ACCOMMODATING THE FETAL ALCOHOL SPECTRUM DISORDERS
IN THE DIAGNOSTIC AND STATISTICAL MANUAL OF
MENTAL DISORDERS (DSM V)

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ABSTRACT

The umbrella term Fetal Alcohol Spectrum Disorder embraces several mental and behavioral manifestations of prenatal alcohol exposure as its etiology. There is sufficient reason to involve a classification system like the Diagnostic and Statistical Manual of Mental Disorders (DSM) in spite of technical and procedural difficulties. The significance of this inclusion would not only make the advantages of classification visible for clinical and research utility, it could shape the future of the DSM in adopting an etiology based classification system.

The world wide prevalence of alcohol use in pregnancy, a requirement for the current diagnostic characterization of Fetal Alcohol Spectrum Disorder (FASD), varies between 2% to 25%.1,2 These varied rates depend on the level of use of alcohol such as binge drinking (more than five drinks on one occasion) as compared to frequent use (more than seven drinks a week), occasional use, the population studied and the setting of the study.1,2,3,4 These rates may not be totally reflective of the indicators of the progressive incidence of FASD, despite its preventability and current efforts on public education. The composite estimates of binge drinking in the non pregnant child bearing women (20%), drinking at any time during pregnancy (14-25%), alcohol use throughout pregnancy (5-9%), alcohol exposure to the newborn in early pregnancy (25%), and the unplanned pregnancy rates (50%) coupled with the increasing alcohol use among women in the context of their changing social status are more reliable indicators.

According to the World Health Organization (WHO), in recognition of this global health problem, alcohol use among women is rising progressively in many countries due to changing gender roles.8 The need for a viable diagnostic framework is thus premised not only for identification and prevention but on the realization of the implications of these pointers to increased prevalence of FASD.

Development of a Diagnostic System for FASD

The term Fetal Alcohol Spectrum Disorder is not a diagnosis but an umbrella terminology adopted to reflect the wide range of affectionation and manifestations in individuals prenatally exposed to alcohol.9 The term implies physical, mental, behavioural and learning disabilities with lifelong implications.7,9,10 Its effect is not limited to the individual but affects the mother, the family and the community.9,10 Since the description of the prototype disorder, Fetal Alcohol Syndrome in 1973,11 sub syndromal forms, various differentials and difficult to identify variants of the syndrome have prompted the revision of the various diagnostic classifications.

The term Fetal Alcohol Effects (FAE)10,12 referred to other forms of the manifestations without the full accompaniment of the prototype Fetal Alcohol Syndrome. FAE was meant for those patients who did not have the full characteristics of FAS including the facial dysmorphology or for those who only possess the partial manifestations usually the central nervous systems effects. The usage of the term, Fetal Alcohol Effects was broad and its definition, vague. It originated from the term, Suspected Fetal Alcohol Effects.13,14 This all-encompassing term soon fell out of favour due to its lack of specificity.10,14 The Institute of Medicine (IOM) attempted to resolve the difficulty by introducing the Institute of Medicine Classification System in 1996.15
TABLE 1 Institute of Medicine (IOM) Diagnostic Criteria for FAS and Alcohol Related Effects

<table>
<thead>
<tr>
<th>Category</th>
<th>Terminology</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FAS with confirmed maternal alcohol exposure</td>
</tr>
<tr>
<td>2</td>
<td>FAS without confirmed maternal alcohol exposure</td>
</tr>
<tr>
<td>3</td>
<td>Partial FAS with confirmed maternal alcohol exposure</td>
</tr>
<tr>
<td>4</td>
<td>Alcohol related birth defects (ARBD)</td>
</tr>
<tr>
<td>5</td>
<td>Alcohol related neurodevelopmental disorder (ARND)</td>
</tr>
</tbody>
</table>

