



Medical Assessment and Management of Serious Mental Illness in Adults with Intellectual Disability

1. BASIC ASSESSMENT AND MANAGEMENT

1.1. Overview

Psychiatric and behavioral problems are common in persons with intellectual disability. They can develop any neuropsychiatric disorder present in persons of normal intellect. The frequency and type of psychiatric or behavioral disorder varies according to the severity of intellectual disability, as well as a variety of other conditions, including medical problems, environmental changes and life circumstances (See Table 1). Risk factors for psychiatric disorders include older age, seizure disorder and institutional placement. Psychiatric comorbidity is possible with any cause of retardation. The clinical manifestation of specific psychiatric disorders is highly dependent upon the intellectual abilities of the individuals. For instance, the symptoms of post traumatic stress disorder produced by abuse or neglect can be verbalized by individuals with mild or moderate retardation, but this disorder may be expressed through behavioral abnormalities in persons with severe retardation. The clinical approach to a patient with cognitive disability is determined by the patient's intellectual ability, especially communication and memory (1), (2).

Table 1
Percentage of DD/MR with Psychiatric
Diagnosis Based on Severity (3)

MR Severity	% with Diagnosis
Mild	16-33
Moderate	9-32
Severe/Profound	11-37

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1.2. Diagnostic Classification

Persons with mental retardation can develop any single or combination of psychiatric problems defined by the DSM (See Table 2). The DSM diagnostic criteria apply to persons with retardation; however, certain types of problems such as self-injurious behavior are unique to this population (4). In persons of normal intellect, self-injurious behavior is part of other disorders such as depression, obsessive compulsive disorder or borderline personality disorder. Self-injurious behavior is classified under stereotypical behavior for the person with mental retardation and developmental disability (MR/DD). Developmental problems, such as rumination disorder, are not typical for adults; however, adult persons with mental retardation may ruminate (5).

Table 2
SMI in Adult DD/MR* (3)

Diagnosis	%	Published Range %
Schizophrenia	4.4	2-4.4
Mood Disorder	2.2	3.3-4.3
Anxiety	2.2	2.2-5.5
Phobia	4.4	4.4-8.2
Delusional Disorder	1	0-1.1

*Age 16 to 64 from total population

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Many schizophrenic patients with low IQ receive care from the mental retardation system but in actuality, their management ought to resemble that of persons with psychosis, especially negative symptoms, e.g., apathy, emotional blunting, etc. The positioning of the diagnosis of mental retardation in Axis II is a peculiarity of the DSM system (5), (6), (7).

Limited data exist on the natural history, outcome, or comorbidity of psychiatric disorders in persons with mental retardation. Clinical reports indicate some similarities to normal intellect, e.g., depression with comorbid anxiety. Psychosocial treatment modalities that improve outcomes for serious mental illness in the general population may have diminished impact in persons with mental retardation.

The mental status examination is the cornerstone of psychiatric diagnosis in all patients. The mental status examination implies that the patient is capable of reflecting on internal events or states and accurately reports those symptoms to the examiner. Patients with mild mental retardation are capable of reporting complex emotions such as anxiety and depression as well as psychotic symptoms, such as hallucinations or delusions. Patients with severe disability rarely have the intellectual precision to define symptoms. The mental status examination for these individuals is more dependent on direct observation or staff reporting than self-reporting. Clinicians cannot agree on whether persons with severe or profound retardation can experience hallucinations and delusions.

Symptoms of personality disorders may occur in up to 22% of persons with mild retardation but this diagnosis is difficult to confirm in moderately impaired persons (8), (9). The diagnosis has many negative connotations and should be avoided in this group. Clinical features of Cluster B and C disorders are commonly produced by intellectual disability, e.g., impulsivity, emotional lability, etc. Attention deficit disorder occurs in persons with mild and moderate intellectual disability and specific diagnostic criteria can be used for this diagnosis. This disorder is less likely in persons with severe or profound retardation.

