

Standardized diagnostic interviews, criteria, and algorithms for mental disorders: garbage in, garbage out

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Abstract There is a general consensus that diagnoses for mental disorders should be based on criteria and algorithms as given in ICD or DSM. Standardized clinical interviews are recommended as diagnostic methods. In ICD and DSM, much emphasis is put on algorithms, while the underlying criteria get much less attention. The question is how valid are the criteria that are collected by structured diagnostic interviews. 209 patients from a cardiology inpatient unit were interviewed with the *Mini International Neuropsychiatric Interview* (MINI). 32 (15.3%) were diagnosed as suffering from a major depressive episode or dysthymia. Additionally, a thorough clinical examination was done by a psychiatric expert in 15 patients. The standardized diagnosis of present major depression was reaffirmed in one. In total, four patients were suffering from some kind of depressive disorder presently or life time. Two patients were suffering from anxiety disorders, two from adjustment disorders, and four from different types of organic brain disorders. Most important, there are 3 out of 15 who are not mentally ill. Our observations show that standardized diagnostic interviews cannot be used to make specific differential diagnoses, but rather catch unspecific syndromes. This is partly due to the fact that the wording, definition, and understanding of the underlying criteria is rather vague. This is an even greater problem if there is any somatic comorbidity. In the revision of ICD and DSM, a

glossary of psychopathological terms and guidelines for the training of clinicians should be included.

Keywords Depression · Standardized diagnostic interview · Psychopathology · Diagnostic algorithm · Psychiatry · Clinical validity

Introduction

There is a general consensus that diagnoses for mental disorders should be based on criteria and algorithms as given in ICD or DSM [1, 2]. Originally, they were “research diagnostic criteria” with the goal to improve the reliability of diagnoses in research or to gain epidemiological data [3]. Meanwhile, some see diagnoses that are based on standardized clinical interviews as the standard for clinical purposes also [4–8]. But, there is also some discussion on the validity of standardized diagnoses [9–14]. Clinicians feel uneasy about the fact that one single and often unspecific symptom should decide whether a patient is suffering, for example, from depression or not. It is discussed that there is also a considerable amount of subthreshold disorders [15, 16]. Another problem is that, in spite of some exclusion criteria (e.g., intentional weight loss is not counting for the diagnosis of depression), in the end, a symptom is counted as symptom, irrespective of the overall symptom pattern. This leads to a high rate of “comorbidity,” while many clinicians prefer one diagnosis over many in reference to the Jaspers “Schichtenregel” [17].

A further problem is that standardized interviews are primarily based on questions to the patient while observations of the assessor are of less importance. This allows to have diagnoses made by research assistants or even lay interviewers. However, from a clinical point of view,

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observational information, for example, on formal thought processing, or modulation of mood, is crucial in the diagnosis of mental disorders and often more important than self-reported complaints [18, 19]. This leads to the problem that the validity of diagnoses can be not better than the validity of the criteria that constitute diagnostic algorithms.

The problem of the validity of diagnostic criteria is of special importance if there is a comorbidity of mental and somatic disorders. It has repeatedly been reported that there is an increased rate of depressive disorders of about 7–18% in patients with coronary heart disorders [20–22] or that 21% of respective patients develop a depression after onset of the heart disease [23]. These data can only be valid if a discrimination had been possible, for example, between feelings of fatigue and distress due to heart and respiratory insufficiency on one side and depression on the other. If not, symptoms of the cardiac disorder will be interpreted as signs of mental illness and result in exaggerated prevalence rates if not inadequate treatments [24].

Given these complexities, it is not surprising that there is only limited agreement between standardized diagnoses and diagnostic judgements of clinicians. Concordance rates are low for depression (agreement rate 64%; kappa = 0.27), anxiety disorders (agreement rate 55%; kappa = 0.18), or personality disorders (agreement rate 66%; kappa = 0.34). Higher agreement rates are found only for disorders with very specific lead symptoms like bulimia (agreement rate 89%, kappa = 0.66 [6]. Similarly, Becker et al. [13] reported overall poor diagnostic congruence (kappa = 0.0–0.33) between clinical diagnoses from routine examinations and DSM-IV diagnoses derived from the CIDI [19], a computer-assisted standardized diagnostic interview. Mostly, such results are discussed under the heading of “non-recognition” [25]. It is assumed that the instrument is right and the clinician wrong, while it also could be the other way round.