A five-category taxonomy to describe the spectrum of prenatal alcohol effects on the offspring was then suggested. It recognized the other alcohol related problems and introduced the terminologies Alcohol Related Birth Defects (ARBD) alcohol Related Neurodevelopmental Disorder (ARND). (Table 1) This classification has been revised with minor adjustment and is still in use either singly or in conjunction with the four digit diagnostic code.9,14

The four digit diagnostic code originally formulated in 1997 aimed to address some diagnostic limitations.14 It has been revised employing a grading approach to four areas contributing to the final diagnosis in each individual. Each of the four areas (brain, face, growth retardation and alcohol exposure) is scored on a scale 1 - 4. A score of 4 signifies definitive presence of the criterion, while a score of one is given when the criterion is absent. (Table 2)

TABLE 2 4-Digit Diagnostic Code Criteria for FASD

<table>
<thead>
<tr>
<th>Rank</th>
<th>Growth Deficiency</th>
<th>FAS Facial Phenotype</th>
<th>CNS Damage or Dysfunction</th>
<th>Gestational Exposure to Alcohol</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Significant</td>
<td>Severe</td>
<td>Definite</td>
<td>High Risk</td>
</tr>
<tr>
<td></td>
<td>Height and weight</td>
<td>All 3 features:</td>
<td>Structural or neurological evidence</td>
<td>Confirmed exposure to high levels</td>
</tr>
<tr>
<td></td>
<td>below 3rd</td>
<td>PFL 2 or more SDs</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>percentile</td>
<td>below mean</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Thin Lip: rank 4 or 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Smooth Philtrum:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>rank 4 or 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Probable</td>
<td>Some Risk</td>
</tr>
<tr>
<td></td>
<td>Height and weight</td>
<td>Generally 2 of the 3 features</td>
<td>significant dysfunction across 3 or more domains</td>
<td>Confirmed exposure. Level of exposure unknown or less than rank 4</td>
</tr>
<tr>
<td></td>
<td>below 10th</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>percentile</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Mild</td>
<td>Mild</td>
<td>Possible</td>
<td>Unknown</td>
</tr>
<tr>
<td></td>
<td>Height or weight</td>
<td>Generally 2 of the 3 features</td>
<td>Evidence of dysfunction, but less than rank 3</td>
<td>Exposure not confirmed present or absent</td>
</tr>
<tr>
<td></td>
<td>below 10th</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>percentile</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>None</td>
<td>Absent</td>
<td>Unlikely</td>
<td>No risk</td>
</tr>
<tr>
<td></td>
<td>Height and weight</td>
<td>None of the 3 features</td>
<td>no structural, neurologic or functional evidence or impairment</td>
<td>Confirmed absence of exposure from conception to birth</td>
</tr>
<tr>
<td></td>
<td>at or above 10th</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>percentile</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

PFL – palpebral fissure length
SD – standard deviation
This scoring system therefore, yields 256 possible diagnoses from codes 1111 to 4444 and various combinations thereof. For ease of applicability and clinical utility, the authors of the 4 Digit Diagnostic Code have further reclassified the potential diagnoses into 22 categories (A-V). Each category comprises a number of similar manifestations represented by various diagnosis and prenatal alcohol exposure, for example, sentinel physical findings - alcohol exposed; static encephalopathy - alcohol exposure unknown; fetal alcohol syndrome - alcohol exposed; and neurobehavior disorder - no alcohol exposure.

Physicians and researchers use the two major systems of classification (Institute of Medicine and the 4 Digit Diagnostic Codes). They have wide applicability in children as well as adults. Amalgamated and found to conform to each other, reasonably well, there are suggestions for the combined use of these two classification systems as a consensus in the Canadian guidelines for diagnosis of FASD.

