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RECENT DEVELOPMENTS IN THE STUDY OF PREVALENCE AND PHENOMENOLOGY OF NEURASTHENIA IN GENERAL HEALTH CARE ACROSS CULTURES

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SUMMARY

The authors examined the prevalence of neurasthenia based on ICD-10 criteria across centers and its diagnostic validity in primary care by different diagnostic thresholds using the data of the WHO Collaborative Study on Psychological Problems in General Health Care. The WHO study used a two-stage stratified sampling design. Consecutive general health care attendees (N=25916) at 15 centers in 14 countries were screened by using the 12-item General Health Questionnaire (GHQ-12), and a stratified random sample (N=5327) completed the second stage assessment, which included: the primary care version of the Composite International Diagnostic Interview (CIDI); the 28-item GHQ; a five level self-rating of overall health; a Brief Disability Questionnaire (BDQ) and a Social Disability Schedule (SDS). Information concerning recognition and treatment by treating physicians was also collected.

The prevalence of neurasthenia with co-morbid disorders was 3.8% in all centers, with higher rates in western centers than in non-western centers, while the prevalence of true neurasthenia was 1.7%. Excluding co-morbid cases reduced prevalence by over a half (1.7% for pure and 3.8% for co-morbid). The most common co-morbidity types were neurasthenia with depression (44.8%) and anxiety (27.2%). The proportion and frequency of somatic symptoms according to ICD-10 diagnostic criterion B for neurasthenia were similar both in pure and comorbid neurasthenia. Patients with pure neurasthenia like with other psychological disorders underestimated their health status and had obvious disability in daily life and occupational function.

The prevalence of neurasthenia was high across different cultures and countries in primary care and varied widely across centers. Excluding comorbid cases significantly reduced the prevalence of neurasthenia. The symptomatology of this disorder had a close relationship with depressive and anxiety disorders. Pure neurasthenia was less severe than comorbid neurasthenia on all validating measures for diagnosis but was clearly distinct from normal controls. The ICD -10 criteria can define a substantial number of patients with psychological dysfunction but the stability of the diagnosis varies greatly. Attempts to verify if it is just a prodrome of some other disorder or if it is a separate entity using follow up data of this project is needed. Finally, the ICD-10 criteria for neurasthenia may still need to be improved.

Key words: neurasthenia, diagnosis, general health care, WHO

INTRODUCTION

The concept of neurasthenia was introduced during the 19th century to describe a "new" disease associated with profound physical and mental fatigability by the American neurologist George Beard and then rapidly accepted by many physicians in continental Europe and occupied a major place in nosology until the beginning of this century. It also spread in other countries such as Japan and China (Sartorius ,1990). Although neurasthenia enjoyed extraordinary popularity in Britain and America, not everyone shared the general enthusiasm. The process of dismantling of Beard's concept of neurasthenia began almost as soon as it was popularized. Many writers commented on the overinclusiveness of Beardian concept of neurasthenia, and much justifiable criticism were made of the concept of neurasthenia, especially its lack of definition, precision and consistency. Therefore, it is inevitable that neurasthenia gradually fell into disrepute, particularly in the country of its origin. The diagnosis of neurasthenia and its classification in psychiatry have long been a controversial topic. The term neurasthenia did not appear in the DSM-I (APA, 1952) and, unexpectedly, returned in the DSM-II (APA, 1968). However, this turned out to be a temporary aberration, since in DSM-III (APA, 1980), DSM-IIIR (APA, 1987) and DSM-IV(APA, 1994) neurasthenia vanished again, to be scattered throughout various categories such as dysthymic disorder, chronic depressive disorder and others. Currently, only the International Classification of Disease (ICD) of the World Health Organization retains neurasthenia. The ICD-10 (WHO, 1992) includes a category for the classification of neurasthenia and provides definitions for clinical and research use. While this diagnostic category is not used in some countries, it is widely used in other countries as an approved diagnosis, particularly in non-western countries because it maps a real phenomenon and is more culturally appropriate. Kleiman (1985) and Yan He Qin (1989) have strongly underlined that neurasthenia is one of the most socially suitable and approved diagnostic category in China. Problems such as weakness and exhaustion represent common problems in traditional Chinese medicine. Furthermore, the general tendency for psychiatric disorders in developing countries to be expressed in somatic rather than in psychological terms is well known.