The aim of this study is to add data to the question of the validity of standardized diagnoses for mental disorders under special consideration of the validity of the criteria that are the basis for diagnostic algorithms. We report on the results of a thorough clinical assessment of patients who had been diagnosed as suffering from “major depression” in a standardized clinical interview.

Method

Participants

This investigation is a side study of a project on anxiety in cardiology patients [26]. All patients from a cardiology inpatient rehabilitation unit were asked to participate in a study on psychological coping with cardiac illnesses. Not

approached were patients who had recently undergone a heart transplantation, were carrying cardiac assist devices, or were participating in some other research project. A convenience sample of 209 patients (aged 39–56 [$M = 51.64$] years; 53.3% men) participated after having given their written informed consent. The study was in accordance with the declaration of Helsinki and approved by the German Federal Pension Authorities.

According to the standardized diagnostic interview MINI [27], 31 (14.8%) patients were at present suffering from a major depressive episode and 1 from dysthymia (15.3% in total). These patients were additionally seen by a clinician. Results of 15 assessments are reported in this paper. In 21.4% of these 15 patients, the cardiologic diagnosis was hypertension, in 35.7% ischemic heart disease, in 35.7% other heart disorders, and in 7.1% a metabolic syndrome. 85.7% of the sample was employed, 35.7% had been on sick leave directly before admission because of the somatic disorder. 78.6% of the patients expected to return to work after discharge from inpatient treatment within a month.

Standardized interview

Patients were interviewed with the structured *Mini International Neuropsychiatric Interview* (MINI) [27]. The MINI asks for diagnostic criteria of most mental disorders and allows to make diagnoses according to DSM-IV [2] based on defined algorithms. For each diagnostic category, there are two questions concerning the main characteristic, that is, the leading symptom of the disorder. If the patient answers this item with “yes,” the interviewer must continue and ask for further symptoms. Table 1 shows the diagnostic algorithm for the MINI diagnoses “episode of a major depression” and “dysthymia.”

The authors of the MINI have published very good interrater-reliability coefficients ranging between kappa = 0.79–1.00 [27, 28]. Validity has been studied by comparisons of the MINI diagnosis with the CIDI and the SCID, that is, other standardized diagnostic instruments. Validity coefficients range from 0.34 to 0.90. Clinical expert judgements and MINI diagnoses had lower agreement rate with kappa = 0.41–0.066 [28]. The MINI was chosen because it is an internationally known instrument that is well studied and frequently used in scientific publications.

The MINI can be done by clinicians or lay interviewers after a training. In this study, interviews were done with the German version 4.4 by four psychologists who had been specially trained. One of them had conducted about 360 MINI interviews before, and the other three were trained in the MINI for this study by doing at least 20 MINI interviews first as co-raters and then as raters with supervision by the experienced rater.

Table 1 Algorithm of diagnosis of depressive episode and dysthymia in the *MINI International Neuropsychiatric Interview*, cited from MINI (Sheehan et al. [27])

