Clinical Journal of Pain 13: 116-137, 1997.
[12] Frymoyer JW. Quality: An international challenge to the diagnosis and treatment of the disorders of the lumbar spine. Spine 18:2147-2152, 1993.
[13] Gureje O, Von Korff M, Simon GE, Gater R. Persistent pain and well being: a World Health Organization Study in primary care. J Am Med Assoc 280:147-151, 1998.
[14] Graaf R de, Bijl RV, Smit F, Ravelli A, Vollebergh WAM. Psychiatric and sociodemographic predictors of attrition in a longitudinal study: the Netherlands Mental Health Survey and Incidence Study (NEMESIS). Am J Epidemiol 152:1039-47, 2000.
[15] Hestbaek L. Leboef-Yde C, Manniche C. Is low back pain part of a general health pattern or is it a seperate and distinct entity? A critical review of comorbidity with low back pain. Journal Manipul Physiol Ther 26:243-252, 2003.
[16] Hotopf M, Mayou R, Wadsworth M, Wessely S. Temporal relationships between physical symptoms and psychiatric disorder. British Journal of Psychiatry 173: 255-261, 1998.
[17] Kehoe R, Wu S-Y, Leske MC, Chylack LT. Comparing self-report and physician reported medical history. American Journal of Epidemiology 139:813-818, 1994.
[18] Kessler RC, Ormel J, Demler O, Stang PE. Comorbid mental disorders account for the role impairment of commonly occurring chronic physical disorders: results from the National Comorbidity Survey. Journal of Occupational and Environmental Medicine 45: 1257-1266, 2003.
[19] Kriegsman DM, Penninx BW, Van Eijk JT, Boeke AJ, Deeg DJ. Self-reports and general practitioner information on the presence of chronic diseases in community dwelling elderly. Journal of Clinical Epidemiology 49:1407-1417, 1996.
[20] Larson SL, Clark MR, Eaton WW. Depressive disorder as a long-term antecedent risk factor for incident back pain: a 13-year follow-up study from the Baltimore Epidemiological Catchment Area Sample. Psychological Medicine 34: 211-219, 2004.
[21] Magni G, Caldeiron C, Rigatt-Luchini S, Merksey H. Chronic musculoskeletal pain and depressive symptoms in the general population. An analysis of the 1st National Health and Nutrition Examination Survey Data. Pain 43: 299-307, 1990.

[22] Magni G, Marchetti M, Moreschi C, Merksey H, Luchini SR. Chronic musculoskeletal pain and depressive symptoms in the National Health and Nutrition Examination. I. Epidemiologic follow-up study. Pain 53: 163-8, 1993.
[23] McDowell I, Newell C. Measuring Health: A guide to rating scales and questionnaires (2nd ed., rev.). New York: Oxford University Press, 1996.
[24] Nachemson AL. Newest knowlegde of low back pain. A critical look. Clin Orthop 279: 8-20, 1992.
[25] NCHS. Evaluation of National Health Interview Survey diagnostic reporting. Vital and Health Statistics 2:120:1-116, 1992.
[26] Raspe A, Matthis C, Heon-Klin V, Raspe H. Chronic back pain: more than pain in the back. Findings of a regional survey among insurees of a workers pension insurance fund. Rehabilitation 42:195-203, 2003.
[27] Smeets RMW, Dingemans PMAJ. Composite International Diagnostic Interview (CIDI), version 1.1. WHO: Amsterdam, 1993.
[28] StataCorp. Stata Statistical Software, release 7.0. College Station, TX: Stata Corporation, 2001.
[29] Tsang A, Von Korff M, Lee S, Alonso J, Karam E, Angermeyer MC, Borges GL, Bromet EJ, De Girolamo G, Graaf R de, Gureje O, Lepine JP, Haro JM, Levinson D, Oakley Browne MA, Posada-Villa J, Seedat S, Watanabe M. Common chronic pain conditions in developed and developing countries: gender and age differences and comorbidity with depression-anxiety disorders. Journal of Pain 9: 883-891, 2008.
[30] Von Korff M, Crane P, Lane M., Miglioretti DL, Simon G, Saunders K, Stang P, Brandenbrug N, Kessler R. Chronic spinal pain and physical-mental comorbidity in the United States: results from the National Comorbidity Survey Replication. Pain 2005; 113:331-339.
[31] Von Korff M, Le Resche L, Dworkin SF. First onset of common pain symptoms: a prospective study of depression as a risk factor. Pain 55:251-258, 1993.
[32] Von Korff M., Ormel J, Keefe F, Dworkin SF (1992). Grading the severity of chronic pain. Pain 50:133-149, 1992.
[33] Ware JE, Sherbourne CD. The MOS 36-item Short Form Health Survey (SF-36): I. Conceptual framework and item selection. Medical Care 30:473-483, 1992.
[34] Vowles KE, Zvolensky MJ, Gross RT, Sperry JA. Pain-Related Anxiety in the Prediction of Chronic Low-Back Pain Distress. Journal of Behavioural Medicine 72:77- 89, 2004.
[35] Wittchen H. Reliability and validity studies of the WHO-Composite International Diagnostic Interview (CIDI): a critical review. J Psychiatr Res 28:57–84 24, 1994.



Anxiety and Related Disorders

Edited by Dr. Ãgnes Szirmai

ISBN 978-953-307-254-8
Hard cover, 292 pages
Publisher InTech
Published online 29, August, 2011
Published in print edition August, 2011

Anxiety disorders are one of the most common psychiatric disorders worldwide and many aspects of anxiety can be observed. Anxious patients often consult primary care physicians for their treatment, but in most cases they do not accept the diagnosis of anxiety disorder. Anxiety is a symptom that could be seen in many organic disorders and can accompany almost any psychiatric disorder. Anxiety disorders are frequent and are associated with significant distress and dysfunction. Stigmatization is an important factor in insufficient diagnosis. The problems of anxiety cover all fields of life. This book intends to describe the epidemiological aspects and the main co-morbidities and consecutive diseases of the anxiety disorders.

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