The WHO Collaborative Study on Psychological Problems in General Health Care has given the opportunity to explore the presence, form and frequency of neurasthenia, as defined in the ICD-10, and encountered in general health care settings. This report will use the data of this project to evaluate the validity of the diagnosis of neurasthenia by different diagnostic thresholds. Study questions include: what is the prevalence of neurasthenia in primary care; how it varies across centers; how the ICD-10 criterion excluding comorbid neurasthenia affects prevalence and if neurasthenia is independent of other disorders.

METHODS

STUDY SETTINGS

The WHO Collaborative Study on Psychological Problems in General Health Care was designed to study the frequency, type, course and outcome of psychological problems in persons contacting primary and general health care services in different cultures. The study design and methods are presented in greater detail elsewhere (Sartorius et al 1993 , Sartorius et al 1995). Therefore, only essential information is presented herein. The study used a two-stage, stratified sampling design. 25,916 general health care attendees at 15 sites in 14 countries were screened using the 12-item General Health Questionnaire (GHQ-12) (Goldberg et al 1988) rated by the physician seeing the patient. The population screened was stratified into low GHQ (60%), medium GHQ (20%), and high GHQ (20%) scorers. Eligible patients for second-stage assessments included all high GHQ scorers, a one of three random sample from the medium GHQ scorers, and a one of 10 random sample from the low GHQ scorers. Of those screened, 5327 patients completed the second stage assessment, which included the following measures: the primary care version of the Composite International Diagnostic Interview (CIDI) (World Health Organization 1990), the 28 item GHQ (Goldberg et al 1988), a five level self rating of overall health, a Brief Disability Questionnaire (BDQ) adapted from the Medical Outcome Study disability questionnaire (Stewart et al 1988; Ware et al. 1992), and a Social Disability Schedule (SDS)(Wiersma et al 1988) which is a semistructured interview on role functioning. A full set of all the forms used was provided to each of the centers. Instruments were translated from and back into the original English version. Research assistants were trained to use the standardized clinical and social assessments. The reliability both among raters at each center and among the centers was assessed and improved. For each patients selected for this diagnostic assessment, the treating physician completed a brief questionnaire regarding current physical and psychological illness. Information concerning recognition of psychological disorder by GPs and treatment prescribed was collected.

DATA ANALYSIS

The WHO study employed a two stage case screening procedure. A weighting procedure was therefore needed to estimate the prevalence of disorders in the initial sample. The results concerning the estimation of prevalence in this paper incorporate sampling weights calculated to adjust for different probabilities of sampling and different response weight according to gender and GHQ-12 score.

All diagnosis presented are made according to ICD-10 criteria. Statistical analysis was performed using the SPSS system. We first compared the prevalence of pure neurasthenia and its comorbidity, and examined the comorbidity types of neurasthenia, attempting to find if there were natural "cut points" to distinguish these disorders based on ICD-10 criteria. Second, the diagnostic effects of different validators on neurasthenia, including overall health rating, severity of physical disease and psychological disorder rated by physicians, and recognition and treatment by physicians, were assessed. Finally, the influence of somatic symptoms of criteria B of ICD-10 on defining the symptom profile of the disorder was evaluated.

RESULTS

The main phase of the study took place between May 1991 and April 1992, generally with a four to six month screening period in a primary care facility. Across centers, 25916 people were screened and 5327 people completed a baseline diagnostic interview. The overall screening response rate was 96.5%. For the second stage, the average response rate was 64.9%. On average the overall sample was predominantly female (1.6:1) of middle age or over (40% over 45). The majority of sample was married (62%) and employed (58.7%).