A. MAJOR DEPRESSIVE EPISODE			
(→ MEANS : GO TO THE DIAGNOSTIC BOXES, CIRCLE NO IN ALL DIAGNOSTIC BOXES, AND MOVE TO THE NEXT MODULE)			
A1	Have you been consistently depressed or down, most of the day, nearly every day, for the past two weeks?	NO	YES
A2	In the past two weeks, have you been much less interested in most things or much less able to enjoy the things you used to enjoy most of the time?	NO	YES
IS A1 OR A2 CODED YES?		→	
		NO	YES
A3	Over the past two weeks, when you felt depressed or uninterested:		
a	Was your appetite decreased or increased nearly every day? Did your weight decrease or increase without trying intentionally (i.e., by $\pm 5\%$ of body weight or ± 8 lbs. or ± 3.5 kgs., for a 160 lb./70 kg. person in a month)?	NO	YES *
IF YES TO EITHER, CODE YES.			
b	Did you have trouble sleeping nearly every night (difficulty falling asleep, waking up in the middle of the night, early morning waking or sleeping excessively)?	NO	YES
c	Did you talk or move more slowly than normal or were you fidgety, restless or having trouble sitting still almost every day?	NO	YES *
d	Did you feel tired or without energy almost every day?	NO	YES
e	Did you feel worthless or guilty almost every day?	NO	YES
f	Did you have difficulty concentrating or making decisions almost every day?	NO	YES
g	Did you repeatedly consider hurting yourself, feel suicidal, or wish that you were dead?	NO	YES
ARE 5 OR MORE ANSWERS (A1-A3) CODED YES? MAJOR DEPRESSIVE EPISODE, CURRENT			
B. DYSTHYMIA			
(→ MEANS : GO TO THE DIAGNOSTIC BOX, CIRCLE NO, AND MOVE TO THE NEXT MODULE)			
IF PATIENT'S SYMPTOMS CURRENTLY MEET CRITERIA FOR MAJOR DEPRESSIVE EPISODE, DO NOT EXPLORE THIS MODULE.			
B1	Have you felt sad, low or depressed most of the time for the last two years?	→	
		NO	YES
B2	Was this period interrupted by your feeling OK for two months or more?	NO	→
B3	During this period of feeling depressed most of the time:		
a	Did your appetite change significantly?	NO	YES
b	Did you have trouble sleeping or sleep excessively?	NO	YES
c	Did you feel tired or without energy?	NO	YES
d	Did you lose your self-confidence?	NO	YES
e	Did you have trouble concentrating or making decisions?	NO	YES
f	Did you feel hopeless?	NO	YES
ARE 2 OR MORE B3 ANSWERS CODED YES?		→	
		NO	YES
B4	Did the symptoms of depression cause you significant distress or impair your ability to function at work, socially, or in some other important way?		
YES DYSTHYMIA, CURRENT			

Clinical assessment

For reasons of medical diligence, all patients with a suspicious result in the standardized interview had to be seen by a consultant in order to check whether there was a state

of illness in need of medical attention. This was done by several consultants. 15 of the 32 patients with a depressive disorder were seen by one of the authors (M.L.), depending on work schedules and not on patient characteristics. These 15 patients are subject of the following report. M.L. is a

specialist in psychiatry and neurology since 30 years, has worked in psychiatric inpatient and outpatient facilities, taken care of acute and chronic mental problems of all kinds, is experienced in pharmacotherapy, and specialist in behavior therapy. He has participated in numerous research projects including clinical and epidemiological studies, in which standardized interviews of various kinds have been used, or studies on psychiatric methodology.

According to the rules of a thorough medical assessment, all patients were seen individually for about an hour. There was a somatic and neurological checkup. A full history was taken. All complaints were explored and the present psychopathological status investigated. The cardiologists were afterward informed about the psychiatric problem, and treatment recommendations were given.

Results

Table 2 gives an overview of all patients. From the 15 patients who were given the diagnosis of major depressive episode in the MINI, only one patient was seen as suffering from a depressive episode according to the clinical investigation. The intensity of depression was mild. The psychopathological features were nevertheless characteristic with anhedonia, exhaustion, fatigue, reduction in vitality, feelings of insufficiency, diurnal variation, and sleep problems. The episode was gradually developing since half a year. The patient was not impaired in his daily functioning.

There was a second patient suffering from depression, though not from major depression as diagnosed in the MINI, but dysthymia. The patient scored as major depression in the MINI, as he answered the symptoms with yes because there is no way to make a discrimination between severe and relevant symptoms and mild general complaints. Additionally, the patient was having some burden of life because his wife was sick. Therefore, unspecific symptoms like feelings of being worn out were answered with yes in the MINI. In the clinical investigation, there was definitely no present episode of major depression, as emotional modulation was fully unimpaired and adequate.