Patients with moderate retardation are difficult to characterize as a group and require careful consideration of intellectual abilities. The validity of diagnostic screening instruments, such as the Hamilton Depression Score, and BPRS (Brief Psychiatric Rating Scale), etc., is not established in persons with mental retardation. Although these instruments may provide a valuable framework for assessment, the numbers cannot be translated. Specifically adapted scales such as the DASH-II (Diagnostic Assessment for the Severely Handicapped-II), the ADD (Assessment of Dual Diagnosis), and the Reiss Screen for Maladaptive Behavior are more appropriate for persons with mental retardation (10).

Comorbid mental illness cannot be identified with specific laboratory or imaging studies. Biological markers for mental illness, such as ventriculomegaly with schizophrenia, or abnormalities of the hypothalamic pituitary adrenal axis in depression, are not known to be valid in persons with mental retardation. In the final analysis, the clinician must depend upon their diagnostic skill to assess and treat persons with possible comorbid mental illness.

1.3. Clinical Assessment

Clinical History. A proper clinical assessment begins with a detailed history that defines target symptoms or behaviors (2), (11). The clinician should interview the patient, caregiver, and clinical

staff. The clinician should estimate the patient’s sensory capability and intellectual ability prior to the interview. The use of “yes-no” questions may produce erroneous information from disabled patients who may answer “yes” to please the clinical examiner. The clinician should determine when the patient was previously at baseline and document the progression of symptoms over time. The assessment must consider all medical problems, neurological disorders, and medications. The family should bring the bottles of all medications consumed by the patient along with the names and telephone numbers of treating health professionals (1).

The examining clinician should determine the presence and severity of any sensory impairment to maximize communication with the patient. Significant numbers of community-dwelling persons with intellectual disability have correctable visual and auditory impairment. Simple interventions like eyeglass lens adjustment or removal of cerumen impaction can improve communication (Table 3). Unrecognized medical problems may produce psychiatric symptoms (Table 4), especially conditions that produce pain, e.g., arthritis or delirium, e.g., confusion. In general, a conclusive psychiatric diagnosis should not be assigned until all medical explanations are corrected (12). Seizure patients are more likely to manifest psychiatric or behavioral problems.

The family history is helpful in identifying risk factors for psychosis and mood disorders. The developmental history is helpful in determining the course of the intellectual disability. Static lesions such as birth asphyxia or perinatal infection should produce stable intellectual disability. New onset of intellectual decline suggests some other medical, neurological or psychiatric process such as depression, subdural hematomas, etc. Certain genetic disorders such as fragile X, Down syndrome, or velocardiofacial syndrome, have high rates of mental illness (13).

Table 3

Sensory Deficits in Community DD/MR Over 5 Years ⁽¹⁴⁾
Vision
2/3 – No visual Screening
1/3 – No recent adjustment of glasses
1/2 – Failed Screening
Hearing
1/2 - Cerumen Impaction
9/10 – No hearing Screening
<small>Br. Med. J. 1990;301:1379-81</small>

Table 4

Medical Problems as a Sole Source of Psychiatric Symptom in a Consultation Service For DD/MR
<ul style="list-style-type: none"> • 6.5% - Arthritic Pain • 4.9% - Medical Mania • 4.3% - Medical Depression • 3.8% - Seizures • 1.9% - Delirium
<small>Gen'l. Hosp. Psych. 1997;19:274-80</small>

Mental Status Examination. The mental status examination should be performed in a familiar surrounding after the examiner determines the language, visual and auditory capacity of the patient. The examination environment should be familiar, quiet, and calm – especially for easily distractible individuals. The examination may require several sessions to determine baseline states for an individual (1).

The clinical manifestations of hallucinations and delusions resemble those of intact persons for individuals with mild mental retardation. Individuals with moderate or severe mental retardation may manifest behavioral complications or specific behaviors that suggest that the patient is attending to

internal stimulation, e.g., looking to the side, distraction. Some patients with MR/DD may speak out loud to themselves, e.g., Down's syndrome. These individuals may not be responding to hallucinations but manifesting adaptive behavior. Sensory impairment is a risk for hallucinations in all populations including those with mental retardation (5). Clinical questions about key features should be posed in several different ways to confirm a positive answer and this data should be cross-checked with caregiver accounts.

Behavioral Assessment. The occurrence of new behavioral problems or reoccurrence of old behaviors suggest a change in the clinical condition. The clinician must determine the frequency, duration, and qualitative features of each specific behavior. Staff or family must report significant clinical antecedents and interventions that reduce intensity or frequency. Patients often have several abnormal behaviors that require individual assessment (See Table 5 and 6).

