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Rethinking of autism spectrum disorder: A critique reflections on DSM-V and developing a new classification model

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Abstract
Autism spectrum disorder ASD first appeared in DSM-V issued by APA (2013) as a single entity and diagnosis instead of four distinct entities and diagnoses. It appeared as an output of a fusion process without a theoretical framework to be an alternative for all four types of the previously so-called autism spectrum disorders ASDs. A complex and reformulated version of DSM-IV autism diagnostic criteria is used with some sort of confusion to diagnose the new fused type of ASDs known as ASD. All these types or disorders physically and diagnostically disappeared from the manual despite their distinct existence in reality. Asperger was also fused with them despite its different and distinct nature and features that are not subjected to such fusion process. It seems that the implementation of DSM-5 ASD may cause more negative results than provides positive influences. A new classification model was developed as a better alternative for precise diagnosis of all types of ASDs, and guiding in developing suitable and individualized intervention programs for children with any type of these disorders, hopefully to modify their behavior.

Keywords: Autism spectrum disorder, DSM-V reflections, new classification model

Introduction
Autism appeared in DSM-III (1980) for the first time, and has been studied for many decades. In DSM-IV (1994) [2] childhood disintegrative disorder CDD, pervasive developmental disorders PDDs, and pervasive developmental disorder not-otherwise specified PDD-NOS were introduced. Autism, Asperger disorder AS, CDD, PDD-NOS and Rett`s disorder were known as autism spectrum disorders ASDs (Galanopoulos *et al*., 2016; Mohammed, 2014; Mohammed& Eisa, 2014) [6, 8, 11]. Every type of these disorders had its distinct existence, diagnosis and features. In 2007, the American Psychiatric Association formed a work group on neurodevelopmental disorders to review DSM-IV PDDs and to develop a new definition and diagnostic criteria or to replace the PDDs in DSM-V. After spending nearly 2,500 hours at in-person meetings and 3,500 hours on teleconferences, the work group concluded that there was sufficient evidence to replace the term "PDDs" with "ASD" and to subsume AS, CDD, and PDD-NOS into the overarching category of ASD. But this single category as seen by Mohammed (2022) [10] was fraught with confusion.
On the other hand, Rett`s disorder disappeared in DSM-V (2013) because of the determination of the gene responsible for it. The other four types of ASDs also known as autism spectrum disorders ASDs (Galanopoulos *et al*., 2016; Mohammed, 2014; Mohammed& Eisa, 2014) [6, 8, 11]. Every one of these types had its distinct existence, diagnosis and features.
Autism has been studied for many decades. In 2007, the American Psychiatric Association APA formed a work group on neurodevelopmental disorders to review DSM-IV PDDs and to develop a new definition and diagnostic criteria to replace the PDDs in DSM-5. After spending nearly 2,500 hours at in-person meetings and 3,500 hours on teleconferences, the work group concluded that there was sufficient evidence to replace the term "PDDs" with "Autism Spectrum Disorder (ASD)" and to subsume Asperger's disorder, childhood disintegrative disorder (CDD), and PDDNOS into the overarching category of ASD. But In DSM-V (2013) Rett`s disorder disappeared because of the determination of the gene responsible for it. The other four types of ASDs also disappeared because they were fused together into just a single entity known as ASD. Such a product i.e. ASD as stated in DSM-V (2013) and DSM-V-TR (2022) may or may not be accompanied by Rett`s disorder.

Although AS has a distinct entity and many positive features and functioning, it was fused with them and disappeared from the manual, too.

The output of the fusion process has no theoretical framework to write about. Although it was supposed that it can represent all types, nothing of this has happened. We cannot diagnose it precisely because of a great mistake in diagnosis when DSM-IV autism diagnostic criteria were reformulated and used to diagnose ASD. Logically this may mean that autism equals ASD, AS equal ASD, and AS equals autism which is not right. If APA has no distinct diagnostic criteria for ASD, why did they introduce it? If ASD cannot represent all previous types of ASDs, why did they insist of using it? On the other hand the fusion process damaged the idea of spectrum because the spectrum as a classification necessitates the existence of a group of elements (or disorders) sharing a certain characteristic with varying degrees. We do not have the required group of elements as all what we have is just one element i.e. ASD. So, there is no spectrum according to the output of the fusion process (Mohammed, 2022) [10]. But APA insisted of the presence and maintaining of such a spectrum as they stated that it could be evaluated according to the disorder intensity levels which is an incorrect idea because the intensity levels are varying degrees of a certain characteristic pertaining to just one element. If APA is right, why did this idea not generalized to other disorders especially those having stable entities like intellectual disability or even hard- of- hearing which have many intensity levels?