The limitations of use of these systems include not obtaining complete prenatal alcohol history, appropriate age of a valid cognitive assessment, determined as age six years, and preference for a specified period of development for diagnosis being age two to eleven. These are further complicated in adult cases especially when other cerebral insults such as solvent abuse, infections and trauma have occurred. The exclusion of other biological syndromes and the frequently occurring co-morbid conditions in FASD also compound the diagnostic process. A perfect "diagnostic system" is therefore, not yet available. Consequently, guidelines have been proposed to enhance consensus in the process and outcome of diagnostic formulations of FASD. Recent advances in diagnostic procedures employ the assay of free fatty acid ethyl esters (FAEE) in the meconium of newborns exposed prenatally to alcohol as a highly sensitive (100%) and specific (98.4%) test. Although reports indicate that this is a more reliable and valid diagnostic test, its strength lies mainly in identification and screening. Even that is bedevilled by certain ethical considerations and concerns.

Experts have recently proposed the use of the saccadic eye movement analysis as a technique for refining the FASD diagnosis. Control of saccadic eye movement depends on the integrity of a network of brain areas that include the frontal, parietal and subcortical brain areas. The considerable overlap in brain areas that FASD affects and those areas involved in controlling eye movements, suggests that FASD patients will have specific eye movement abnormalities. This test is being explored in a group of young FASD sufferers with promising results.

However, the test has its limitations, in particular those regarding specificity, reproducibility and generalizability given the age group of subjects used to study its effects.

The Brain in FASD Diagnosis

Longitudinal studies of individuals prenatally exposed to alcohol and diagnosed with Fetal Alcohol Syndrome and Fetal Alcohol Effects revealed the predominance of secondary disabilities. These consequences emanate from the direct primary disabilities brought on by the alcohol effects on the brain. The mental health affectations and manifestations resulting from these disabilities are the most prevalent consequences of having Fetal Alcohol Spectrum Disorders (90%). The initial introduction of the diagnostic category FAE and the inclusion of the brain category in the 4 Digit Code, point to the relevance of psychiatric consequences of prenatal alcohol exposure. In a study of FAE and FAS patients, the poor prognosis of the FAE group was explained on the lack of visibility of the brain disorder, thus the effects of the prenatal exposure of alcohol to the brain are the most significant manifestation over its effects on other organs. However, it is surprising that despite this loading on the "brain factor" the psychiatric nosology, only acknowledged and incorporated FAS as a cause of mental retardation briefly in to the DSM III and removed it in DSM IIIIR, and thus, does not currently contain FASD diagnosis in its content. Instead the psychiatric community has grappled with the disorder for years without a system of identifying and formally researching the psychiatric morbidity of prenatal alcohol exposure. The history of the development of the diagnostic nosology especially the DSM and other constraints best account for this state of affairs. Although the avoidance of multi stigma may have
contributed to this apparent exclusion, the later identification and description of the disorder in 1973 compared to other psychiatric disorders identified earlier further explains the delay of incorporating FASD in the psychiatric diagnostic systems.

**Understanding the Exclusion of FASD from the Diagnostic Nosology in Psychiatry**

The international classification of disease ICD 9CM has a category incorporating FASD. The medical condition section, Code 760.7 is labelled -Noxious Influences affecting the fetus or newborn. The subcategory 760.71 refers to Fetal Alcohol Syndrome. The Diagnostic and Statistical Manual of Mental Disorder whose progressive development and time table for its latest edition (DSM V) is identified in Table 3 does not have such a category. Over the course of the development of the classification systems for mental disorders, the need for refinement of criteria and worldwide applicability across cultures has taken centre stage. The two major systems despite collaboration, ICD of the WHO and the DSM of the American Psychiatric Association (APA), are far from being unified. The timetable shown in Table 3 is an evolving process with the goal to stimulate empirical research in advance of the formal revision of the DSM and to develop alternative research criteria for investigations into etiology and pathophysiology of disorders.