Once there is reasonable certainty that there are no medical explanations for the behaviors or symptoms of concern, an assessment of psychiatric symptoms should be conducted. Individuals with intellectual disabilities are more likely to have behavioral manifestations of psychiatric symptoms when they occur and are less likely to be able to verbalize in a sophisticated way about what they are experiencing. Some assessment tools designed for aiding the identification of psychiatric symptoms in individuals with intellectual disabilities include the DASH-II (Diagnostic Assessment for the Severely Handicapped – II), the ADD (Assessment of Dual Diagnosis), and the REISS Screen. These instruments have taken symptoms for the various diagnostic categories in the DSM and translated them into descriptions of behaviors that have been associated with particular diagnostic categories. This kind of assessment can also help sort out which behaviors are manifestations of a psychiatric disorder and which behaviors are a result of learning. Functional behavioral assessments need to be conducted for the latter when identified (10).

Neurological Exam. The neurological examination should remain stable over time for most persons with mental retardation. Patients with fixed deficits, e.g., hemiparesis, etc., should remain stable or improve slightly over time. Old neurological deficits may sometimes worsen during times of delirium. The onset of new neurological deficits suggests a new problem rather than a progression of old problems, e.g., subdural hematoma. The stability of neurological deficits depends upon the etiology of the mental retardation. The majority of individuals with retardation have static lesions with no progression over time. Language, motor skills, and other neurological functions should remain stable (15).

Laboratory Assessment. A basic laboratory assessment should include electrolytes, blood sugar, thyroid studies, complete blood count, and therapeutic blood levels for medication (2). Any female patient in the child bearing years should have a pregnancy test; regardless of menstrual history. Diagnostic testing should be performed when essential; however, persons with moderate to severe retardation often manifest uncooperative behaviors that require sedation or anesthesia to complete studies. Simple testing such as CT, MRI or EEG may require substantial doses of sedative medications. The value of clinical knowledge obtained by a test must be weighed against the risk of delirium from anesthesia and potential injuries during the procedure.

A complete psychiatric examination requires a complete medical and dental evaluation to exclude medical or dental mimics of psychiatric disorders (16). Published clinical surveys show many MR/DD patients with seizure disorders, infections, pain, and other health problems develop symptoms that mimic psychiatric disorders (See Table 4). Dental disease can produce self-injurious behavior (SIB), weight loss, or agitation (12), (17). A complete psychiatric assessment requires a minimum of one hour for completion. Some individuals may require several hours and consultation with the primary care physician.

Table 5. Challenging Behaviors in Persons with DD/MR (18)
<ul style="list-style-type: none"> • 10-15% - all persons • 50% - living with family • 2/3 – adolescent, young adults • 2/3 – boys or men • Most have two or more behaviors
<small>Res. In Dev Disab. 2001;22:77-93</small>

Table 6. Challenging Behaviors in Persons with DD/MR* (18)	
<u>%</u>	<u>Behavior</u>
9-12	Other
7	Aggression
4	SIB
4-5	Destructive
* Total Population Study	
<small>Res. In Dev. Disab. 2001;22:77-93</small>	

1.4. Clinical Management

Pharmacological Strategies. All therapeutic interventions for persons with MR/DD begin with identification of specific, observable, quantitative signs or symptoms, e.g., sleep disturbance, head-banging, etc. A single medication should be titrated into therapeutic range and maintained for a specific, predetermined length of time, e.g., four to six weeks. Medications that reduce or improve target behaviors or symptoms can be continued. Medications that fail to improve symptoms should be replaced by the next choice. Patients may require trials with several medications before symptom improvement occurs.

Medication blood levels should be performed on any patient for whom compliance may be an issue. Patients with mild or moderate retardation are capable of refusing medications or cheeking either pills or liquids, i.e., holding pills in the mouth and later spitting the medication. The administration of large doses of sedating medicines to patients with no evidence of sedation suggests the possibility of non-compliance. Blood levels can be performed to assess compliance or identify rapid metabolizers. Drug-drug interactions are common in patients with complex pharmacology; sometimes producing clinical changes in person who were previously stable. Female patients should not be started on medication unless the treatment team considers the possibility of unrecognized pregnancy or performs appropriate pregnancy testing.

