

9-8-2016

The effect of the DSM changes on autism

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THE EFFECT OF THE DSM CHANGES ON AUTISM

by

Paris Newsome

A Thesis

Submitted to the
Department of Psychology
College of Science & Mathematics
In partial fulfillment of the requirement
For the degree of
Masters of Arts in School Psychology
at
Rowan University
April 14th, 2016

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Abstract

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THE EFFECT OF THE DSM CHANGES ON AUTISM
2015-2016
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Master of Arts in School Psychology

The purpose of this study was to determine if the changes that have been made to the Diagnostic Statistical Manuals over the years have had a major effect on Autism and its prevalence rate. This thesis used publically available data from the Centers for Disease Control and Prevention and Autism Speaks Organization. Since publically available data was used for this research no demographic or identifiable information about the population was obtained for this study. There are five editions of the Diagnostic Statistical Manual of Mental Disorders and two revised editions. This study specifically looked at the last three editions of the manual. The DSM-III, DSM-IV-TR, and DSM-5 were compared to one another distinguishing the differences and similarities of the changes that have been made between them. The prevalence rates were looked at from the time frame of the year an edition was published to the publishing year of the newer edition. Comparing the number of individuals diagnosed over the years to the changes made in the Diagnostic Statistical Manual's and acknowledging any drastic increases. It was found that the DSM criteria changes have not had a major effect on the prevalence rate but due to other factors the rate has steadily gone up over the past couple decades. This study will help the public and people become more knowledgeable about these changes and how they have effected or impacted the disorder over time.

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Chapter 1

Introduction

Knowledge and research pertaining to Autism is fast growing. There is a lot that is still unknown about the disorder, and the research that is being done is constantly providing us with new information about the disorder. “Autism is found in association with many different levels of language impairment and social impairment, with variant neural deficits and mental ages, and with a range of etiologies” (Waterhouse et al., 1996). Autism relics as a widely interesting condition that is one of the most studied child psychiatric disorder. The research and studies have led to the alteration of our knowledge and understanding about the disorder and how we are able to treat the people diagnosed with the disorder (Wolff, 2004). This has led to the significant changes in the DSM’s, specifically between the III, IV and 5. With so many changes it brings questions to mind, is the number of people with Autism disorder is increasing, or professionals are getting more accurate at diagnosing and recognizing the disorder.

The purpose of this study is to determine if the changes to the diagnosis criteria for Autism made in the DSM, between the last three editions have affected the prevalence rate for Autism. Based on the increase of knowledge and research on the disorder, the changes to the DSM between III, IV and 5 has increased the number of people diagnosed with Autism each year. Potentially, also leading to less misdiagnoses every year as well. We must also take into account the removal of Aspergers Syndrome and some of the other sub-categories such as PDD from the DSM-5. This could also contribute to the number of people diagnosed from the time the DSM-5 was published.

This study shows the importance of research, and shows the significance of making changes and alterations to diagnostic criteria in the DSM. “Initially the DSM was developed for psychiatrists who were interested in describing and understanding the frequency, with which mental illnesses developed in our society” (Tsai & Ghaziuddin, 2014). Obviously today the DSM is widely used and deemed valid and reliable by the scientific and professional community. This study will provide insight to whether changing the criteria for Autism had a positive or negative effect on the diagnosis of the disorder. By changing the criteria with supported research it could lead to less misdiagnoses and more accurate diagnoses. With more accurate diagnosis, people with the disorder will get the help and resources that they need. This study will determine if the changes to the criteria were necessary for the diagnosis of the disorder.

Definitions

In the creation of this study there are key terms that are needed to be defined to help further understand the research that has been conducted:

DSM- Stands for Diagnostic & Statistical Manual of Mental Disorders, it is used by professionals in the mental health field to help them in clinical settings with the classification and organization of mental disorders (American Psychiatric Association, 2015).

Autism Disorder (ASD)- a multifaceted disorders that effect brain development. The disorder is categorized by many different characteristics including problems in verbal and nonverbal communication, social interaction, and repetitive behaviors (Autism Speaks Inc., 2015).