There were two more patients with depressive disorders, but no depressive episode was present. One patient was labeled by the MINI interview as “dysthymia.” In the clinical investigation, he reported recurrent depressive episodes that then switched to hypomanic states of mood. At present, the patient was friendly and with respect to his mood fully unimpaired, but he knew all symptoms. In the interview, he had reported symptoms that he had felt about half a year ago. The hypomanic mood swings have not been caught by the MINI.

The other patient reported also about recurrent, rather short depressive episodes in the clinical investigation. The depressive episodes were coming “out of the blue,” and she had a rather dynamic intercurrent personality, which might hint to a bipolar II disorder. As the last episode was a few weeks back, the patient answered the questions in the MINI with respect to an earlier episode, but at present she was fully unimpaired. The MINI gives as second diagnosis a generalized anxiety disorder that is also wrong, as the patient has no worrying in times of good mood.

Two patients who got a MINI diagnosis of depression were clinically suffering from anxiety disorders, that is, generalized anxiety disorder and agoraphobia. The patient with generalized anxiety disorder felt at present especially burdened, stressed, and fatigued since he suffered from a myocardial infarction some weeks ago. But, he had generally felt in this way during all his life. He had a tendency to constantly worry about daily minor matters. He always expects the worst to come and tries to keep everything under control. At present, he experiences a reduction of weight, sleep problems, and feelings of tiredness after the myocardial infarction.

The patient with panic disorder and agoraphobia experienced 3 years ago a panic attack that she interpreted as a cardiac problem. Since then, she asks for somatic explanations. This is also the reason why she came as inpatient in a cardiology unit. She cannot accept a psychological explanation as she does not want to be “crazy.” She has meanwhile developed a general avoidance behavior and can no longer enter shopping centers or use public transport. She complained about general symptoms of distress which scored as depression in the MINI, but there was clinically no mood impairment. During the clinical investigation, she was fully relaxed and friendly and emotionally well modulated.

Two patients were clinically suffering from an adjustment disorder. One patient underwent 4 weeks ago a surgery because of an aorta valve insufficiency. Shortly afterwards, they had to operate on him again, as it came to an internal bleeding. When he later underwent physiotherapy, he again suffered from a myocardial infarction. He complained that he had seen different physicians every day and was held in a noisy room with two other patients. His mood was a mixture of being fed up, anxious, and bewildered. That is why he answered the depressive symptoms in the MINI with yes. He was meanwhile developing a more distanced view on the events. His general mood was relaxed and his drive unimpaired. When distracted he felt mentally healthy.

The other patient had suffered a myocardial infarction 2 years ago. When going back to work, he was first reduced in rank and then fired, although he had given everything for the company, including his health. The

Table 2 Case vignettes and clinical evaluation of patients with current major depression according to the *Mini International Neuropsychiatric Interview* MINI (Seehan et al. [27])