Behavioral Strategies. Behavior analytic procedures can be included with other treatment modalities for a person who has both a psychiatric diagnosis and intellectual disabilities. Behavioral specialists can determine appropriate training strategies to assist a person with intellectual disabilities to gain better coping skills for dealing with their psychiatric symptoms. Triggers for the symptoms can be

identified and strategies taught to staff, family members, and the individual to prevent escalation of the behavioral symptom. Counseling can be provided, keeping in mind that discussions need to be geared toward the level of understanding of the individual. Most counseling should take the form skill-building and include the chance for positive reinforcement during the learning process. For example, if an individual becomes angry easily due to an impulse control problem, anger management training may be successful when presented in simplistic terms, modeled by the clinician, and practiced repeatedly by the individual in more than one or two sessions. As the person learns the management techniques, positive reinforcement should be delivered to assist with the acquisition and maintenance of the skills.

1.5. Assessment of Therapeutic End Point.

The therapeutic endpoint is often reduction of symptoms as described by the patient and caregiver or as measured by behavioral monitoring. Mildly retarded patients can describe symptoms. The clinician must depend on behavioral symptoms to determine efficacy in severely retarded persons. Minimal behavioral monitoring requires consistent measurements over several days of observation (See Table 7).

Table 7
Methods of Assessing Therapeutic Benefit of Antipsychotic Medications

Severity of Mental Retardation	Self-Reporting	Caregiver Reporting	Behavioral Monitoring
Mild	R	R	H
Moderate	H	R	R
Severe/Profound	U	R	R

R=Required H=Helpful, but not always required U=Unreliable

2. MANAGEMENT OF COMMON PSYCHIATRIC DISORDERS

2.1. Schizophrenia and Psychosis in Persons with MR/DD

The rates of schizophrenia in general adult MR/DD population range between 2-4.4% with some studies demonstrating as high as 6.7% of institutionalized MR/DD persons carrying this diagnosis (See Table 2). Many persons with childhood onset schizophrenia function at the borderline or mild intellectual range and these patients develop cognitive decline over the first three decades of life that is reflected by brain volume loss on Magnetic Resonance Imaging (MRI) test (6), (7). Delusional disorder also occurs with less frequency from 0-1% within the general population (3).

The diagnosis of schizophrenia is more difficult in persons with MR/DD because of limitations on interpretation of psychosocial dysfunction. The distinction of positive and negative symptoms in this population is limited by the patient's intellectual disability. The schizophrenic patient may demonstrate both hallucinations and delusions. In the MR/DD patient, these psychotic symptoms tend to be simpler than those typical of the schizophrenic patient. The classic Schneiderian hallucination, i.e., second and third person auditory hallucinations that speak commands or criticism, may not be present and the delusional systems may be less systematized. The psychotic thought may be less sustained than that present in the typical schizophrenic patient. The paranoia may be less intense and

expressed through refusal to eat or participate in activities. Negative symptoms are difficult to identify in a person who is already functionally challenged. The manifestation of schizophrenia may include behavioral complications including resistiveness, withdrawal, and other disruptive behavioral problems (19), (20), (21).

Studies on dual diagnosis schizophrenia in MR/DD indicate higher risks of soft neurological signs and higher rates of psychotic illness in families. No specific type of retardation is associated with increased risk for schizophrenia; however, many such individuals have comorbid seizure disorder. Outcome studies from the medical treatment of schizophrenia in MR/DD are limited. The diagnosis of schizophrenia should be made with great care in the severe or profoundly retarded patient, as these individuals may have insufficient thought processes to sustain psychosis. Adjunctive diagnostic procedures are generally unhelpful in patients with schizophrenia. CT or MRI rarely produces new information unless a second unassociated neurological problem is suspected.