Aspergers Syndrome- this disorder is much like Autism, with similar behaviors and struggles with social and communication skills but in a meek form. These individuals are higher functioning than individuals with an Autism Disorder diagnosis (Autism Society, 2015).

Rett Syndrome- this disorder effects the way the brain develops, it is rare neurological and developmental disorder. It effects the individual's capability of their movement of muscles particularly in the eyes and speech (Mayo Clinic, 2015).

Pervasive Developmental Disorders (PDD)- this is a diagnostic category that categorizes a group of disorders that include symptoms such as delays in social skills and communications skills. Presenting themselves as early as infancy but typically at three years of age is when a individual can be diagnosed (National Institute of Neurological Disorders and Stroke, 2015).

Limitations

Some limitations in this study were the amount of data that was available to use for the comparison of people diagnosed with Autism each year. Since this study was solely based on public data it was very important to find as much data pertaining to the disorder as possible. This may have led to some rates of diagnosis not being documented or included in the data used in this study. Another limitation is the data used in this study was just collected in the United States.

Assumptions

We can assume that Autism rates increase each year, due to new research about the disorder and a better understanding of diagnosis. It is also assumed that the public data used in this study was reliable and valid. It can also be assumed that the data used in

this study is a good representation of the people diagnosed with Autism throughout the United States.

Chapter 2

Literature Review

History

The study of Autism Spectrum Disorder is one of the most interesting and studied disorders. It is a spectrum disorder meaning the intensity and disposition of the symptoms of Autism differ between different people that have been diagnosed with the disorder (Hellendoom, Wijnroks & Leseman, 2015). Meaning that some people may fall on either end of the spectrum, being defined as high functioning or low functioning. Researchers are still trying to determine what causes Autism Spectrum Disorder. That is why the diagnostic criteria is constantly changing in the DSM, the more research that is done creates new findings and more information about the disorder. Before taking into account the changes that have been made between the DSM's and how they could have contributed to the prevalence rate for the disorder, some background information is needed. It is said that Leo Kanner discovered and contributed to the Autism disorder, there has been some controversy though stating that he may have been predisposed by a previous researcher, Hans Asperger. Regardless both researchers made great contributions to the disorder (Chown, 2012). When Autism was first discovered and given a scientific description, research and information about the disorder was very slim.

But since then, specifically from the 1960's till present day the increase of new findings and research has been tremendous (Thompson, 2013). This has given us the ability to learn more about the disorder and how we can help people that are diagnosed with Autism. With little research being done, treatments and interventions were unknown to the disorder. This has changed drastically over the past thirty years. Before people

diagnosed with Autism received little or no treatment, till now, where there is many different treatments and interventions available like EIBI treatment. Over time it has become a very treatable disorder (Thompson, 2013). With continued research, more treatments will become available and the treatments that are currently available will hopefully have increased results. The earlier the treatments are begun the better the outcome for the individuals with the disorder. Early intervention in any disorder is very important and Autism is no exception.

Over the past decade rates have risen due to the diagnostic criteria constantly changing in the DSM, also because of an overall increase in knowledge about the disorder by parents and professionals. The disorder was not added to the DSM as its own definition until the 3rd edition, the DSM-III (Tidmarch & Volkmar, 2003). Studies have been done on the incident rates of Autism over the years. A study done by Jensen, Steinhausen, & Lauritsen (2014) found that during the span of 1995 to 2010 there were increased prevalence for the diagnosis of Autism. The study found that most of the higher incidence rates were in the older group such as 14-20 years of age. Also a higher incident rate was found in females over males. Which goes against some current research that males have a higher probability of being diagnosed with Autism over females which is interesting. The prevalence of autism disorder has been increasing as the years go by but as to why is still an unanswered question. It could be due to the DSM, or other factors that will be explored and discussed throughout this study.