Patient	Age	Case history	Positive criteria for depression or dysthymia in the MINI interview	Diagnosis according to MINI interview	Diagnosis according to clinical assessment
<i>Present major depression</i>					
1	Mr. RG	54	Since 1 year, gradually increasing anhedonia, exhaustion, tiredness, reduction in vitality, feelings of insufficiency, diurnal variation, and sleep problems No mental problems before	Appetite/weight changed Sleep problems Tired, without energy difficulty concentrating	Depressive episode Mild depressive episode
2	Mr. DR	53	Since ever (>10 years), reduced mood and lack of joy. He has already been in psychotherapy since 2 years. At present, he feels burdened and is worrying because his wife is severely ill. Mood is fully modulated and adequate	Sleep problems Moved more slowly Tired, without energy difficulty concentrating	Depressive episode Dysthymia
<i>Lifetime depression</i>					
3	Mr. ES	56	Since his childhood “melancholic,” from the age of 25 recurrent episodes with depressed mood and often changing in a euphoric state with hyperactivity and reduced self-control. At present, friendly and fully unimpaired with respect to his mood	Appetite changed Sleep problems Tired, without energy difficulty concentrating Symptoms began since working in a new job	Dysthymia Bipolar disorder, presently free interval
4	Mrs. SF	39	Since the age of 20 recurrent, mostly short episodes of depressed mood and inner emptiness, which she experiences as “unnatural” and which come without external trigger. Normally she is rather lively optimistic and dynamic. At present, she is friendly, relaxed, and unimpaired with respect to her mood. The last depressive episode has been a few weeks ago and lasted for about a week	Moved more slowly Tired, without energy Felt guilty, worthless difficulty concentrating	Depressive episode Generalized anxiety disorder Recurrent depression, presently remitted
<i>Anxiety disorder</i>					
5	Mr. HK	50	Since his early days, the patient feels mostly under stress due to worrying about minor matters which he has to solve in everyday life. He is presently especially worried after he had a myocardial infarction some weeks ago. He is afraid about what the future will bring. He tends to expect catastrophies	Appetite/weight changed Sleep problems Tired, without energy difficulty concentrating	Depressive episode Generalized anxiety disorder
6	Mrs. BS	48	Three years ago, the patient suffered from a state of inner tension, heart palpitations, feelings of fainting, etc. Since then, she is asking for an explanation and came into cardiology because she is convinced to be suffering from some severe heart problem. Meanwhile, she is fully agoraphobic and can no longer go shopping or use public transport. If this is suggested to her she starts to panic. Patient suffers from recurrent symptoms like “feeling of heart attack” with chest pain, tingling, glimmering eyes, and feeling of anxiety, avoids using the train, tube, and visiting big stores. She is presently free of symptoms due to pharmacological treatment	Appetite/weight Sleep problems Moved slowly Tired, without energy difficulty concentrating	Depressive episode Agoraphobia with panic disorder and heart related anxiety
<i>Adjustment disorders</i>					
7	Mr. MS	51	After repeated cardiac surgery, following myocardial infarction and unsettling medical care 4 weeks ago the patient is fed up, anxious, irritated, and bewildered. He is meanwhile developing a more distanced view on the events. His general mood is relaxed, the drive unimpaired. When focused on activities, he feels mentally healthy	Appetite/weight changed Moved more slowly Tired, without energy difficulty concentrating Symptoms since heart disease and treatment	Depressive episode Adjustment disorder Adjustment disorder

