CHAPTER 9

MOOD ELEVATION DISORDERS

Happiness

Psychiatry deals with disordered mental life, but we don't yet have a complete understanding of healthy mental life. Psychological research provided tests of cognitive functions, allowing the determination of "normal ranges" of cognitive function. Psychoanalysis gave us useful notion that "normal" is indicated by the ability "to work and love". But we don't have a definition of 'normal happiness'.

Subjective well-being (SWB) has been conceptualized as being composed of pleasant emotions and for our purposes, can be equated with happiness (Diener et al, 1997). The most commonly used SWB assessment tool is the "Happiness scale".

Evidence suggests greater happiness is associated with being married, religious, extraverted and optimistic. Gender does not appear to be as important. Wealthier people are consistently found to be happier than poorer people, but the effects are small (once basic needs have been obtained).

Genetic factors have a significant impact on long-term SWB. (Lykkenn and Tellegen, 1996). This is unsurprising, as we know genetics strongly influences temperament and personality. Of course, the environment is also important. Positive life experiences (in the early years in particular) help shape the phenotype by epigenetic processes. Other major influences include our ability to adapt and set goals. The ability to adapt is a boon when it comes to adjusting to a loss, but also a drawback, as when a new 4-weel drive makes us happy, but only briefly. Goals can be helpful, even if they are unachievable, as long as progress is being made toward them.

From the writer:
With respect to striving for "happiness", I suggest two "quotes" for consideration:

1. "Nothing satisfies the man who is not satisfied with a little" – Epicurus (341-270 BC)
2. "All we need to be really happy is something to be enthusiastic about" – Charles Kingsley (1819-75).

Now, back to science.

Introduction to pathological mood elevation

Low mood takes various forms. It is often difficult to be sure whether an individual who is looking and sounding unhappy is suffering a pathological mood disorder.

In general, pathological mood elevation is less difficult to identify. There is an unusual amount of energy: the individual moves, smiles and talks more, and more rapidly than usual (along with other symptoms). While most of us have times when we lack energy, few of us times when we have excessive energy.

Pathological mood elevation is conceptualized as two levels: mania (the higher level), and hypomania (under or less than mania). Hypomanic symptoms may occur in both bipolar disorder and the elevated phase of cyclothymic disorder. As these are matters of degree and judgement, in a particular case, clinicians may disagree on the appropriate designation. The important issue it to identify when treatment is indicated, and to provide that treatment.

Mood elevation often presents with euphoria, disinhibition and excessive friendliness.

Illustration. A middle aged woman was admitted to hospital with mania. While on the ward she used acrylic paint to adorn her jeans with word including Joy, Love, Peace, Kindness and Patients. Across the seat she painted “I love (indicated by a symbol of a heart) life”. These additions reflected her euphoria, but also her lack of inhibition and poor judgement. When she recovered she regretted ruining new and expensive clothing (which she had purchased during a manic buying spree).