Because of the distinct existence of all four types of ASDs in reality, and their disappearance from the manual as distinct entities and diagnoses, many problems were experienced in determining each of them and in having a better measurement or evaluation and exact diagnosis for everyone of them in order to choose or develop case and age-appropriate intervention programs. Meanwhile, it is not acceptable that AS as a disorder does not include language or cognitive deficits (Allred, 2009; Klin *et al*., 2005) [1, 7] disappeared from the manual, and is fused with the other types of ASDs including cognitive and language impairments and is merged into ASD (Mohammed, 2020) [9]. These problems related to diagnosis and developing appropriate intervention programs created confusion and led to a dire need for a new classification model to deal with such a disorder.

Materials and Methods

Systematic reviews, analysis and criticism of DSM-IV (1994) [2], DSM-V (2013) [3], DSM-V-TR (2022) [4], practice, observations and discussions with specialists, practitioners and parents in addition to observational studies that have been conducted since 2013. It was concentrated on ASD as presented in the manual. Original articles based on observational studies regarding ASD and early identification and intervention were screened. Articles were excluded if they did not meet all the criteria for inclusion.

Three different Arabic and English electronic databases were searched. The initial search was performed on February 27, 2022, and encompassed all original articles published in Arabic and English. Only ASD and ASDs terms were used in the initial search to minimize the risk of missing potentially relevant articles. Initially, all articles were screened by heading and abstract, followed by a full text screening of the remaining articles. A final hand search through the reference list of the included articles was done on March 25, 2022 to locate additional articles missed by the initial search.

Justifications for the new classification model

After fusing all four types of ASDs as inputs into just one output known as ASD, it appeared that such an output has no theoretical framework if we want to write about it, and it does not reflect these types. The presence of a single element (output) destroyed the idea of spectrum. Therefore, an incorrect criterion dealing with the disorder intensity levels was introduced so as to keep such an idea. AS disappeared from the manual (but not from reality) which led to losing its distinct entity and diagnosis. A reformulated and complex version of DSM-IV autism diagnostic criteria was used to diagnose ASD as if both were the same.

On the other hand most children with PDD-NOS have little or no repetitive behaviors. According to the manual they will receive the diagnosis of social communication (pragmatic) disorder neglecting the autistic characteristics they exhibit. Although social communication (pragmatic) disorder is just a subclass of communication disorders, it has become a huge umbrella for so many disorders that might not related originally to it. All of these issues negatively affected our vision to the whole subject because of blurry and confusion (Mohammed, 2022) [10]. Therefore, specialists face many problems when they try to evaluate or diagnose ASD cases in order to make final decisions about everyone of them. They find distinct types of disorders in reality not just one type as cited in the manual. So, it was important to look for a logical and practical solution for these problems which led the author to the development of his new classification model.

ASD concept as suggested in the model

As suggested in our new classification model, and depending on the distinct existence of ASDs in reality the author defines autism spectrum disorder ASD as a complex neurodevelopmental and life- long disorder the child may have before he reaches three years of age if it has an early onset, or after he reaches three years of age if it has a late onset on condition that when the disorder has a late onset the child either develops normally until the beginning of the disorder, or doesn't completely meet all the diagnostic criteria for autism. It reflects the inability of the child to identify with others around him leading to negative and defective behavior responses resulting in egocentrism and negative effects on almost all areas of development. Many cognitive, social and linguistic deficits are exhibited in addition to inattention where the disorder reflects low functioning.