Table 2 continued

Patient	Age	Case history	Positive criteria for depression or dysthymia in the MINI interview	Diagnosis according to MINI interview	Diagnosis according to clinical assessment
8	Mr. RJ	56	After a myocardial infarction, he was first reduced in rank and then fired, although he had given for the company everything including his health. The prevailing emotion was embitterment, aggression against himself and his superiors, thoughts of revenge, downheartedness, inhibition of drive, and helplessness	Appetite/weight changed Sleep problems Moved more slowly Tired, without energy difficulty concentrating Felt guilty, worthless	Depressive episode Embitterment disorder
<i>Organic brain disorder and somatic problems</i>					
9	Mr. PL	56	The patient suffered from a myocardial infarction 1 year ago and two brain infarctions. The general mood is fine and relaxed. There are problems with concentration, memory, sleep, affect control, strength. He is afraid that his state may worsen even more	Appetite, weight changed Sleep problems Moved more slowly Tried, without energy Felt worthless, guilty	Depressive episode Adjustment disorder Organic brain disorder
10	Mr. PS	53	Excessive alcohol abuse for many years. Feels well and “wonderful.” When stimulated he starts to become angry, irritated, and complains about everything. There is a marked affect incontinence, gets loud, or is unable to watch TV because he then starts to weep	Sleep problems Moved more slowly Tired, without energy Felt guilty, worthless Symptoms occurred after myocardial infarction	Depressive episode, generalized anxiety disorder Organic personality change
11	Mrs. MK	50	She reports being easily touched emotionally. She has no feelings of helplessness or insufficiency. She complains about an enduring state of boredom, feeling tired, missing feeling of joy, her sleep is disturbed	Sleep problems Moved more slowly Tired, without energy Difficulty concentrating	Depressive episode Adjustment disorder Migraine
12	Mrs. WS	52	After the start of an antihypertensive medication some months ago, the patient observed a change in mood. She became more and more emotional labile. Mood changes in seconds from elated to weeping, tears are running down her face, and then again cheerful. She is irritated by herself	Appetite/weight changed Sleep problems Restless, increased drive to move Tired, without energy Felt worthless, guilty difficulty concentrating Symptoms since 4 years	Depressive episode Pharmacologically induced affect lability
<i>No mental disorder</i>					
13	Mr. BM	54	Phlegmatic obese person for all his life. He complains that he lost his wife long ago and had never been able to hold a job for a longer time. He does not show much initiative but has arranged himself with living from social support. When talking to the patient, he is in good mood can smile and says that he is OK if he is only be let alone	Weight increased Sleep problems Moved more slowly Tired, without energy Felt worthless, guilty difficulty concentrating Symptoms began 6 months ago	Depressive episode adjustment disorder Phlegmatic personality
14	Mrs. GF	56	The patient is a woman working in the construction industry and has to supervise road works. She feels in permanent competition with her male colleagues. Therefore, she complained in the standardized interview about unspecific symptoms like overtaxation and being tired. When talking to the patient, she looks emotionally unimpaired and says that generally she feels fine	Sleep problems Moved slowly Tired, without energy difficulty concentrating	Depressive episode Generalized anxiety disorder Mentally healthy
15	Mrs. IM	51	Half a year ago her father died. When thinking of him, she is still emotionally touched. There is a little histrionic touch in the way she reports about events. She reports very lively and in a detailed manner, and she was partly hyper-expressive in her emotion. The affective modulation is not disturbed. The drive is normal, and there is no sign of cognitive dysfunctions	Lost weight Sleep problems Moved more slowly Tired, without energy Felt guilty, worthless difficulty concentrating Symptoms occurred after father's death	Depressive episode Hypochondriasis Mentally healthy

prevailing emotion was embitterment, aggression against himself and his superiors, thoughts of revenge, downheartedness, inhibition of drive, and helplessness. He answered these latter items with yes in the MINI and got a diagnosis of depressive episode. In the clinical investigation, he played down all emotional reactions and was reproachful against the world, including the physicians who were treating him and who, as he thought, would only cause additional problems.

A diagnostic problem of special interest in cardiology poses organic brain syndromes. There are many patients who show such problems after myocardial infarction or surgery [29]. One patient reported that he had no mental problem whatsoever until his myocardial infarction 1 year ago and two brain infarctions in the aftermath. The patient had problems with his memory, showed circumstantial thinking, irritability, and affect incontinence. Answering these items with yes in the MINI, he got a diagnosis of depression from the structured interview. In the clinical observation, the general mood was fine.

The other patient with an organic brain syndrome had for many years consumed excessive quantities of alcohol. At present, he felt well and “wonderful.” When stimulated, he started to become angry, irritated, and complained about everything. Answering questions in the MINI, he said that he felt sad and depressed and got the diagnosis of depression. In the clinical investigation, there was a marked affect incontinence, that is, he got loud, started to cry, or was even unable to watch TV because he then started to weep.

Another patient was suffering from a severe migraine accompagnée. The patient saw herself in general as a cheerful person. In the interview, she was relaxed and friendly. But, since several years she was suffering from severe migraine attacks. These were accompanied by visual sensations, nausea, and light intolerance. An MRT showed white matter and subcortical lesions. In the recent times, she felt more and more fatigued and said that she had changed as a person and was no more as productive as before. Being confronted with the MINI questions whether she felt depressed or suffered from bad mood, she answered yes and got the diagnosis of depression in the structured interview.

The next patient reported in the clinical investigation a change in mood after the start of an antihypertensive medication some months ago. She became more and more emotionally labile. Mood changed in seconds from elated to weeping, tears were running down her face, and then she was cheerful again. She was irritated by herself. When asked in the MINI about her mood, she answered the items asking for feeling bad with yes and got a depression diagnosis.