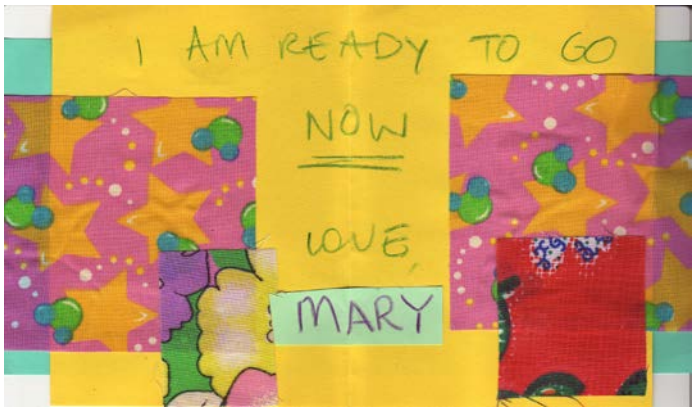
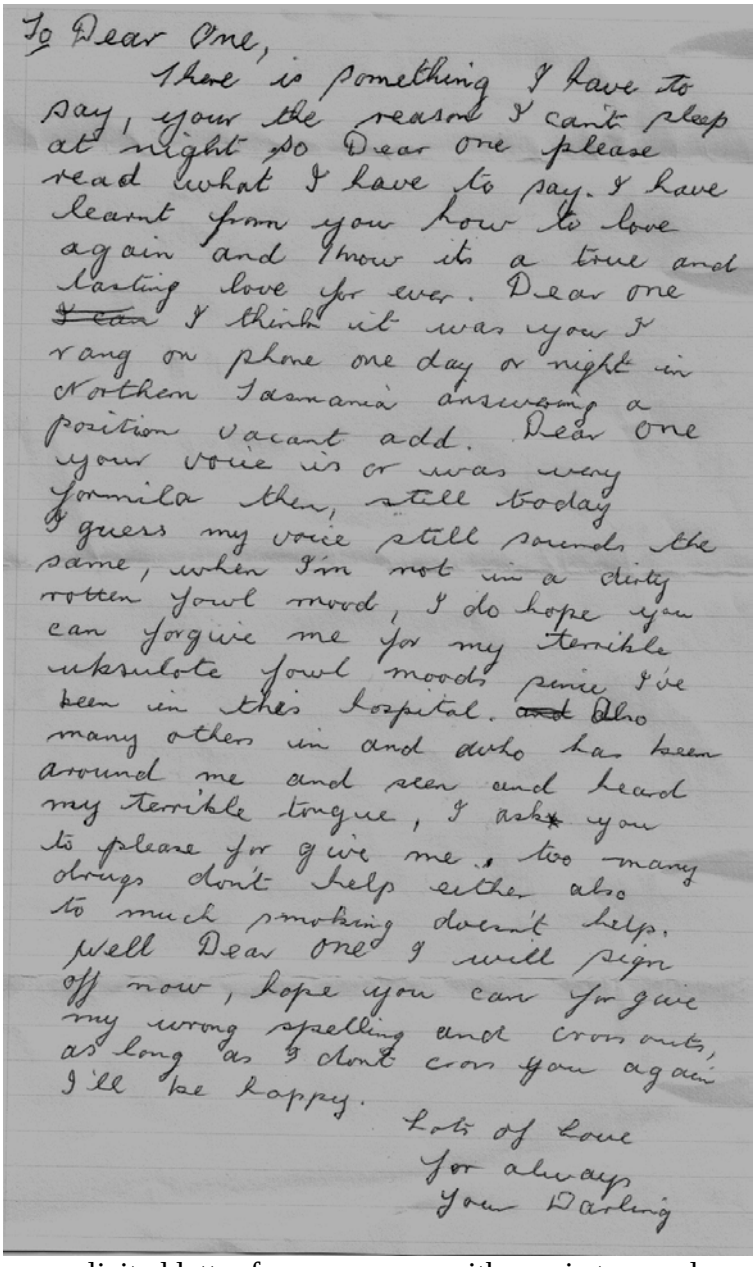


Illustration. A manic female went to an occupational therapy session and made a card for her doctor, which stated she was ready to leave hospital. The construction (different coloured papers and pieces of bright cloth) tended to contradict her written message.

A point to remember, however, is that mood elevation may presently quite differently, that is, with irritability and demanding behaviour. Irritability often emerges later in an episode of mania (perhaps in response to clinicians obstructing patient wishes), but it may also manifest as an early feature.



To Dear One,

There is something I have to say, your the reason I can't sleep at night so Dear one please read what I have to say. I have learnt from you how to love again and I now its a true and lasting love for ever. Dear one ~~I can~~ I think it was you I rang on phone one day or night in Northern Tasmania answering a position vacant add. Dear one your voice is or was very formila then, still today I guess my voice still sounds the same, when I'm not in a dirty rotten fowl mood, I do hope you can forgive me for my terrible absulote fowl moods since I've been in this hospital. ~~and~~ Also many others in and out who has been around me and seen and heard my terrible tongue, I ask you to please for give me, too many drugs don't help either also to much smoking doesn't help. Well Dear One I will sign off now, hope you can for give my wrong spelling and cross outs, as long as I don't cross you again I'll be happy.

Lots of Love
For always
Your Darling

Illustration. An unsolicited letter from a woman with mania to a male member of the hospital staff. This staff member was not involved in the care of the patient, and they had not been introduced. Thus, the endearments at the beginning and end of the letter indicate disinhibition. The patient reports being unable to sleep at night (a common manic symptom). An additional important feature is that the patient is apologising for episodes of irritability: “I do hope you can forgive me for my terrible absolute fowl moods” and “my terrible tongue, I ask you to please forgive me”.