The symptoms of schizophrenia should be treated when they produce clinical symptoms that distress the patient or diminish the quality of life. Behavioral complications in schizophrenic patient should receive behavioral interventions as the first course of treatment. Abrupt onset behavioral problems are less likely to be caused by schizophrenia. Distressing symptoms or severe behavioral problems require appropriate pharmacotherapy. The atypical antipsychotics are shown to be effective in patients with MR/DD and psychosis. The choice of antipsychotics depends upon the patient, the age, comorbid medical problems, and associated neurological problems. Polypharmacy should be avoided in a patient, except where all other options are exhausted (10), (22). A single agent should be slowly titrated to full therapeutic dose or maximum tolerated dose for the patient. Failure to respond after several months should be managed by cross-titration to a second antipsychotic medication. Following the third trial with a single antipsychotic medication, a further re-evaluation should be considered to exclude the possibility of misdiagnosis, unrecognized medical comorbidity, or under-recognized environmental stressors. Positive symptoms, e.g., hallucinations, usually respond to appropriate doses of antipsychotic medications and the therapeutic goal is amelioration of these symptoms rather than eradication. Negative symptoms respond to newer medications, i.e., second or third generation medications, when administered to intellectually intact patients (5), (23); however, their effectiveness for equivalent symptoms in persons with MR/DD is unclear (See Appendix 1, pg 12).

Benzodiazepine adjunctive therapy should be avoided in the MR/DD patients with schizophrenia unless a clear indication is identified (4). Benzodiazepines can produce paradoxical excitation and worsen behavioral symptoms in these individuals. The manifestation of akathisia or tardive dyskinesia should be managed by cross-titration to a different antipsychotic with less blockade of the dopamine receptor. Anticholinergic agents and benzodiazepines should be avoided in the treatment of patients with extrapyramidal symptoms. Low-dose propranolol can be used to suppress akathisia when necessary (5).

The patient with MR/DD receiving old, first generation antipsychotic medications, e.g., Haldol, Mellaril, for the treatment of schizophrenia should be considered for cross-titration to newer, second or third generation antipsychotics, e.g., risperidone, quetiapine when possible. Non-compliant patients can be treated with sol-tabs, e.g., Risperdal M-tabs or Zyprexa Zydis, or long-acting injectable preparations. Cross-titration from old drugs is indicated because of the high risk of tardive dyskinesia

in the MR/DD population. Patients should be cross-titrated over 3 to 6 months with reduction of the older medication and slow introduction of the new antipsychotic.

Delusional disorders are reported in patients with mental retardation. This difficult diagnosis has little published data to support appropriate therapies. Antipsychotic medications are generally effective in these types of patients. The delusional diagnosis should only be made in patients with sufficient verbal skills to express delusional ideas.

Schizophrenia is a persistent psychotic illness and most patients require long-term therapy. Psychotic symptoms persist into later life and may require lifetime treatment. Medication doses can be reduced as patients become older and frailer. Schizophrenia rarely begins in persons over age 50, even among individuals with mental retardation. The new onset of psychotic symptoms in an older patient suggests dementia, delirium, psychotic depression, or some other new unrecognized psychiatric comorbidity. Psycho-therapy may help the mild MR schizophrenic but frustrate the individual with moderate or severe retardation. Each patient should be treated on a case-by-case basis.

2.2. Mood Disorders

The person with MR/DD can experience any type of mood disorder including depression, mania, bipolar disorder, and dysthymia. The person with MR/DD is at risk for developing depression like all other individuals. The clinical manifestations of mood disorders are dependent upon the type of intellectual disability. Several, specific types of mental retardation are known to produce higher risks of mood disorders including Fragile X, Down syndrome, and velocardiofacial syndrome (13).

Depression. The classic psychological symptoms of depression may be difficult to identify in patients with significant communication problems. Common symptoms include depressed affect, sleep disturbance, and diminished appetite (24), (25). Significant numbers of depressed persons with MR/DD manifest self-injurious behavior, aggression, and psychomotor agitation as symptoms of depression (26). In general, patients with mild mental retardation, have more apparent psychological and neurovegetative symptoms with less behavioral abnormalities; however, patients with severe mental retardation and depression have more behavioral and neurovegetative symptoms with diminished psychological manifestations (See Table 8), (27). Dysthymia is reported in persons with mild to moderate retardation; however, this diagnosis is difficult to confirm in patients with severe retardation who are incapable of describing depressed mood (28). The dysthymic patient often demonstrates excessive anxiety and responds to routine therapy. Depression should be considered in any patient with new onset weight loss, sleep disturbance, or behavioral abnormalities. Persons with mild to moderate mental retardation may develop suicidal behavior. Suicide attempts should be treated with great caution and hospitalization may be required (26).