Last not least there are several patients who have not been mentally ill at all. One patient was a phlegmatic obese

person for all his life. He complained that he lost his wife long ago and had never been able to hold a job for a longer period of time. Asked for depressive symptoms in the MINI, he answered them with yes. He did not show much initiative but had arranged himself with living from social support. When talking to the patient in the clinical investigation, he was in good mood, smiled, and said that he is OK, if he is only let alone. One could clinically discuss whether this is a personality disorder but there were no definite symptoms for this.

The next patient was a woman working in the construction industry who had to supervise road works. She felt in permanent competition with her male colleagues. Therefore, she complained in the standardized MINI interview about unspecific symptoms like overtaxation and being tired. When talking to the patient in the clinical investigation, she looked emotionally unimpaired and said that generally she feels fine.

The last patient reported that her father had died half a year ago. When thinking of him she was still emotionally moved. That is why she answered the MINI items on problems with mood with yes. There was in the clinical investigation also a little histrionic touch in the way she talked about events. She reported very lively and in a detailed manner, and she was partly hyper-expressive in her emotion. Apart from this, her affective modulation was not disturbed. The drive was normal, and there was no sign of cognitive dysfunctions. One could clinically discuss a pathological grief reaction, but there were no respective symptoms. One could also discuss a histrionic personality disorder. But, the “histrionic touch” was not enough to warrant such a diagnosis. It nevertheless can well explain why the patient answered respective questions in the standardized interview with yes.

Discussion

In summary, there is one out of 15 patients where the diagnosis of present major depression is reaffirmed. Two out of 15 are presently suffering from a depressive type disorder, four are suffering from some depressive disorder life time, although two from bipolar II disorders, which makes an important difference. Two patients were suffering from anxiety disorders, two from adjustment disorders, and four from different types of organic brain disorders. Most important, there are 3 out of 15 who are not mentally ill at all, but show some type of normal psychological problems such as a little bit of a histrionic touch in the context of the death of her father, work overtaxation, or just a phlegmatic personality.

What is the problem with the standardized assessment? It is not the application of the algorithm. This is

straightforward and any computer can count symptoms. Problems are (a) the meaning and (b) the context of complaints and symptoms.

All diagnoses are based on selected leading psychopathological symptoms, like worrying in generalized anxiety disorder or depressed mood in major depression. These are the A-criteria in the diagnostic algorithms. If the assessment of these A-criteria is invalid all further diagnostic conclusions must be wrong. For major depression, the A-criterion reads “Have you been consistently depressed or down? Have you been much less interested in most things or much less able to enjoy things?” This phrase can be answered with yes in the case of a depressed anhedonic mood, where the patient is not able to feel joy. It can also be answered with yes if somebody has some life problem which makes him or her feel bad. It can also be answered with yes if somebody is dysphoric, angry, fed up, moved, morose, disgruntled, bad-tempered etc. There are hundreds of types of bad mood which are not related to the psychopathological phenomenon of “depressed anhedonic mood.” In our cases “depressed mood” was in fact confounded with embitterment, feelings of distress and overtaxation, bewilderment, phlegmatism, grief, affect incontinence, or affect lability. Patients themselves cannot say whether their mood is a depressed one. This is an expert judgement based on psychopathological expertise. Psychopathology is not what the patient says, but what the psychiatric expert observes. In this respect, an important aspect in the decision whether a bad mood is in fact a depressed mood is the emotional modulation, that is, affect rigidity and reduced affect modulation [18, 19]. They are not included in the standardized assessments at all. In summary, the invalidity of answers to the question whether somebody feels down hearted has resulted in a large rate of false positive cases.

There are also problems with the B-criteria in the diagnostic algorithms. They are highly unspecific. There are many reasons why a person can lose weight, feel tired, has troubles to sleep, or has problems with concentration. These are symptoms that can occur in almost all mental illnesses, like in our cases anxiety disorders or organic brain disorder. They can also be caused by hundreds of other reasons like in our cases severe cardiac illness.