As mentioned in Chapter 6, the form of thought may be abnormal. Flight of ideas is common, occasionally with clanging or punning. Thought and behaviour may be chaotic and uncharacteristic for the individual.

Illustration. A middle aged woman who had been successful in business was admitted to hospital in a manic state. An intimate relationship had recently ended, and there was advice from relatives that her partner had left the relationship with an unjustifiably large amount of money. The patient demonstrated thought disorder, but was able to indicate that she had put money in her vagina. This was retrieved. It was a in the form of a role, about the size of a cigarette. It was secured with rubber bands. As the patient was manic it was not surprising that she had used various different brightly coloured bands. She insisted this was rational behaviour. When the role was opened, it contained $200. On the wrapping paper was written, “The hole in the Wall”. This term is used in some parts of the world to indicate an ATM, from which one obtains money. Some links might be made here: the vagina is a hole, and the intimate partner was believed to have taken some of the patient’s money. When the woman recovered her money was returned, but she was not asked for a full explanation. This would have been embarrassing and achieved nothing. She would probably have had only a vague, if any, memory of the events, and no clear explanation.

It can be difficult to distinguish between particular personality types and low levels of pathological mood elevation. Examples include 1) the narcissistic personality type in which there is a pervasive pattern of grandiosity, a sense of entitlement (unreasonable expectation of preferential treatment) and lack of empathy, 2) the histrionic personality type in which there is excessive sexually provocative and attention seeking behaviour, 3) the borderline personality type in which there is instability of interpersonal relationships and impulsivity, and 4) the antisocial personality type in which there is irritability, exploitation and disregard for the rights of others.

It may be difficult to differentiate mood elevation from Attention-Deficit/ Hyperactivity Disorder (ADHD) which is described most frequently in children but may occur in adults. In ADHD there is distractibility, increased activity and sleeplessness, but true mood elevation is absent.

Diagnosis is also difficult when the individual is co-morbid (more than one morbidity/diagnosis at the same time) with a mood elevation and a Cluster B personality disorder (narcissistic, histrionic, borderline or antisocial personality disorder). Bipolar disorder is frequently co-morbid with borderline personality disorder (McDermid et al, 2015).

Mood elevation may result from illegal drug use, in particular, stimulants. It may manifest as a feature of steroid treatment, thyrotoxicosis and multiple sclerosis.

Mood elevation may present with psychotic symptoms, delusions and hallucinations. Mania has features of psychosis in about 10% of cases.

Manic episode

The DSM-5 diagnostic criteria for a manic episode:

A. A distinct period of abnormally and persistently elevated, expansive, or irritable mood, lasting at least one week (or any duration if hospitalization is necessary).
B. During the period of mood disturbance, at least 3 of the following symptoms have persisted (4 if the mood is only irritable) and have been present to a significant degree.
    1. Inflated self-esteem and grandiosity
    2. Decreased need for sleep
    3. More talkative than usual or pressure to keep talking
    4. Flight of ideas or subjective experience that thoughts are racing
    5. Distractibility
    6. Increase in goal-directed activity or psychomotor agitation
    7. Excessive involvement in pleasurable activities which have a high potential for painful consequences (unrestrained buying sprees, sexual indiscretions, foolish business investments)
C. Mood disturbance sufficiently severe to cause marked impairment in occupational functioning or in usual social activities or relationships with others, or to necessitate hospitalization to prevent harm to self or others.

Hypomanic episode

By definition, the hypomanic episode is less severe than a manic episode. DSM-V has attempted to quantify this difference.

Rather than being present for 1 week, the diagnostic criteria state that hypomania need be present for only 4 days. Three or more of the 7 listed symptoms must be present. It is generally agreed that in hypomania, the episode is not severe enough to cause

marked impairment in social or occupational functioning, or to necessitate hospitalization, and there are no psychotic symptoms.

Bipolar disorder

'Bipolar disorder' is a disorder (possibly a range of disorders) in which marked mood elevation is a feature. Prevalence estimates suggest 1.5-3.0% of the population suffer bipolar disorder (Narrow et al, 2002). It is the sixth leading cause of disability worldwide (Murray &Lopez, 1996).