Symptom	S/P*	M/M*
<i>Psychomotor Agitation</i>	10	6
<i>Screaming</i>	6	0
<i>Stereotypical Behavior</i>	6	0
<i>Weight Loss</i>	6	0
<i>Anxiety</i>	5	6
<i>Delusions</i>	0	2

* S/P=Severe/Profound *M/M=Mild/Moderate
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The standard treatment for depression is antidepressant medications (10), (29). Although SSRIs are highly effective in the treatment of depression, several classes of medications have been identified as useful (See Summary 3). Dosing depends on the patient's size, age, and comorbid medical condition. An adequate trial of a second generation antidepressant medication such as an SSRI should be

followed by a second trial of a second or third generation agent in a patient who fails to respond to the first SSRI. A trial of a third medication could include tricyclic antidepressants. Each medical trial should extend for at least six weeks at adequate therapeutic doses. The monoamine oxidase inhibitor should be avoided in persons with MR/DD because of problems with dietary compliance. Electroconvulsive therapy (ECT) is effective in people with MR/DD and intellectual disability is not a contraindication to treatment for those persons with severe refractory depression. The treatment of psychotic depression involves a combination of antidepressants and atypical antipsychotics. The antipsychotic should be tapered when the patient reaches baseline.

The failure to respond to adequate antidepressant treatment should cause the clinicians to re-assess the psychiatric diagnosis and search for unrecognized medical problems. A careful evaluation of the patient's environment and recent life events is helpful to exclude stress masquerading as depression. Abused or neglected MR/DD persons may withdraw and become apathetic or catastrophic in response to the stressful situation.

The new onset of anxiety, obsessive compulsive, or phobic symptoms may be produced by depression. Although anxiety disorders occur independently within the MR/DD population, they are frequent comorbidities that are improved with treatment for depression.

Psychotherapy may help persons with mild intellectual disability and the combination of both pharmacotherapy and psychotherapy are most effective in normal persons. Similar studies are not available in the depressed MR/DD population (5).

Mania. Isolated mania is uncommon in the MR/DD person; however, bipolar disorder occurs in 1-8% with the likely prevalence of about 1% (3), (30). The clinical symptoms of mania and bipolar affective disorder (BAD) differ according to the severity of MR. Manic symptoms in patients with mild MR may resemble typical mania or BAD in persons with normal intellect; however, persons with moderate or severe MR often have symptoms including excessive motor activity, irritability, sleep disturbance, aggression, or SIB (31). The manic symptoms may be cyclical and often independent of environment. Psychological symptoms like hypervigilance, hypersexuality, increased speed of thought, etc., depend on the patient's cognitive abilities. Differential diagnosis of mania includes delirium, agitated depression, attention-deficit/hyperactivity disorder (ADHD), pain or an anxiety disorder. A family history of BAD increases the risk for mania. The natural history of BAD or mania in the MR population is unclear. Mania can be produced by a variety of medications including antidepressants, steroids, isoniazid and others. The proper evaluation for the new onset of mania must include a careful physical examination, review of medication and exclusion of other syndromes like delirium, agitated depression, or panic disorder (12), (16).

Therapy for mania includes lithium and other mood stabilizers. Lithium therapy is well documented as effective but clinicians must avoid toxicity, like confusion as seen with co-administration of NSAIDs, thiazide diuretics, or ACE inhibitors. Treatment should begin with less toxic, mood-stabilizing medications like valproic acid or carbamazepine (10), (33). These medications should be titrated to anticonvulsant levels. Lithium can be used in patients who fail an adequate clinical trial of anticonvulsants (32). A combination of lithium and anticonvulsant can be used in the rare, therapy-resistant patient.

Acute mania may require combination antipsychotic and mood stabilizer therapy. The new second and third generation antipsychotic medications provide mood stabilization and these medications can be used to control severe symptoms or psychosis (See Appendix 1, pg 12). The old, first generation antipsychotics, e.g., haloperidol, should be avoided in the MR/DD patient with mania to reduce side effects. Benzodiazepines should be used sparingly. Monotherapy management with mood stabilizers is the goal. Valproic acid or carbamazepine have proven efficacy when titrated into the anticonvulsant range. Newer anti-epileptic drugs (AED) like Lamictal may also stabilize mood; however, the studies are not available to confirm their effectiveness.