Etiology

As mentioned previously there is little known about what causes this disorder. Constant research is being done to try and pin point what leads to an individual

developing this disorder. With not that much discovered on what the causes are, there have been some misconceptions involved with the disorder. Furthermore, recent research has ruled out some of these misconceptions, and previous potential causes of the disorder. For a while, it was thought that MMR-vaccinations (Mumps, Measles, and Rubella) were a potential cause of Autism. The research that was done to link the two has since been retracted and been classified as false. If this were true the prevalence rate for Autism would be much higher due to the fact that almost all children are vaccinated with MMR when they're young. Although, it has been made aware that the vaccination does not cause Autism, vaccination rates are still down compared to what they were previously to the media reporting the vaccination myth (Jarrett, 2014). Further research has been done in conjunction of retracting this particular information showing that there is no link between the two. It just happens that the onset of Autism usually starts at the time of these vaccinations. That is how the correlation came about. Even though, vaccinations rates are low due to people believing the media and false research, Autism rates and prevalence continue to elevate each year. This further supports the connotation that vaccinations do not cause the disorder.

Studies have been conducted on genes and how they relate to individuals with Autism. Specifically, genes that have mutations are the main focus in these types of studies. A study done by Talebizadeh et al. (2004) found that in a group of individuals that had been diagnosed to with Autism mutations in the neuroligin genes were not found in these individuals. This rules out that these mutated genes have a link to Autism. It was suggested that further research should be done on the X chromosome genes. This research does not completely rule out the idea that the mutated neuroligin genes have a

link to Autism. The research design the study used could have had an effect on the results. Perhaps a different approach could have been used and it could have produced different findings. Any research done regardless of the findings is helping us gain more knowledge about the disorder and potentially help us understand all aspects of it. It has also given us the ability to rule out certain beliefs or theories about the disorder and how it occurs. Most mental health professionals believe that infantile Autism is linked to biology. “In fact, there was overwhelming support for the idea that Autism stems from such biological phenomena as biochemical imbalance, genetic inheritance, brain lesion, metabolic dysfunction, prenatal factors, and chromosomal mutation, in that order” (Gallagher, Jones & Byrne, 1990). It could stem from any of those mentioned or even a combination of the theories, which should also be taken into account. In this study a questionnaire was given to mental health professionals, no research was done on these particular theories in this study. Research today, hones in on these particular theories, trying to pinpoint what could cause Autism or contribute to it biologically. An article by Folstein, Bisson, Santangelo & Piven (1998) went on to discuss that in order to gain more information or make major headway in discovering some of the causes of the disorder, multiple factors and approaches will need to be researched and considered. They went on to discuss the importance of studying all aspects of children with Autism. This includes their families and their history. Looking for any types of trends that may be found across the families medical history and how it could play a role in the diagnosis or cause of Autism.

Prevalence

The prevalence of Autism Disorder is something to take into account especially with the nature of this study. “Given the continually growing prevalence of autism reported in the United States and throughout the world, and the growing attention facing autism from all sides, social science perspectives are especially important” (Cascio, 2014). Looking at the prevalence of Autism over the past few years and seeing how it has increased or decreased in response to the changing diagnosis criteria in the DSM’s is a very sought after topic. Since, Autism is a disorder we do not know a lot about in regards to the causes and risk factors, the prevalence rate is very important. According to a study done by Charman (2002), prevalence rates have increased in the couple of years prior to the writing of the article. These rates have increased due to multiple possibilities including more children being recorded into the service database, and also the higher focus on the disorder itself by the scientific community and society.

Williams, Mellis, and Peat (2005) also agreed that the increase of in incidence rates could be due to parents, the community and professionals being more knowledgeable and aware of the disorder. By having more people informed and educated about the disorder, people will be able to refer and report children or individuals that might need services. Parents being better informed could potentially help children that could possibly have Autism Spectrum Disorder to get early treatment or interventions. Making sure that individuals that are diagnosed with Autism are logged and accounted for is very important as well, this gives researchers and professionals an accurate population and prevalence rate. Going forward it should only become more accurate. Also, more sufficient ways may be developed in regards to recording data.