Manic (elevated) episodes can be accurately diagnosed. Unfortunately, people with bipolar disorder often feel well (too well) and lack insight. They may be over active and unable to co-operate with others. Also, this is a heterogeneous disorder, and different forms may be underpinned by different processes.

The sub-classification into Bipolar I and Bipolar II disorders is currently used in research. However, for present purposes, this distinction is unimportant.

Bipolar I disorder is diagnosed when there has been at least one episode of mania (irrespective of whether a depressed pole has ever been observed). If a depressive episode is not reported, it is assumed that depression has been present but to a mild degree and has passed unnoticed, or that there will be one in future.

Bipolar II disorder is diagnosed when there is a history of at least one episode of hypomania (not mania). Again, it is assumed that there has been or will be an episode of depression.

Rapid cycling bipolar disorder – this term has been applied when there are four or more episodes of significant mood elevation or depression in the preceding 12 months. The term is sometimes used loosely. On rare occasions, the mood may "rapidly switch" from high to low (or vice versa) in a matter of hours. More than one switch in one day is unknown in the writer's experience. Rapid cycling is rare.

Mixed mood state – This 'diagnosis' has been replaced in DSM-5 with the specifier "**with mixed features**". This specifier can be applied to both depressive and manic episodes. It refers to the coexistence of symptoms of low and elevated mood. Low and elevated mood states do not cancel each other out. Examples include the patient who is talking about his/her suicide plan in a rapid, euphoric manner, and the patient who is weeping and laughing at the same time about how successful he/she has been in life. Frequently the clinical picture changes with low and elevated symptoms being more prominent at different times. This should not be incorrectly diagnosed as rapid cycling. This condition is relatively common.

Clinical features of bipolar disorder

The clinical features of depressive phases have been described in Chapter 8. The clinical features of manic and hypomanic can be extrapolated from the diagnostic criteria listed above.

Patients with mania usually do not bring themselves to a health professional or hospital complaining of symptoms. Commonly, they lack insight, and have “never felt better”. In these circumstances patients will naturally not wish to come into hospital, or for treatment which will make them feel less “well”. Quite frequently patients with mania are brought to professional attention by the Police or family members. Patients may need to be retained in hospital against their will, using the local mental health legislation.

Patients classically present in a disorganized state. They may be unclean and shabby in appearance; having been highly distractible and jumping from one exciting idea to the next, they may not have had time or the necessary focus to attend to their grooming. Alternatively, the patient may present in the latest fashions, often in the brightest colours, and wearing excessive jewellery.

Patients are often talking rapidly and loudly and are difficult to interrupt (pressure of speech/thought). With racing thoughts, patients rapidly change topic, making it difficult follow the points they are making (or not making; flight of ideas). A feature of flight of ideas may be may be clanging (rhyming of words) and punning, although this is not common.

Patients have often not slept of some days or might be having 3 or less hours of sleep per night. They will not see this as a problem and state that they don’t need any more sleep, and besides, they have too many things to achieve to waste time sleeping. They are often not eating regularly or wisely. They may be visiting politicians with plans to improve the state of the world or have entered into unwise investments.

While people with mania may be irritable (especially when thwarted) they do not usually represent a danger to others, except for an occasional pub brawls or tussles with family members. They represent a danger to themselves, not so much through attempts on their life, but through unwise sexual encounters and investments. Thus, they are frequently in danger of doing themselves social and financial damage. It depends on the interpretation of the local mental health legislation as to whether this type of danger justifies involuntary hospitalization.

Mania, especially when marked, is best managed in hospital. Patients may not accept medication and this may need to be initiated involuntarily. The first step, particularly when lack of sleep and food and fluid intake are causing concern, is to reduce the overactivity. This is achieved using a sedating antipsychotic medicine, sometimes with the addition of a benzodiazepine. The mood stabilizing medications (lithium carbonate, sodium valproate, carbamazepine) can also be commenced (or re-commenced) at this stage. The best possible outcome is that the patient is discharged from hospital on mood stabilizing (prophylactic) medication, complies with medical recommendations and remains well.