Furthermore, severity of symptoms is ignored in diagnostic algorithms and standardized interviews. A symptom is a symptom, independent of severity. A little bit of tiredness or problems with concentration is taken as identical to severe and disabling tiredness or inability to concentrate.

Also, the context of symptoms is not taken into account. If a person would complain about relevant difficulties with concentration without other symptoms, one would make an MRT because a brain tumor would have to be taken into

consideration. The same problem in a patient with schizophrenia will get no attention at all. There is a multitude of symptom patterns or contextual factors like age, gender, or social status which are important for judgements on the clinical meaning of symptoms and diagnostic conclusions [30].

Several consequences can be drawn from our observations:

1. Standardized diagnostic interviews based on research diagnostic criteria are useful in epidemiological or clinical research to describe populations in a reliable manner. Still, these data have to be interpreted with caution. There are reports of ever increasing prevalence rates of mental and especially depressive disorders. In early epidemiological studies, which were based on clinical judgements, prevalence rates for depression were about 3% in the general population [31, 32]. Today, in the age of standardized diagnostic assessments, prevalence rates from 10 to 30% are discussed [25]. This “increase” is in our view at least in part result of a methodological artifact, because multiple ways of feeling unhappy are now counted as “depression.” This is especially important in patients with somatic comorbidity. In our sample, there were 14.8% cases of major depression according to the standardized assessment, while in reality the rate was 0.8%.

In this context, it is of interest that over the last decades the effectiveness of antidepressant drugs in controlled clinical trials has diminished to the point that some question their effectiveness at all [33]. This could well be understood if such trials include, apart from depressed patients, others with dysphoria, overtaxation, grief etc., for which antidepressants have never been considered to be effective.

2. Standardized diagnostic interviews should never be the basis for making diagnoses or treatment decisions in individual cases. This would be dangerous for the patient. Individual cases need a thorough clinical assessment and expert conclusions on the diagnosis, and the treatment must be guided by clinical expertise.
3. Especially in patients with somatic comorbidity standardized assessments must be handled with great caution. The reports on high rates of mental disorders in somatic patients is for sure to some part the result of invalid symptom assessment and wrong diagnostic conclusions. These patients should be safeguarded from such labeling. Inadequate diagnoses are also a good explanation that there is no evidence that treatment of these “mental disorders” can improve the course of the somatic illness or contribute to the well-being of the patient [34].

4. In the ongoing discussion on the revision of ICD and DSM, the focus of interest is on algorithms. There is no discussion on the reliability and validity of the underlying criteria. But, if the criteria are invalid all conclusions are invalid. The saying is “Garbage in, garbage out.” Under this perspective, many diagnoses must be called “gigo-diagnoses,” that is very structured but invalid.
5. The traditional European focus in the diagnosis of mental disorders has been on the proper assessment of symptoms. The assumption has been that once the symptoms have correctly been assessed then the diagnosis is the easy part. Instruments have been the AMDP [19] or SCAN [35]. It had been shown that the reliability in the assessment of symptoms was high when there was a proper training [36]. The American diagnostic approach started from the side of diagnostic algorithms and Research Diagnostic Criteria [3, 37]. The “glossary of technical terms” in the DSM is highly insufficient and has found no greater interest. Today, the impression is that the view on algorithms has become dominant with many negative consequences. The conclusion is that the AMDP, SCAN, or glossary of technical terms urgently should be revitalized. Algorithms can be no better than the criteria they are based upon.

Conclusion

The cases show some problems of standardized diagnostic interviews. This is not a problem in scientific research which aims at describing populations, but it is a problem in clinical cases that deserve clinical consequences and treatment. A note of caution must be made in respect to our findings as the percentage of misdiagnoses in this study cannot be generalized, because patients with somatic and psychiatric comorbidity are an especially complex group.

We can conclude that

- A glossary of psychopathological terms is needed
- Clinicians need training in the assessment of psychopathology
- Epidemiological data that are based on standardized interviews must be interpreted under methodological considerations.
- Standardized diagnostic assessments cannot be used in the diagnosis of individual patients. This is especially true if there is any somatic comorbidity.

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Conflict of interest None.

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