More research that supports the notion that the prevalence rate has gone up due to a combination of changes made to the DSM criteria over the years, people and professionals becoming more aware about the disorder. But also it brings to question if the disorder has had a legitimate increase in prevalence by itself (Wing & Potter, 2002). This is not to say that other factors have not played a role in the rise in numbers but in regards to this specific research the two factors mentioned are the biggest contributors. Its hard to say if we will ever be able to discover if Autism is just increasing in numbers because more individuals are being born with the disorder. This is something that we will probably never know unless we find a definite cause of Autism. Until then this question will remain unknown. We can try and pin point this by looking in the age of onset and recording it accurately.

There has also been research done, specifically two studies showing that the prevalence rate has increased because so many children that may have gone undiagnosed or unidentified at a smaller age are now being diagnosed due to people being more informed about the disorder and seeking professional help. The increase could also be due to there being a lack of availability to health care that is now available (Ouellette-Kuntz et al., 2014; Schieve, et al., 2012). That is also another factor to take into account when considering prevalence rates and how they have changed over the years. Healthcare is very limited when it comes to behavioral and mental health. Services are not always available to people who need them. This could have led to many individuals going undiagnosed in the past. With improvements to the healthcare system over the years or a family finally being able to afford services could lead to a later diagnosis, contributing to

the possible increase in Autism. Another study had similar findings in regards to children at a younger age going undiagnosed.

Kocovaska et al., (2012) found that “The following study in late adolescence-young adult age (15–24 years) revealed that about 36% of the total cohort of clinically clear ASD cases had been missed in the first screening study performed in childhood. The reasons for this failure to identify the whole Autism population at an earlier age remain partly obscure but it is possible that the unfamiliarity with the clinical presentation of autism in females may have played a significant role in this context” (p. 42). This study demonstrates that people being aware, is of the disorder is highly important in order for children that need help get the help they require. The more we know about the disorder as a whole, the more we can help children that may have the disorder and help them get the services they need. A study done by Coe et al., (2008) highlighted on the notion that some cases may go undetected until they start school. Children can be diagnosed with Autism disorder at age 3 but often are not diagnosed until a later age. This further supports the idea that people are more informed and aware of the disorder and children are being better referred making the prevalence rate increase over the last decade. If people or parents were more aware of the disorder they might see the signs or symptoms of the disorder and take their child to be evaluated before they start school. The earlier the child at risk gets help, the better the outcome.

Aspergers and PDD

In addition to the community and professionals becoming more educated about the disorder, we have begun to make great changes to the disorder itself. According to Waterhouse & Gillberg (2014) there has been a lot of research done to determine what

brain dysfunctions go with the disorder and has been narrowed down to three considerable categories. The three dysfunctions being small cerebellar volume, small brain volume, the third being damaged cortical connectivity. With these defined categories more specific research can be done to possibly understand why these certain dysfunctions are apart of the disorder. Potentially, even leading to discovering the causes of the disorder and possibly how to prevent it. Another big and also controversial change that has been made to the Autism Disorder is the removal of the Aspergers Syndrome from the DSM. There has been much debate on whether this was a beneficial change to the disorder itself.

A study did interesting research on whether or not healthcare professionals and teachers believed that there is a difference between Autism Disorder and Aspergers Syndrome, determining whether these people believed this was a ethical choice or not. The study found that between about 97% of participants in the research specified that they believe there is a difference between the two (Kite, Gullifer & Graham, 2013). This shows that mental health professionals possibly believe that there should be two separate diagnoses due to the criteria for both. This means that some individuals may fall under one diagnosis but not the other, regardless they still get a diagnosis. The change was made in the DSM-5, which has not been published for very long, so it is still unknown to whether or not removing Aspergers from the manual has had a positive or negative impact on Autism Spectrum Disorder. According to two studies done in 2013 the potential removal of Aspergers Syndrome would effect individuals that are already diagnosed with the disorder because according to the new criteria they would be excluded (Beighley et al., 2013; Chamak & Bonniau, 2013). This potentially could deny them the

services that they need. This information also brings to point that by removing Aspergers Syndrome it could affect the diagnosis rate for Autism Disorder either positively or negatively depending on where someone falls in terms of the criteria.