Neuropsychology

Those with bipolar disorder are at increased risk of developing dementia (Strejilevich et al, 2015).

It has been believed of some years that bipolar disorder is associated with diminished neurocognitive function, and that the reduction is collated with the number of past episodes (Yurgelun-Todd & Sneider, 2006).

However, a recent review found no consistent evidence supporting progressive deterioration of cognitive function Strejilevich et al, 2015).

Neuroimaging in bipolar disorder

The whole brain volume in bipolar disorder appears to be preserved (Hoge et al, 1999). However, moderate ventricular enlargement is frequently demonstrated (Elkis et al, 1995), suggesting at least some tissue loss.

Grey matter changes are reported (Elkis et al, 1995), however, these are generally small (Kempton et al, 2008), suggesting that these changes in bipolar disorder are less pronounced than those found in schizophrenia (Nugent et al, 2006).

Grey matter changes have been reported in the left medial frontal gyrus (Janssen et al (2008), dorsolateral and orbital prefrontal cortices (Rajkowska et al, 2001).

The subgenual (under the knee, or anterior bend of the corpus callosum) anterior cingulate cortex is an area of particular interest. Reduced grey matter volume and decreased cerebral blood flow and metabolism in the left subgenual anterior cingulate had been demonstrated in people with bipolar disorder with a positive family history (Drevets et al, 1997). Similar changes have been reported in patients with first-episode mood related psychosis (Hirayasu et al, 1999), indicating that early changes occur. This is consistent with post-mortem studies which describe reduced glial (Ongur et al, 1998) and neuronal (Bouras et al, 2001) density in the subgenual cingulate cortex of people with bipolar disorder.

Koo et al (2008) conducted a longitudinal study of bipolar disorder, scanning patients at the first episode psychosis, and again, 2-3 years later. They found progressive reduction in the volume of the anterior cingulate cortex. A study of chronic bipolar patients found progressive grey matter reduction in the hippocampal, fusiform, and cerebellar cortex, over a 4 year follow-up period (Moorhead et al, 2007).

Savits et al (2010) found that compared to healthy controls, un-medicated individuals with bipolar disorder had significantly smaller amygdalae, while medicated individuals with bipolar had larger (trending to significance) amygdalae. The difference between these two disordered samples was attributed to the effects of psychotropic medication.

White matter hyperintensities are extensive and are thought to be more pronounced in bipolar disorder than schizophrenia (Altschuler et al, 1995). However, a careful study

(Zanetti et al, 2008) suggests these disorders have similar white matter deficits. Heng et al (2010) reviewed 18 diffusion tensor imaging (DTI) studies of the white matter of people with bipolar disorder, and described loss of white matter connectivity, involving prefrontal and frontal regions, projection, associative and commissural fibres. Abnormalities of white matter tracts continue to be demonstrated in patients with bipolar disorder (Barysheva et al, 2013) and their unaffected siblings (Sprooten et al, 2013).

A study using resting state functional magnetic resonance imaging reported significant hyperconnectivity between the right amygdala and the right vetrolateral prefrontal cortex (Torrisi et al 2013) in bipolar patients in remission. These authors also remarked on activity in the anterior cingulate cortex.

A recent DTI study demonstrated altered axonal structure in the posterior internal capsule, corona radiate and the corpus callosum (Bauer et al, 2015).

A neuroimaging breakthrough?

A huge study (>7000 patients) compared the MRI scans of patients suffering the main psychiatric diagnoses (psychotic and non-psychotic). Spectacularly, they reported a 'trans-diagnostic neural abnormality!! Grey matter loss in the dorsal anterior cingulate cortex and the anterior insula. Thus this interconnected network appears to underpin all psychiatric disorders (Goodkind et al, 2015). This is a region involved in executive function, which is disrupted in some disorders. If this is supported it will be one of the greatest breakthroughs in the history of psychiatry.

Pathophysiology of bipolar disorder

Bipolar disorder is believed to result from dysfunction of neural networks (rather than dysfunction at a particular site). Various circuits have been proposed. A prominent contender is the anterior limbic network (ALN), which includes the prefrontal regions, subcortical structures (such as the thalamus, striatum and amygdala) and the midline cerebellum (Strakowski et al, 2005).

The work of Goodkind et al (2015) mentioned two paragraphs above suggests a network connecting the anterior cingulate and the anterior insula.