According to this concept there are three subclasses or subtypes of autism forming ASD i.e. early onset autism, late onset autism and atypical autism each of which is a disorder having autism characteristics, and we can put them on a spectrum where we can use a certain continuum on which there are definite positions for every type according to their intensity levels where atypical autism has a mild level, early onset autism has a moderate level, and late onset autism has a severe level. All three subtypes of disorder have manifest deficits in three areas of development i.e. mental, social and linguistic development in addition to inattention. Whereas AS is a separate and distinct entity and diagnosis having

nothing to do with ASD.

Therefore, the new classification model is an integrative and compositional model that compiles all old and new ASD entities and diagnoses in a single integrative multifaceted whole or entity with one diagnosis having three intensity levels. Logically and realistically it assures the presence of all types in their classical names not just one type because of the independent and distinct physical existence of all ASDs types. It could help us avoid the problems of diagnosis, evaluation and intervention we may face.

Aims of the model

This model was developed as an integrative and compositional one compiling all ASDs types so as to solve the problems faced because of the presence of just one type not reflecting ASDs as they have distinct physical existence in reality. This model aims to;

1. Avoid all problems related to ASD as cited in DSM-V (2013) [3] and DSM-V-TR (2022) [4] as raised by significant empirical questions.
2. Avoid the problems of diagnosis we may face when dealing with one entity neither reflecting nor representing all other entities having real and distinct existence.
3. Maintaining the idea of spectrum scientifically and practically where we have a group of elements (three disorders) sharing one characteristic at least with varying degrees. Hence, it avoids the incorrect idea of spectrum that deals with intensity levels.
4. Maintaining AS as a separate and distinct entity and diagnosis neither related nor belonging to ASD entity and diagnosis.
5. Presenting a comprehensive and integrated vision of ASD that may help us realistically determine and diagnose the disorders included.
6. Presenting a thorough vision of ASD differs from that one cited in the manual, reflects low functioning, compiles all three disorders sharing such functioning, and introduces diagnostic criteria we can use with them for exact diagnosis.
7. Evaluating intensity levels with atypical autism AtA in the mild level, early onset autism EOA in the moderate level, and late onset autism LOA in the severe one. A certain continuum can be used, and in turn support levels can be determined.

Importance of the model

Importance of this new model relies mainly on the fact that ASD which is cited in the manual as an output of the fusion process of all types of ASDs has no theoretical framework. AS was also fused with them. So, it disappeared from the manual although it has a different and distinct entity in reality. Diagnostic criteria used are not in line with ASD because they are a reformulated and complex version of DSM-IV autism criteria. This fusion process also destroyed the idea of spectrum which led to using an incorrect criterion to evaluate it. This of course resulted in a great amount of ambiguity concerning ASD. Hence, it was necessary to look for another way to deal with ASD and even with all types of ASDs that have distinct entities in real life, and need exact diagnosis to deal with them. These facts made our new classification model an important tool to achieve this goal because;

1. It helps us to find a theoretical basis to the disorder we are studying.
2. It helps us to avoid the defects related to ASD as introduced in the diagnostic manual, and in turn finding a new thorough tool to diagnose different cases in an exact and precise way.
3. It introduces AS in a separate category that has nothing to do with ASD. Many experts as cited by Mohammed (2022) [10] feel that AS should be preserved as a separate diagnostic entity to represent a condition related to, but not the same as, autism. Those diagnosed with AS were felt to have a higher- functioning form of autism or autism-related condition. People with AS typically have normal to above-average intelligence but typically have difficulties with social interactions and often have pervasive, absorbing interests in special topics. In addition, Faridi& Khosrowabadi (2017) [5] see that experts also think that APA classification is a premature classification because of biological differences between AS and ASD.
4. It introduces ASD in a new logical and scientific way reflecting all three disorders with low functioning that share autism characteristics with varying degrees, and represents intensity levels which in turn helps us to use spectrum correctly.
5. It uses diagnostic criteria suitable for each subcategory included as there are two subcategories in the model i.e. AS and ASD.
6. It presents three intensity levels for the three subclasses included in ASD depending on symptoms intensity levels that can be presented on a continuum reflecting the supports needed for each level. These subclasses are EOA, LOA and AtA.
7. It introduces the idea of spectrum in a logical and scientific way as all the prerequisites of spectrum are available and met.
8. It deals with a general umbrella called ASDs under which there are two subcategories i.e. AS and ASD. This latter subcategory includes three subclasses i.e. EOA, LOA and AtA. This idea is in line with the idea that ASDs divide into two main categories (Mohammed, 2022; Mohammed & Eisa, 2014; Faridi & Khosrowabadi, 2017) [10, 5, 8] that can be presented on a continuum with each of them lying on an end i.e. high functioning and low functioning forms of autism.