**TABLE 3** Timelines in the Development of DSM V

<table>
<thead>
<tr>
<th>Year</th>
<th>Edition</th>
<th>Comments</th>
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<tbody>
<tr>
<td>1952</td>
<td>DSM I</td>
<td>Theoretically based on psychoanalytic ideas</td>
</tr>
<tr>
<td>1968</td>
<td>DSM II</td>
<td>Psychoanalysis combined with Kraepelian ideas</td>
</tr>
<tr>
<td>1980</td>
<td>DSM III</td>
<td>Introduction of exclusion/inclusion diagnostic criteria, &amp; Atheoretical medical model</td>
</tr>
<tr>
<td>1987</td>
<td>DSM III R</td>
<td>Further identification &amp; categorization of multiaxial classification</td>
</tr>
<tr>
<td>1994</td>
<td>DSM IV</td>
<td>Coordination with WHO ICD</td>
</tr>
<tr>
<td>2000</td>
<td>DSM IV TR</td>
<td>Further collaboration with ICD</td>
</tr>
<tr>
<td>2000 - 2002</td>
<td>Research Agenda for DSM V</td>
<td>Produced various white papers on diagnostic considerations</td>
</tr>
<tr>
<td>2004 - 2007</td>
<td>Research Conferences</td>
<td>Current phase relevant to FASD</td>
</tr>
<tr>
<td>2007 - 2011</td>
<td>DSM V Task Force</td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>DSM V Publication</td>
<td></td>
</tr>
</tbody>
</table>

When the DSM I was published in 1952, there were about 106 different disorders. The DSM I and II bore a theoretical framework based on psychodynamic influences and underpinnings with disorders existing on a continuum. The medical model was introduced into the DSM III with exclusion/inclusion criteria determining the threshold concept of ‘normal/abnormal’. DSM III was accepted as an atheoretical diagnostic system to encompass and compromise for all theoretical fields. In that context, the pursuit for the etiology of mental disorders in the classification system was lost and relegated to the background.

Following the DSM III, further editions (DSM IIIR and DSM IV) focussed on refining the categories in order to enhance diagnostic reliability, and validity. This enhancement has not diminished the level of criticism and dissatisfaction with the current system. The DSM however, is the official US nomenclature. There is an ongoing quest to improve on psychiatric diagnostic classification systems specifically the search for new approaches to understanding the etiological and pathophysiological mechanisms that can improve the validity of diagnosis, which foster the achievement of preventive and therapeutic goals.
Whereas prior nosologic research had concentrated on the reliability of diagnostic criteria, the next challenge will be to study the validity of disorders limited to pathophysiologic considerations.

The discussions around etiology and pathophysiology are now topical in the development of the DSM V. The use of receptor abnormalities to inform the diagnostic categorization, an example of this concept, was suggested as far back as 1990. This suggestion, coupled with advancement in neuro-imaging, elucidating the human genome, other medical and technology research fields, has the potential for the incorporation of etiological and pathological basis of psychiatric classification.

Why the DSM V?
In line with the timetable for the development of the DSM V (Table 3), it is reasonable to include at this period of research conferences (2004 - 2007), the development and advancement of knowledge in the Fetal Alcohol Spectrum Disorder literature to reflect the research agenda for the DSM V. The inquiry about etiology and pathophysiology is widespread from immunology, human genetics, and interactions with the environment, neuro receptor mapping and endocrinological perspectives. The known aspects of brain disorders resulting from alcohol exposure, structurally and at the neural molecular level logically fit into this current conceptualization. The exploration of the mechanism of the impact of alcohol in causing brain damage continues apace.

The knowledge of the pathogenetic consequences of alcohol in causing central nervous system damage is useable as a springboard to understanding other manifestations of mental illnesses especially those related to the secondary disabilities of Fetal Alcohol Spectrum Disorder. These mechanisms include the direct toxic effect of alcohol on neuronal cell death, apoptosis, the impairment of glucose and amino acid transportation, the dysregulation of cell migration, inhibition of nerve growth factor, disruption of neurotransmitters, reduced oxidative stress and the reduced proliferation of glia cells.