Some pathological changes may be developmental while others may be acquired (possibly through failure of inhibitory feedback between structures).

Traditionally, interest has focused on monoamine neurotransmitter pathways (serotonin, acetylcholine, nor/adrenalin, dopamine). Recently, glutamatergic function has also been suggested as underpinning bipolar disorder (Kugaya and Sanacora, 2005).

There is interest in intracellular signalling cascades/pathways and neuroplasticity (Manji et al, 2003).

Intracellular signalling pathways are complex and integrated. They allow the cell to receive, process, and respond to information. They are involved in regulating diverse vegetative functions such as mood, appetite and wakefulness, and are therefore likely to be involved in the pathophysiology of bipolar disorder. The G protein-cAMP pathway, protein kinase C (PKC) pathway, and calcium signalling are presently topics of interest.

Neuroplasticity refers to diverse processes by which the brain adapts to a variety of internal and external stimuli, and includes axonal sprouting, synaptogenesis and even neurogenesis. The reduced size of certain brain components in bipolar disorder suggests a failure of neuroplasticity. Abnormalities of glial cell function have been proposed, as these cells play a central role in the release of excitatory glutamate. Elevated glucocorticoid levels (possibly due to stress) have also been identified as potentially important, as these are associated with cell atrophy and vulnerability. Low levels of neuro-protective and neurotrophic factors may be important. Brain derived neurotrophic factor (BDNF) and glycogen synthase kinase–3 (GSK-3) have received particular attention.

Immunological studies

Recently, there has been enormous interest immune system function in the major mental disorders. Immunological disturbance has been demonstrated in bipolar disorder (Altamura et al, 2013). Bipolar disorder depressed phase appears to be tightly linked to elevated levels of soluble interleukin-2 receptor (sIL-2R) (Tsai et al, 2014).

Genetics of bipolar disorder

There is a substantial genetic contribution to bipolar disorder. Studies which report a 1% incidence in the general population, report a 7% incidence in the first-degree relatives of people with bipolar disorder. A monozygotic twin of a bipolar patient has about a 60% risk of developing the disorder (Potash & DePaulo, 2002).

A specific gene for bipolar disorder has not been found and is now unlikely.

“The genetic basis of …bipolar disorder…is likely to be explained by the synergistic interaction of a small number of heterozygous deleterious mutations, rather than the interaction of common variant alleles” (Price and Morris, 2013; Price was a medical student).

BDNF gene
Brain derived neurotropic factor (BDNF) is involved in neural growth, differentiation, synaptic connectivity, and neuronal repair. It is proposed that decreased BDNF expression is an aetiological factor in depression. Several studies have suggested a DNA variant in the vicinity of the BDNF locus confers susceptibility to bipolar disorder (Muller et al, 2006).

Endophenotypes

The process of identifying patient subgroups using biological criteria in the attempt to reduce genetic heterogeneity, and thereby increase the chance of finding genetic risk factors, has been mentioned in the Chapter 7. Endophenotypes being studied in bipolar disorder include, 1) mood disorder with psychotic symptoms, 2) bipolar II disorder, 3) mood disorder with comorbid anxiety symptoms, and 4) mood disorder responsive to lithium therapy.

Epigenetics

As with all branches of psychiatry, there is excitement about the possible role of epigenetics in bipolar disorder. A recent study (Dell'Osso et al, 2014) has confirmed lower BDNF gene promoter methylation in bipolar disorder I compared to major depressive disorder and bipolar disorder II ($p<0.01$).

Cyclothymic disorder

The DSM-5 diagnostic criteria are that over a period of 2 years there have been numerous episodes of hypomanic symptoms and numerous episodes of depressive symptoms. However, during this time it has not been possible to make a diagnosis of major depressive or manic episode.

Thus, cyclothymic disorder is a cyclic mood disorder with symptoms less pronounced than those of bipolar disorder. It was first described in the 19th century (Baethge et al, 2003).