Table 1. shows the weighted prevalence of pure neurasthenia and its co-morbidity in each center. The rate in Manchester was the highest (3.7%), followed by Groningen (3.0%), Paris (2.9%), Berlin (2.7%), Mainz (2.6%), Ankara (2.4%), Nagasaki (2.0%) and Santiago (1.5%). The rates in other centers was relatively low. The prevalence of neurasthenia with comorbid disorders was 3.8%, while the prevalence of pure neurasthenia was 1.7%.

As for the types of co-morbidity, neurasthenia co-occurring with depression and general anxiety disorders were the most common types occupying 44.8% and 27.2% of co-morbidity cases respectively. The proportion of other types of co-morbidity were 8.6% of neurasthenia with somatization, 6.6% with dysthymia and 2.3% with hypochondriasis. Neurasthenia with panic disorder and harmful alcohol use were both 5.2%.

The proportion of the somatic symptoms of neurasthenia according to ICD-10 diagnostic criterion B is presented in Table 2. Of the 6 somatic symptoms, inability to relax (27.1%), sleep disturbance (20.7%) and irritability (18.7%) were commonly seen in pure neurasthenic cases but the corresponding phenomenon was also found in co-morbidity cases.

Table 2. Proportion of somatic symptoms of Criterion B for Neurasthenia

Criterion B	*Pure Neurasthenia*		*Comorbid Neurasthenia*	
Symptoms	*n*	*%*	*n*	*%*
1.Muscle pain	*38*	*15.1*	*96*	*12.4*
2.Dizziness	*22*	*8.8*	*79*	*10.2*
3.Headache	*24*	*9.6*	*104*	*13.5*
4.Sleep disturbances	*52*	*20.7*	*154*	*19.9*
5.Inability to relax	*68*	*27.1*	*178*	*23.0*
6.Irritability	*47*	*18.7*	*162*	*21.0*

Table 3. gives the validators for the diagnosis of neurasthenia. Both pure neurasthenic and comorbid patients underestimated their overall health. The mean score of overall health for pure neurasthenic cases was 3.78. It was a little lower than for co-morbid cases (4.04) but obviously higher than non-psychological cases. The severity of physical disease rated by primary care physicians were higher in commorbid cases (1.71) than either pure neurasthenic cases (1.49) or non-psychological cases (1.49). The severity of psychological disorders rated by physicians was just like that of physical diseases. The mean score of BDQ was 6.84 for co-morbid cases, 5.03 for pure neurasthenia and 2.74 for non-cases, while the rating of SDS was 1.72 for co-morbid, 1.14 for pure cases and 0.59 for non-cases. Ratings in pure neurasthenia were lower than co-morbid cases but clearly distinct from non-cases.

Table 1. Prevalence of neurasthenia (weighed)

Center	***Interviewed (n)***	***Pure Neurasthenia (wt%)***		***Comorbid (n) Neurasthenia (wt%)***	
Ankara	*401*	*10*	*(2.40)*	*7*	*1.70*
Athens	*196*	*1*	*0.30*	*8*	*4.30*
Bangalore	*398*	*1*	*0.30*	*10*	*2.50*
Berlin	*399*	*11*	*2.70*	*19*	*4.80*
Groningen	*239*	*10*	*3.00*	*25*	*7.40*
Ibadan	*269*	*1*	*0.40*	*2*	*0.70*
Mainz	*400*	*11*	*2.60*	*20*	*5.10*
Manchester	*409*	*15*	*3.70*	*26*	*6.40*
Nagasaki	*337*	*7*	*2.00*	*5*	*1.40*
Paris	*404*	*12*	*2.90*	*26*	*6.40*
Rio	*393*	*2*	*0.50*	*16*	*4.00*
Santiago	*273*	*4*	*1.50*	*25*	*9.10*
Seattle	*373*	*2*	*0.50*	*6*	*1.60*
Shanghai	*576*	*4*	*0.80*	*7*	*1.20*
Verona	*260*	*1*	*0.40*	*5*	*1.70*
Total	*5327*	*92*	*1.70*	*207*	*3.80*