Knowledge about Fetal Alcohol Spectrum Disorder has increased in the last decade. Training of medical practitioners and psychiatrists specifically in assessment and diagnosis of FASD was non-existent before the last decade. Professional knowledge of and attitude in these disorders is, according to estimates, low. In a knowledge, attitude and practice survey among health professionals including over 800 psychiatrists, up to 50% did not diagnose Fetal Alcohol Spectrum Disorder because of lack of training and up to 40% of professionals did not know what the FASD features are. Psychiatrists' skills in conducting comprehensive assessments, management of co-morbidity and applying the bio-psychosocial approach to treatment seem well suited for patients with FASD. When this knowledge is combined with the minimal training required for the 'medical' and facial measurement component of the FASD diagnostic process, the role of the psychiatrist is enhanced in dealing with not only the mental health symptoms but also the global presentation of FASD sufferers. As such, the DSM V is a logical system fit for the diagnosis of FASD patients. Indeed, Psychiatrists under various diagnostic rubrics already attend to these patients. Estimates indicate that 90% of patients suffering from Fetal Alcohol Spectrum Disorder have mental health problems. The argument against diagnosis in the context of stigmatization and labelling has plagued Psychiatry for a long time. This needs to be balanced against the benefit of diagnosis. In the case of the Fetal Alcohol Spectrum Disorder, advantages of the formal diagnosis include the ease of communication, prognostication, early intervention and prevention. Understanding behavior is critical in attending to these patients' needs and deficits. Furthermore, access to services and resources with the implications of court diversion and reduction of stigma are added advantages. These, in the context of more consistent diagnosis which increases validity, clinical utility and the setting of appropriate realistic goals for management, contribute to the cost saving arising from preventative endeavours.

Accordingly, the DSM is the propitious and suitable medium to embrace FASD diagnoses. This is so, considering the involvement of a high proportion of FASD patients receiving mental health services, the advantages of DSM diagnostic system and the pathogenetic basis of FASD contributing to the advancement of the evolving and dynamic nature of psychiatric
nosology. The findings of comorbid psychiatric conditions in studies of patients with FASD give significance to this assertion.

**Psychiatric Comorbidity in FASD**

As the brain is the most vulnerable organ to prenatal alcohol influences, the etiology and pathophysiology of FASD is based on alcohol related brain pathologies affecting specific domains of neuropsychological and neuromotor functions. These produce measurable and observable cognitive and behavioural manifestations which can be classified as psychiatric diagnoses. In a review of the literature on FASD and Attention deficit hyperactivity disorder (ADHD), O’Malley and Nanson characterised five hypotheses regarding the link between the two. In addition to various other diagnoses (Conduct disorder, Oppositional defiant disorder, Pervasive developmental disorder, Tourette’s disorder, Obsessive Compulsive disorder, etc.,) known to be common in FASD, they suggested a strong association between FASD and ADHD based on animal studies and the morphological changes in different human brain parts.

In a follow up study of 22 children born to alcoholic mothers into their adolescence, a continuation of neuropsychological problems was noted. These included hyperactivity, impulsiveness, distractibility, temper tantrums, short memory spans, concentration difficulties, perseveration, perceptual disorders and specific learning difficulties. Child and adolescent psychiatric disorders have been described in FASD, with ADHD, Autism, Tourette’s disorder and Obsessive compulsive disorder being the common ones. In another study involving preschool, early and late school age children, an excess of psychopathology (including hyperkinetic disorders, emotional disorders, sleep disorders, and abnormal habit and stereotypies) with a strong persistence over time was found.