Foundations and bases of the model

This model relies on some important foundations and bases that might help us solve the problems resulted from the current status of ASD in the manual and the ambiguity related to it. They are;

1. There are four separate and distinct entities of ASDs in real life including autism, AS, CDD and PDD-NOS. These types form a huge umbrella for the model.
2. ASDs divided mainly into two subcategories according to functioning forms as presented on a continuum with autism (having mental deficits) on one end and AS (not having mental deficits) on the other.
3. All three types other than AS are mainly characterized as low functioning forms of autism, and all of them have varying degrees of cognitive impairments.
4. The concept of ASD in this model is limited to and exclusively dedicated to the low functioning autism category including autism, CDD and PDD-NOS whereas AS is dealt with separately because of its

nature and the positive characteristics it reflects in addition to the fact that it does not have mental nor language developmental delay.
5. ASD types in the model share nature and characteristics with varying degrees, and in turn have three intensity levels i.e. mild, moderate and severe upon which support is relied and presented.
6. These intensity levels can be located on a continuum, and a certain spectrum is presented logically.

Assumptions

Lexically, assumption is a belief or something that we accept as true without question or proof. But it also means something that we accept as true although we have no proof as we tend to make assumptions about our ability based on very little evidence (Mohammed, 2022) [10]. Here we tend to go according to the evidence we got from research, critique, experts, practice and reality. Conducting more studies is still needed. As a result, this new model relies on the following assumptions;

1. There is a separate and distinct physical existence for all four types of ASDs in reality.
2. There is a comparatively common nature shared by ASDs four types.
3. There is a dichotomy of ASDs having AS and autism.
4. AS has a distinct physical existence and different nature compared to other types of ASDs.
5. CDD and PDD-NOS can be grouped with autism in a class named ASD, and attention should be paid to onset of the disorder.
6. DSM-IV autism diagnostic criteria can be used with ASD new form as suggested instead of the old ASD form introduced by the manual.
7. ASD diagnostic criteria introduced in the manual neither reflect nor express AS.
8. DSM-IV Asperger diagnostic criteria can be used with AS new class as suggested.
9. Intensity levels can not represent a spectrum as they present varying degrees of a certain characteristic pertaining one element.
10. ASD subclasses that have three disorders can be classified in a spectrum, and located on a continuum.

Construction of the new classification model and diagnostic criteria

This model, as mentioned above, presents ASDs as a huge umbrella. There are two subcategories under this umbrella depending on functioning forms of autism which are high functioning represented by AS, and low functioning represented by autism. The autism subcategory includes three subclasses i.e. EOA(classical autism), LOA (CDD) and AtA (PDD-NOS). This idea is consistent with the idea that ASDs divide originally into two main categories that can be presented on a continuum with each of both categories lying on an end i.e. high functioning and low functioning autism. This means that we have two categories as follows;

1. AS: It has a distinct physical existence and different nature compared to other types of ASDs because intensity of the disorder is less than other types, it needs little support and has no mental deficits. Thus it has many positive characteristics making its nature a different one. To diagnose AS we can use DSM-IV Asperger diagnostic criteria. From the very beginning As;
   a. Is a main type of ASDs.
   b. Negatively affects child`s developmental areas.
   c. Manifests social deficits.
   d. Reflects autism characteristics.
   e. Has many positive characteristics.
2. ASD: It is a new concept introduced in this model, and thereby it is not the concept presented in the manual. According to the model there are three disorders included in such a category. These disorders are;
   a. Autism or early onset autism.
   b. CDD or late onset autism.
   c. PDD-NOS or atypical autism.