Specific types of MR are not associated with mania or BAD. Right frontal lobe lesions are more likely to produce mania in normal individuals (5). Mixed states and rapid cycling disease may be difficult to determine. Schizo-affective disorder requires clear evidence of both symptom clusters; however, the diagnostic accuracy for this disorder is low in individuals with moderate or severe mental retardation.

2.3. Anxiety Disorders

Anxiety disorders are common in the MR/DD population and their clinical manifestations depend on the severity of intellectual impairment. Studies show a range of data on frequency (See Table 9) with generalized anxiety disorder (GAD), panic and phobias as the common symptoms. Agoraphobia is common; however, obsessive-compulsive disorder (OCD) also occurs in the MR population (34), (35). Anxiety symptoms are also common in children and adolescents with MR/DD (See Table 9). The higher frequency of anxiety disorders in patients with mild disability may reflect their ability to describe the symptom. A range of other behavioral symptoms may be manifested (See Table 10). Anxiety can be produced by abuse, residential change, loss of caregiver, or experiencing an accident. Anxiety can also occur as a comorbidity to depression and psychosis. Anxiety disorders probably begin in the childhood and early adult years. Late-life anxiety suggests other etiologies like depression or dementia (36).

The presenting symptoms of anxiety depend on the cognitive function of the patient. The patient with mild MR should be able to explain complex internal events like anxiety, while individuals with profound retardation may only manifest behavioral abnormalities like aggression, hostility, insomnia or OCD type symptoms (See Table 10).

TABLE 9
Anxiety Disorder Spectrum in Adult DD/MR (3)

<u>Disorder</u>	<u>% Range</u>
GAD	2.2 - 5.5
Phobia	4.4-8.2
Panic	0-4.4
OCD	0-2.7

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Table 10
Common Presenting Anxiety Symptoms in a DD/MR Clinic Population (35)

- Aggression
- Agitation
- OCD Type Symptoms
- Insomnia

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The clinical assessment for anxiety includes a complete physical exam to identify medical mimics, e.g., medication effect, thyroid disorder, hypoglycemia, seizures, etc. **(12)**. All antipsychotic medications can produce akathisia, which is defined as “an inner sense of restlessness”. Most SSRI medications also produce this syndrome. A complete mental status exam should exclude depression, psychosis, and ADHD. A psychosocial assessment should exclude chaos in the home, abuse, neglect or family conflict **(10), (38)**.

Management of anxiety disorders is based on the intellectual function and type of anxiety disorder. Behavioral and psychological interventions should be considered in all patients. Benzodiazepines should be avoided because these medications can produce confusion, accidents, and paradoxical excitement **(39)**. Underlying psychiatric disorders require specific therapy, e.g., antidepressants for depression. Buspirone can be used up to 60mgm per day to diminish anxiety. This medication requires 4 to 8 weeks for full effect. Antipsychotic medications and sedatives like diphenhydramine, hydroxyzine, etc., are not indicated. Psychotherapy should be customized to the individual but patients with profound retardation rarely benefit from this intervention.

2.4. Other Disorders and Therapy

Persons with MR/DD can manifest most other psychiatric disorders including attention deficit disorder with or without hyperactivity, substance abuse, sleep disorders, personality disorders, paraphilias, and others. The assessment and management of these disorders requires adjustment of therapeutic strategies similar to that for other common serious mental illnesses.

Other medications have been studied in persons with mental retardation. Psychostimulants are helpful in reducing the intensity of impulsive behavior in some patients with mental retardation or autism **(40), (41), (42)**. Acetylcholinesterase inhibitors have been used to enhance cognition in some individuals although presently available medications rarely enhance intellectual function. Diet, vitamins, and other supplements are not proven to enhance cognitive function **(43)**.