Prior studies of psychiatric diagnosis have yielded significant morbidity amongst Fetal Alcohol Spectrum Disorder adult patients, with 92% of those studied using the Structured Clinical Interview for DSM IV Axis I disorders having an Axis I diagnosis while 48% had an Axis II diagnosis using the Structured Clinical Interview for DSM III-R Personality disorder. Virtually all possible subcategories of DSM diagnoses were recognised. The authors concluded that with such a finding of a high risk of psychological conditions in these adults, their study suggests that adults with FASD suffer substantial mental illness. Thus, buttressing the line of thinking that gestational brain injury is associated with the development of psychiatric symptoms and disorders.

A recent longitudinal cohort study with 400 alcohol-exposed adult offspring classified by the alcohol bingeing status of the pregnant mothers revealed a high odds ratio for several psychiatric diagnoses in the exposed. Nineteen of 23 possible diagnoses yielded odd ratios above one in the subjects exposed to binge drinking. These exposed individuals were mostly diagnosed with Axis I substance dependence and abuse, depression, Axis II passive aggressive, and antisocial personality disorder. They were diagnosed in the order of more than two odd ratios over the non exposed individuals. The authors concluded that clinicians should consider the possibility of prenatal alcohol etiology in assessing these specific disorders. They felt that by controlling for competing hypotheses in such a population based epidemiological prospective study, causality could be inferred. If so, the DSM holds a place for the further advancement of psychiatric nosology based on pathogenesis and for the diagnostic conceptualization of FASD patients.

**Possible Diagnostic Categories under the DSM V**

There are now a number of studies indicating the predominance of Axes I and II DSM IV diagnoses in child, adolescent as well as adult patients with FASD. The behavioural manifestations of impulsivity, poor problem solving, poor judgement, poor school performance, immaturity, impaired interpersonal relationship domains are premised on the cognitive abnormalities known as primary disabilities. These primary cognitive impairments involve problems of intelligence, memory, abstract reasoning and adaptive functioning. These identifiable and quantifiable behaviours and cognitive domains are among the features expected to be included in the diagnostic criteria for diagnosis in line with a syndromal
model. The specific codes and criteria will emerge after the summits of the Research Agenda conferences (Table 2). Field trials are expected on the devised criteria afterwards. Although the etiological conceptualization of diagnosis based on the pathogenesis of FASD is appealing for use in future psychiatric classification, the neuropsychiatric morbidity of FASD is multifactorial. The influences of other prenatal, perinatal and postnatal factors, of both organic and environmental components have been well recognised. Hence, specific diagnostic rubric is required for these varied and multi morbid conditions.

The following categories (the first two being new and the rest four already part of DSM IV-TR) are suggestions for research, field trials and subsequent DSM V diagnoses:

1. **Behavioral Disorder due to Prenatal Alcohol Exposure**
   In the spirit of the unification of the DSM and the ICD, this rubric was suggested as a logical first step given the ICD term in Code 760.7. This recognizes the behavioral or mental manifestations of Fetal Alcohol Spectrum Disorder and gives the prenatal alcohol exposure its etiological relevance. This category will resemble the noxious influences affecting the fetus or newborn of the ICD9 CM Code 760.7. The specific and varied conditions under this group will depend on the pattern of presentation and the significance of the constellation of various symptoms. Thus highlighting the etiological and pathogenetic basis of classification. This new designation is out of line with the DSM system of terminology but closely reflects the term ‘fetal alcohol related disorders’ suggested by the Task force on FAS/FAE as a possible DSM category.

2. **Cognitive Behavioural Disorder**
   This category proposed by the task force on FAS/FAE is seen to be encompassing of the manifestations described above. In using this rubric, the suspected or definitive etiology will be invoked, for instance due to prenatal alcohol exposure. Its use will also extend to other etiologically based cognitive behavioural disorders similar to applications used in mental retardation of heterogeneous causes.