Everyone of the these three subclasses reflects the characteristics of autism. All three disorders share autism characteristics with varying degrees which makes them form a spectrum with a continuum on which every disorder is located because all prerequisites of spectrum are met or applied to them. Finally, everyone of them is a disorder in itself. Hence we can call this category as a whole as autism spectrum disorder. Besides, every type of these disorders;

a. negatively affects almost all child`s developmental areas.
b. reflects low functioning autism.
c. manifests mental deficits with an IQ range as intellectual disability.
d. manifests social and linguistic deficits.
e. manifests autism characteristics and deficits.

To diagnose ASD as presented in the model we can use either the DSM-IV autism diagnostic criteria which will be better, or the complex and reformulated DSM-IV autism diagnostic criteria version presented in DSM-V and DSM-V-TR. The three intensity levels will refer to the three disorders included with the mild level referring to PDD-NOS, the moderate level referring to autism and the severe level referring to CDD. We can use the spectrum and continuum in this sense to clarify this category and the disorders included.

So, according to this model the concept of ASD is limited basically to the low functioning autism category that includes autism, CDD and PDD-NOS. It can be diagnosed using autism diagnostic criteria whereas AS is dealt with separately because of its nature, the positive characteristics it reflects and having no mental and language developmental delay. It can be diagnosed using the old diagnostic criteria of Asperger. The following figure presents the construction of our new classification model for ASD.

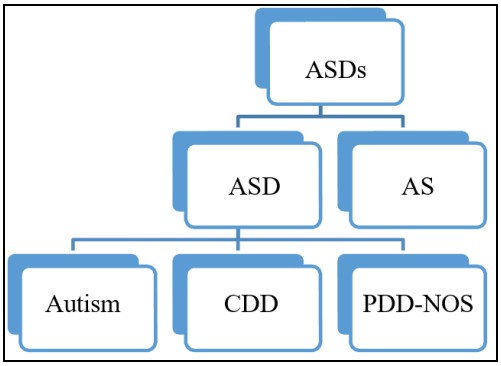

Fig 1: The new classification model for ASD

Diagnostic features

According to our new model there are many diagnostic features of the disorders included as we can infer that;

1. All disorders included are pervasive in nature as they negatively affect child`s developmental areas.
2. All of them are neurodevelopmental disorders.
3. All of them reflect autism characteristics.
4. All of them share autism characteristics with varying degrees.
5. All three disorders included in ASD subcategory mainly reflect low functioning autism, and spectrum prerequisites are met and applied to them which helps us locate their positions on a continuum.
6. AS category reflects high functioning autism.
7. Onset of the disorders plays an important role in diagnosis.

This model with its foundations, function and application has also many characteristics as follows;

1. It helps diagnose different cases in an exact and precise way.
2. It is easy to diagnose cases according to the model.
3. It is possible to diagnose all disorders included as subclasses.
4. Intensity levels of the disorder can be simply evaluated.
5. It is possible to use the continuum to describe the disorders included.
6. Spectrum cab be used in a practical, logical and scientific way to locate the position of every disorder.
7. Many problems parents experience as a result of the disappearance of ASDs from the manual can be solved.

Finally, it appears that this model forms a cohesive and integrated whole compiling old entities that aroused many problems to parents, specialists and practitioners since their disappearance from the manual although they have physical and distinct existence in reality. I hope it can help us face, overcome and solve such problems, and choose or develop case and age-appropriate intervention programs.

Limitations

This model is an output of a theoretical, analytical and critical vision of ASD as presented in the manual in addition to reviewing some field studies and practices that revealed a lot of problems due to the form presented in the manual. It is just a critique, practice and conclusion, but it still needs studies to be conducted, and more practice.

Conclusion

Although the new DSM-V ASD is told to be a “spectrum” disorder, it is not adopting a concept of “continuum”. In an essence, the change made by DSM-V ASD indicates that the field of Autism continues to ask the same question: “What is Autism?”. The existence of autism, AS, PDD-NOS and CDD has been “eliminated” by the DSM-V ASD. Thus comparing the research findings before DSM-V ASD era to those being prospectively collected based on DSM-V ASD seems to be like comparing apples with orange. It was concluded that this new classification model for ASD as presented here is a new and better tool to diagnose and deal with ASD in its new form, and helps to avoid and overcome the problems experienced due to the use of the current method of diagnosing ASD as presented in the manual.

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