APPENDIX 1

Commonly Prescribed Dosing Ranges of Antipsychotic Medications for the Adults with MR/DD

Drug	Healthy/Adult Daily Dose Range	Frail or Elderly Daily Dose Range	Major Advisory See PDR for Complete Details
1st Generation Medications			
Chlorpromazine	25-1000mg	10-500mg	Anticholinergic Side Effects
Thioridazine	25-500mg	10-250mg	Blackbox Cardiac Warning
Haloperidol	1.0-30mg	0.5-5.0mg	High Potential for EPS/TD
Fluphenazine	1-20mg	1-5mg	High Potential for EPS/TD
2nd Generation Medications			
Clozapine	100-600mg	25-300mg	Black Box for Agranulocytosis
Risperidone	1-6mg	0.25-2.0mg	Dose-related EPS
Olanzapine	5-20mg	2.5-10mg	Sedation and Metabolic Issues
Quetiapine	25-800mg	25-200mg	Sedation and Hypotension Possible
Ziprasidone	20-160mg	20-80mg	Cardiac Warning
3rd Generation Medications			
Aripiprazole	5-30mg	5-20mg	Akathesia and/or withdrawal Dyskinesia Possible

ABBREVIATIONS: EPS – Extrapyramidal Symptoms TD- Tardive Dyskinesia

These ranges are not prescriptive guidance and clinicians must individualize doses for each patient. Consult a child psychiatrist for treatment of children or adolescents. See PDR for complete information.

Most antipsychotic medications reach steady state after one week; however, their antipsychotic effect may require 4-6 weeks. Most immediate beneficial effect from neuroleptic medications is derived from sedation. Younger, healthy patients may require the full recommended dose for adults while elderly or frail patients may require 1/4 to 1/2 the total dose. The physician should avoid “loading doses” that may produce sedation.

APPENDIX 2

Commonly Used Dose Ranges of Injectable, Long-Acting Preparations (Depot Preparations) of Antipsychotic Medications for the Adult Patient with MR/DD (Dosing Range in Milligrams- Given Every 2 Weeks)

Intramuscular Medication	IM Dose Range for Frail/Elderly (mg)	IM Dose Range for Healthy (mg)
Haldol (haloperidol decanoate) <i>every two weeks</i>	12.5 to 25	12.5 to 75
Perphenazine (Prolixin decanoate) <i>every two weeks</i>	2.5 to 25	12.5 to 50
Risperdal Consta <i>every two weeks</i>	25	25 to 37.5

Dose frequency, i.e., duration between injections, can be titrated to every three or four weeks. These values are common dose ranges. Each patient should be individually assessed and dosing adjusted to that individual's clinical circumstances. All IM dosing is individualized. Consult with a child psychiatrist for children and adolescents.

APPENDIX 3

Commonly Prescribed Dosing Ranges of Antidepressant Medications for the Adult Patient with MR/DD

Drug	Young/Healthy (Daily Dose Range)	Frail/Elderly (Daily Dose Range)	Comments (See PDR)
1st Generation (TCA's)			
Nortriptyline	25-150mg	10-100mg	Therapeutic Blood Level (50-150ng/ml)
2nd Generation (SSRI's)			
Fluoxetine	10-80mg	5-40mg	Generic Available. May be Activating
Paroxetine	10-60mg	5-30mg	Generic Available. Anticholinergic
Sertraline	50-200mg	25-200mg	GI Side Effects. Take With Food
Citalopram	20-60mg	10-20mg	Few Significant Drug Interactions
Escitalopram	10-30mg	5-20mg	Few Significant Drug Interactions
3rd Generation (SNRI's, Others)			
Bupropion	75-450mg	75-300mg	Use Caution With Seizure Disorders
Mirtazapine	15-45mg	7.5-45mg	Weight Gain/Sedate at Lower Doses (<30)
Trazodone	50-300mg	25-150mg	Monitor Priapism and Orthostasis
Venlafaxine	75-375mg	25-225	Monitor for Hypertension
Duloxetine	40-60mg	20-40mg	Dual Re-uptake Inhibitor, All Doses

This table contains dose ranges of antidepressant medications that are commonly prescribed for persons with MR/DD. Each patient requires careful assessment and individualized prescription based on medical and psychiatric features. This information **is not** a prescriptive guideline. Consult a child psychiatrist for pharmacology in children and adolescents.

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