Table 3. Validators for the diagnosis of neurasthenia

Validators	Non-case*	Pure neurasthenia*	Co-morbid neurasthenia*
Overall health self-rating	3.21	3.78	4.04
Severity of physical disease	1.49	1.49	1.71
Severity of psychological disorder	0.08	1.00	1.82
Social disbility: BDQ	2.74	5.03	6.84
SDS	0.59	1.14	1.72

*: mean values

*Table 4. Recognition of neurasthenia primary care physicians**

Center	Non-neurasthenia(n=5128) wt.%	Pure neurasthenia(n=91) wt.%	Comorbid neurasthenia (n=206) wt.%
Ankara	7.50	20.90	38.00
Athens	13.50	0.00	9.90
Bangalore	15.50	0.00	52.00
Berlin	32.10	55.00	72.30
Groningen	24.80	15.00	60.00
Ibadan	28.70	100.00	100.00
Mainz	31.60	27.60	62.90
Manchester	26.00	28.80	62.00
Nagasaki	4.90	13.50	6.90
Paris	31.00	9.00	63.80
Rio	20.30	12.50	46.20
Santiago	59.50	75.50	80.30
Seattle	18.70	83.30	74.60
Shanghai	5.10	0.00	35.20
Verona	49.90	100.00	65.30
Total	22.70	28.60	58.90

*: Table shows the percentage among consecutive attendees of all centers in weighted data

The severity of social disability in pure neurasthenic cases was less than co-morbid cases but clearly distinct from non-cases. The frequency of the somatic symptoms occurring in pure and co-morbid neurasthenia was also calculated. Of the 91 pure neurasthenia cases, 74.7% had complaints of inability to relax, 57.1% sleep disturbance, 51.6% irritability, 41.8% muscular pain, 26.4% headache and 24.2% dizziness. Similarly, of the 206 co-morbid cases, 86.4% presented with inability to relax, 78.6% irritability, 74.8% sleep disturbance, 50.5% headache, 46.6% muscular pain and 38.3% dizziness. The frequency of the 6 somatic symptoms in co-morbid cases was higher than in pure neurasthenia.

Recognition and treatment of neurasthenia by primary care physicians (PCP) are presented in Table 4 and Table 5. On average, in all centers, rates of recognition were 58.9% for co-morbid cases, 28.6% for pure neurasthenia and 22.7% for non-cases. When neurasthenia co-occurred with other psychological disorders, the rate of recognition increased. In some centers, the percentage of recognition of pure neurasthenia was much higher, e.g. in Ibadan (100%), Verona (100%), Seattle (83.3%), Santiago (75.5%) and Berlin (55%), whereas in some centers the percentage was very low, e.g. in Athens, Banglore, Shanghai and Paris.

Non-drug treatments were most commonly offered by PCPs for pure neurasthenia (70.9%), more frequently than for co-morbid cases (64.1%) and non-cases (62.1%), but drug treatment was more often given to co-morbid neurasthenia.

The results are displayed in Table 5. Since figures are small in individual centers. Table 5 combines data from all centers and presents unweighted data.

Table 5. Treatment offered by PCPs for neurasthenia*

Treatment	*Non-neurasthenia*	*Pure neurasthenia*	*Co-morbid neurasthenia*
	n=5128	*n=91*	*n=206*
	%	*%*	*%*
Drug treatment	*51.3*	*40.0*	*54.3*
Other treatments	*62.1*	*70.9*	*64.1*
Any treatment	*91.1*	*80.0*	*85.2*

* All centers combined, unweighted data.