Grant and Nozyce (2013) also found “The DSM-5 criteria with their less nuanced approach to communication and social-emotional symptoms could miss the clinical needs of children who meet current criteria for Asperger’s Disorder” (p. 588). The changes that were made to the most recent DSM edition could potentially do more harm than good, according to some research. Children that once had a diagnosis and were receiving treatment for that specific disorder may not have access to services because they do not qualify for treatment any longer. A study that was done prior to the proposed changes to the DSM-5 also had concerns about the fate of Aspergers Syndrome. They posed the question if Aspergers could be redefined in the DSM so that it differentiates better from the Autism Disorder criteria effectively (Mayes, Calhoun & Crites, 2001). Instead of differentiating the two better in the DSM, they removed one completely and made it one large category. Another disorder that suffered in the DSM was PDD, which was once a category in the DSM- IV categorized with Autistic Disorder. It was removed along with Aspergers from the DSM-5.

There has also been research done to see if this disorder was affected by the criteria changes in the most recent edition of the DSM, like that of Aspergers Syndrome. According to Kent et al., (2013) people that have been diagnosed with PDD previously will not fall under a diagnosis with the new criteria and changes. Furthering the notion to if this change was the best choice for the disorder. In the DSM-IV the disorder was broken up into three categories. “Under the category of pervasive developmental

disorders (PDD) in the DSM-IV-TR, three unique autism spectrum disorders [Autistic disorder (AD), Asperger's disorder, and pervasive developmental disorder-not otherwise specified (PDD-NOS)] represent a wide range in symptomatology and severity” (Kulage, Smaldone & Cohn, 2014). With the revisions to the DSM-5 the sub categories were taken out so that the Autism Spectrum Disorder is the only category and the criteria was broadened to make up for the deletion of the sub categories.

Gibbs, Aldridge, Chandler, Witzisperger and Smith (2012) did a study on how the changes in the DSM-5 will effect diagnosis and found that the children that possibly will not meet the criteria for Autism Spectrum Disorder, when they once did in the previous edition, the DSM-IV or others that were previously diagnosed with a PDD sub category. Another article found the same results stating that individuals that are diagnosed with PDD under the DSM-IV will not meet the criteria in the DSM-5. This subgroup would be the biggest effected group in regards to the changes made (Taheri, Perry & Factor, 2014). This is an interesting finding compared to other studies that have been done. A lot of research has suggested that individuals that are diagnosed with Aspergers under the DSM-IV category will not meet the criteria in the DSM-5 as previously mentioned.

DSM-IV and DSM-5

There are constant changes being made to the DSM's, with more research and information about disorders becoming available. One study looked at the ICD-10 and the DSM-IV and compared the diagnostic criteria. “This study demonstrates that ICD-10 and DSM-IV have a high overall agreement with other well-established instruments both in differentiating the PDD group from the non-PDD group and in differentiating childhood autism/autistic disorder from other subgroups in the PDD spectrum” (Sponheim, 1996).

This shows us that prior to the most recent DSM, the diagnostic criteria for Autism disorder and PDD worked efficiently at distinguishing between the disorders providing doctors and professional with accurate information to follow. Under the new DSM criteria, all the sub categories have been taken out. These categories being Aspergers, PDD, Childhood Disintegrative Disorder, Autistic Disorder, and Rett disorder. These were all eliminated and a new name was created, Autism Spectrum Disorder (Ozonoff, 2012). Making the criteria extremely broad to try and cover the symptoms of some of the sub categories that were eliminated. By having the diagnosis criteria go from having five sub groups to one group, there is bound to be complications. That is why there has been so much controversy with the changes of the DSM-5. Individuals that have been diagnosed with one of the sub category disorders now may not be able to receive treatment they might be receiving because they do not have a disorder based on the new criteria.

Other issues that come with changing the criteria from five subgroups to one could include misdiagnosing. According to Wheeler et al., (2014) the changes that have been made to the DSM for the Autism Spectrum Disorder has created inference for people with autism symptoms but also have contested the assumptions in regard to incident rate of Autism co morbidity. By making the Autism Spectrum Disorder criteria for the DSM-5 broad to cover the disorders that they removed, makes room for other disorders to share some of the same symptoms for example, disorders like, Fragile X Syndrome. Making the criteria too broad could leave room for errors and overlapping of symptoms between disorders.