3. **Alcohol Induced Disorders** (DSM IV-TR: 291.2, 291.1)
   The DSM IV-TR recognizes two conditions related to the effect of alcohol on the brain under Alcohol Induced Disorders, specifically; the Alcohol Induced Persisting Amnestic Disorder and the Alcohol Induced Persisting Dementia. The cognitive deficits that form the major criteria are known to be related to the influence of the substances. In this case, alcohol's influence in the developing brain is the cause of the dementia or the amnestic disorder. The current category recognizes that the disorder has an insidious onset, rare before the age of twenty and with deficits that are permanent. This category may be too circumscribed and will need to be expanded and combined with others proposed below.

4. **Disorders usually Diagnosed in Infancy, Childhood or Adolescence** (DSM IV-TR: 315.00, 315.1, 315.2, 315.9)
   Specifically, learning disorders (reading, mathematics, disorders of written expression and learning disorder NOS) and communication disorders. These childhood disorders recognize the presence of a general medical condition, coded, on Axis III of the DSM. The knowledge that those affected with FASD manifest such disorders makes their inclusion under this rubric plausible. In this case the reading disorders will be because of the prenatal alcohol exposure so will the other disorders so labelled. To be comprehensive, this proposed category may have to be combined with other categories for instance mental retardation and verified through further research endeavours.

5. **Personality Change due to a General Medical Condition** (DSM IV-TR: 310.1)
   The effects of the alcohol, albeit prenatally, does affect the personality. The executive dysfunction and other behavioral difficulties that result are good enough for the rubric of personality change due to a general medical condition. The general medical condition in this regard would be, in some cases due to the static encephalopathy that results from the prenatal alcohol exposure. Given the various postnatal factors that contribute to brain damage and medical differential diagnosis of FASD, other general medical conditions will be entertained in using this category.
6. **Mental Retardation** (DSM IV-TR: 317, 318.0)

Many FASD patients have IQ’s that fall within the mental retardation range (IQ < 70). Although there is a discrepancy in the verbal /performance IQ, the effect on function is the norm even when IQ is above 70. Patients who fall below the IQ of 70 will easily be classified as having mental retardation should they manifest the other functional disabilities. The difficulty with this category lies in classifying those who score a higher IQ and yet suffer with the behavioral disorders of alcohol exposure.

The above possible diagnostic groupings are possible first steps to clarifying the appurtenant place of FASD in the DSM V. The advantage of each and their limitations will be elucidated through further research. The stages of the development of the DSM V if appropriately utilized could inspire research conferences that would inform the best efforts for the incorporation of FASD. Failing this, incorporating the FASD diagnostic labels under the criteria sets for further study in the appendix of the DSM V would be a natural next step. This would not only inform the appropriate classification of the mental disorders of FASD in the DSM document, but it would mark a significant step in elaborating and reinforcing the etiological and pathogenetic components in psychiatric diagnostic classifications. It would also be a point of unification between the systems of the ICD and the DSM given the ongoing efforts at increased validation and unification of psychiatric classification systems.

**RECOMMENDATIONS**

The process of inclusion of FASD in the DSM V is making strides, given the progress by various organizations that led to the endorsement of the proposal by the APA assembly. The submission to the board of Trustees of the APA will finalise the recognition of FASD. To adequately prepare for a smooth launch, it is recommended that:

1. Psychiatrists and other mental health professionals are particularly stimulated to discuss the ramification of FASD in the DSM V through special educational sessions such as the APA Annual meeting.

2. In accordance to the DSM V timelines, specific DSM V research planning process conferences on the incorporation of FASD into the DSM V culminate into a DSM workgroup. This workgroup is to be charged with ensuring research stimulation and collaboration between researchers and clinicians to come up with the most fitting DSM FASD diagnostic system.

3. Field trials of the new diagnostic criteria based on the current research should be promptly started worldwide and in multiple centers (2007 - 2011).

4. Introduce the rubric ‘Fetal Alcohol related disorders’, similar to the ICD Code 760.71, in the DSM V.

5. Incorporate the various ‘unfit’ disorders of FASD under the criteria set and Axis' for further study in DSM V appendix.

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