DISCUSSION

The results of the WHO Collaborative Study on Psychological Problems in General Health Care demonstrated that a substantial proportion of patients seeking general health care in different countries and cultures did meet ICD-10 criteria for neurasthenia (1.7%). The prevalence of this disorder occupied a third place in all surveyed psychological disorders in the project. Patients with neurasthenia, similar to other psychological disorders, underestimated their health status and had definite disability in their daily life and occupational function. The prevalence of neurasthenia in this study showed striking variability across centers. In some countries, such as Great Britain and the United States, neurasthenia is virtually extinct in psychiatric practice and in many other western countries it is no longer a generally accepted diagnostic category of neurotic illnesses. At the same time, neurasthenia continues to be an important diagnosis in the non-western world because it is more accepted culturally. However, the findings concerning prevalence demonstrated that the rates of neurasthenia in some western centers were much higher than in non-western centers. The highest rate was found in the Manchester center (3.7%), more than ten times higher than the lowest rate (0.3%). The prevalence in six western centers (Manchester, Groningen, Paris, Berlin, Mainz and Ankara) was over 2%. Several factors may contribute to the difference in prevalence, for example, methodological limits, cultural differences, bias in sample selection, but the difference may also reflect true variations in prevalence across centers. In spite of the variation of prevalence, the WHO collaborative study suggest that there is, undoubtedly, such a disease entity as neurasthenia in primary care. We echo this point of view because we may create or eliminate a diagnostic entity artificially but the existence of a given disease is a fact and it will not appear or disappear at the investigators' will.

Although in this study the prevalence of pure neurasthenia according to ICD-10 criteria was high and neurasthenia was clearly distinct from normal controls on all validating measurements, when examining the exclusion and somatic symptom criteria of ICD-10, we found that the prevalence of co-morbid neurasthenia was very high (3.8%). Somatic symptoms adopted by ICD-10 appeared non-specific. Pure neurasthenia was less severe than co-morbid neurasthenia on all validating measurements including overall health status, severity of psychological and physical illness, disability and treatment and recognition by PCPs. The most common comorbidity types were neurasthenia with depression and anxiety disorders. This result is consistent with other studies. In China Kleinman (1982) conducted a study of 100 consecutive patients diagnosed as neurasthenia in a psychiatric outpatient clinic. 93 of these patients fulfilled the criteria of depression according to DIS. Wessely (1989) and White (1989) pointed out that there can be no doubt that fatigue, the salient symptom of neurasthenia is a central symptom in affective and anxiety disorders. These findings warn us that the stability of neurasthenia according to ICD-10 criteria is not so good and that its symptomatology has a close relationship with depression and anxiety, which are the main factors for confusing the diagnosis.

Another focus of controversy for neurasthenia is its symptom spectrum. Bead's clinical description of neurasthenia was very broad and included more than 50 symptoms and signs. Charcot (1889) reclassified the symptoms described by Beard, trying to isolate the most important ones. These were neuromuscular asthenia, brachialgia, dyspepsia with drowsiness, abdominal distention, constipation and a morbid mental state characterized by intellectual asthenia with some loss of memory, sad and irritable mood. Even so many authors still criticize the overinclusiveness of symptoms of neurasthenia. ICD-10 adopted six somatic symptoms for the disorder besides mental and physical exhaustion, stating in criterion B that at least one of the six symptoms must be present. In our study, both proportion and frequency of the somatic symptoms occurring in pure neurasthenia were found similar to co-morbid neurasthenia. We failed to identify neurasthenia-specific somatic symptoms. However, the frequency and proportion of these symptoms in individual psychological disorders were not calculated separately.

In conclusion, ICD-10 criteria for neurasthenia can define a substantial proportion of patients with psychological disturbances. This disorder is most commonly comorbid with depressive and anxiety disorders and its symptomtology has a close relationship with other psychological disorders. Further studies should focus on the prognosis of pure neurasthenia using follow up data of this project to verify if it is a prodrome of some other disorder or a separate illness. Also, ICD-10 criteria for neurasthenia need to be improved particularly the list of symptoms.

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