Another article mentioned some other consequences that would occur with the revisions made to the Autism Spectrum disorder in the DSM- 5. By removing Aspergers Disorder, Retts, and PDD from the DSM, some social issues will arise as well. Individuals that once identified with different disorders or labels, are now left confused as to what they are diagnosed with or what they identify with (Gensler, 2012). Another study looked at Autism diagnosis in toddlers and the impact the changes between the DSM-IV and DSM-5 would have on the toddlers. “It was found that if the proposed DSM-5 ASD criteria are applied to a sample of toddlers who currently meet DSM-IV diagnostic criteria for an ASD (i.e. autistic disorder or PDD-NOS), the overall prevalence of ASD decreases by an astonishing 47.79%” (Matson, et al., 2012, p. 189). This contradicts some of the other findings mentioned in this study. It has been said that the diagnosis rate and prevalence rate has increased over the past decade but this particular study mentioned above, says just the opposite. By removing some categories, it takes out some individuals that may have qualified with the old criteria. On the other hand the new criteria is broader and could potentially cover more individuals.

There are some other factors that need to be mentioned, when it comes to researching prevalence rates for certain disorders. Prevalence rate needs to be examined across states, due to a difference in prevalence or diagnosis of the disorder. Across states the numbers vary for Autism. There also should be more research done as to why there is such a wide variation of the prevalence rate between states. This could be due to a multitude of different reasons but most likely because certain schools or schools districts do not have the special education services needed to serve individuals diagnosed with Autism or the appropriate screening tools. Or if the prevalence rate is higher in a state it

could be due to accurate use of screening tools and special education services (Sullivan, 2013). If there was more research done on the rate across the states, we might discover more information in regards to risk factors and environmental factors that may be contributing to the prevalence rate. Also, we could possibly improve special education services and assessment tools across state, making them more uniform.

Chapter 3

Methodology

Participants

For this study public data was collected from reliable resources to represent the individuals who are diagnosed with Autism Disorder each year. Since the data used in this study was public and archival data not much information such as demographic information was retrieved about the participants. There were limitations to collecting data this way in that you will not gain the typical information you might running a study where you use actual participants. Collecting public data leaves out any identifying information that could connect the individual to the disorder that you are studying, it's merely just a number. Another limitation for this study was the amount of data that was publically available for the particular research being studied.

Materials

The materials that were used in this study were very minimal. The DSM- III, DSM-IV-TR, and DSM-5 were needed to complete the research in this study, which were provided from Rowan University's library located in Glassboro, New Jersey. Public data that was found on the Internet pertaining to the diagnosis rates of Autism Spectrum Disorder was also used in this study, specifically the Center for Disease Control and Prevention and the Autism Speaks Organization websites.

Design

This research was a descriptive design. Specifically the study examined the relationship between the changes that have been made in the DSM and the diagnosis rate of Autism Spectrum Disorder and how it has affected the rate. The variables were the

edition of the DSM, prevalence rates and year. It was hypothesized that increases would be noted within two years of edition changes.

Procedure

For this study the Diagnostic and Statistical Manual of Mental Disorders specifically the DSM- III, DSM-IV-TR, and DSM-5 criteria for Autism Spectrum Disorder was looked at and compared to one another. Also, taking note of how the criteria, has changed over the publishing of editions. Specifically, looking at what they took out or added in for the criteria. Once the information was collected and analyzed from the Manuals, a comparison using public data was done. Public data displaying the number of people diagnosed with Autism each year. In particular, looking at the time frame of when each edition was published and the number of people diagnosed. In doing this we were able to determine whether the changes throughout the editions have had a positive or negative effect on the diagnosis rate of Autism.

Chapter 4

Results

This study looked at the changes made in the last three editions of the DSM and compared them to the prevalence rate to try and determine if the changes to the DSM have had a drastic effect on the rate of Autism Spectrum Disorder per year.