Some authorities view cyclothymic disorder as a personality trait or disorder (cycloid or cyclothymic personality disorder) rather than an episodic disorder. Cycloid or cyclothymic personality disorder does not appear in either the DSM-5 or the ICD-10, but this does not deny the existence of such a condition. Cyclothymic temperament can be quantified using the Temperament Evaluation of Memphis, Pisa, Paris and San Diego (TEMPS) and the Temperament and Character Inventory (TCI). There is evidence that cyclothymic disorder (or cyclothymic personality disorder) is a part of a "spectrum of bipolar disorder" and may predispose to the development of bipolar disorder (Chiaroni et al, 2005).

There is some evidence that among healthy individuals, those with high cyclothymic scores (compared to those with low cyclothymic scores) have significantly larger gray matter volume of the left medial frontal gyrus (MFG) (Hatano et al, 2014).

Some success has been reported the treatment of cyclothymic temperament with mood stabilizers (Manning et al, 2005).

Young mania rating scale (YMRS)

The YMRS (Young et al, 1978) is the most widely used instrument for quantifying mania. An adapted version is presented here. A printable version is freely available at www.cnsforum.com.

Guide for Scoring Items:
The purpose of each item is to rate the severity of that abnormality in the patient. When several keys are given for a particular grade or severity, the presence of only one is required to qualify for that rating.

The keys provided are guides. One can ignore the keys if that is necessary to indicate severity, although this should be the exception rather than the rule.

Scoring between the points given (whole or half points) is possible and encouraged after experience with the scale is acquired. This is particularly useful when severity of a particular item in a patient does not follow the progression indicated by the keys.

1. Elated Mood
    0. Absent
    1. Mildly or possibly increased on questioning
    2. Definite subjective elevation; optimistic, self-confident; cheerful; appropriate content
    3. Elevated, inappropriate to content; humorous
    4. Euphoric; inappropriate laughter; singing

2. Increased Motor Activity-Energy
    0. Absent
    1. Subjectively increased
    2. Animated; gestures increased
    3. Excessive energy; hyperactive at times; restless (can be calmed)
    4. Motor excitement; continuous hyperactivity (cannot be calmed)

3. Sexual Interest
    0. Normal; not increased
    1. Mildly or possibly increased
    2. Definite subjective increase on questioning
    3. Spontaneous sexual content; elaborates on sexual matters; hypersexual by self-report
    4. Overt sexual acts (towards patients, staff, or interviewer)

4. Sleep
    0. Reports no decrease in sleep
    1. Sleeping less than normal amount by up to one hour
    2. Sleeping less than normal by more than one hour
    3. Reports decreased need for sleep
    4. Denies need for sleep

5. Irritability
- 0. Absent
- 2. Subjectively increased
- 4. Irritable at time during interview; recent episodes of anger or annoyance on ward
- 6. Frequently irritable during interview; short, curt throughout
- 8. Hostile, uncooperative; interview impossible

6. Speech (Rate and Amount)
- 0. No increase
- 2. Feels talkative
- 4. Increased rate or amount at time, verbose at times
- 6. Push; consistently increased rate and amount; difficult to interrupt
- 8. Pressured; uninterruptible, continuous speech

7. Language-Thought Disorder
- 0. Normal
- 1. Circumstantial; mild distractibility; quick thoughts
- 2. Distractible, loses goal of thought; changes topics frequently; racing thoughts
- 3. Flight of ideas; tangentiality; difficult to follow; rhyming, echolalia
- 4. Incoherent; communication impossible

8. Content
- 0. Normal
- 2. Questionable plans
- 4. Special project(s); hyper-religious
- 6. Grandiose or paranoid ideas; ideas of reference
- 8. Delusions; hallucinations

9. Disruptive-Aggressive Behaviour
- 0. Absent, cooperative
- 2. Sarcastic; loud at times, guarded
- 4. Demanding; threats on ward
- 6. Threatens interviewer; shouting; interview difficult
- 8. Assaultive; destructive; interview impossible

10. Appearance
- 0. Appropriate dress and grooming
- 1. Minimally unkempt
- 2. Poorly groomed; moderately dishevelled; overdressed
- 3. Dishevelled; partly clothed; garish make-up
- 4. Completely unkempt; decorated; bizarre garb

11. Insight
- 0. Present; admits illness; agrees to need for treatment
- 1. Possibly ill
- 2. Admits behaviour change, but denies illness
- 3. Admits possible change in behaviour, but denies illness

4. Denies any behaviour change

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