Hypothesis

In this study it was hypothesized that the changes to the DSM criteria for the Autism Spectrum Disorder over the last three editions would increase the prevalence rate of the autism diagnosis. It was found that the prevalence rate for the disorder has steadily gone up over the past two decades. Though, the changes to the DSM may not be the only factor to contribute to the increasing rate. It was also hypothesized that the most drastic increase in prevalence rate of Autism would be in the publishing year and thereafter of the DSM-5. This was hypothesized in response to the major changes made for example, Asperger's and Rett disorder being removed and all diagnosis's made for these disorders under the DSM-IV would then fall under the Autism Spectrum Disorder in the DSM-5. The information found did not support this hypothesis at this time. It should be mentioned that the DSM-5 has not been out for that many years so we may have not seen the effect of the changes yet. As of 2014 the rate has not had a spike in prevalence rate. The greatest increase in prevalence rate happened within and around the DSM-III.

Table 1 shows the prevalence rates for Autism over the last three decades.

Table 1

Prevalence Rates in Autism

| Year | Prevalence |
|-------|----------------------------|
| 1975 | 1 in 5000 |
| 1980* | 2-4 cases per 10,000 (III) |
| 1985 | 1 in 2500 |
| 1995 | 1 in 500 |
| 2000* | 5 cases per 10,000 (IV) |
| 2001 | 1 in 250 |
| 2004 | 1 in 166 |
| 2007 | 1 in 150 |
| 2009 | 1 in 110 |
| 2012 | 1 in 88 |
| 2013* | 1% of population (V) |
| 2014 | 1 in 68 |

Note: The * represents prevalence rates from the DSM's.

Criteria for DSM-III

A comparison of criteria across the last three editions was conducted for this study as well. Autism Spectrum Disorder under the DSM-III was called Infantile Autism. This edition had the most simplistic criteria listed for the disorder. This could have possibly been a contributor to the prevalence rate during that time. The criteria was listed A,B,C,D, E, and F. The criteria included, A; onset before 30 months of age, B; pervasive lack of responsiveness to other people, C; gross deficits in language development, D; if speech was present, peculiar speech patterns were exhibited, E; bizarre responses to various aspects of the environment, F; absence of delusions, hallucinations, loosening of associations and incoherence as in Schizophrenia (American Psychiatric Association, 1980).

DSM-IV-TR

Going forward the DSM-IV-TR was much more specific and broadened the diagnostic criteria, identifying different symptoms and deficits. The criteria was categorized into A, B and C. Criteria A was broken up into three groups of symptoms and examples were given of each. These examples include impairment in social interaction, impairments in communication, and restricted repetitive stereotyped patterns of behavior, interests and activities. Some additions to this edition from the 3rd edition would be the category on social interaction. Social interaction was added into the DSM-IV-TR, the DSM-III did not include this in the criteria. Not only did the fourth edition add this category to disorder criteria it specifically defines what the DSM means by social interactions, for example, failure to make peer relationships and sharing interests with others (American Psychiatric Association, 2000). The DSM-IV also expanded on the

category of communication in the fourth edition. The DSM IV changed what were originally, delays in language development to impairments in communication. Some examples of this would be repetitive language or lack of imaginative play that was developmentally appropriate. The age of onset was also something that was slightly changed in the DSM IV going from onset before 30 months to an onset before 3 years of age in the 4th edition (American Psychiatric Association, 2000). Lastly, in order to have received a diagnosis in the DSM-IV-TR a certain number of symptoms were specified for a diagnosis to be made.

DSM-5

There have also been many changes that were made from the DSM-IV-TR to the DSM-5. Compared to the fourth edition the DSM-5 combined items 1, and 2; social communication and social interaction into one symptom category labeled as criteria A with deficits underneath. The 3rd item, (repetitive patterns of behavior, interests, etc.) from the DSM-IV-TR is now criteria B in the DSM-5. The criteria was condensed from the 4th to the 5th edition, making it more concise. An addition to the DSM-5 was the inclusion of hyper-hyporeactivity to different sensory under the repetitive patterns of behavior, and interests category. The DSM V removed the statement that described the disorder may not be better explained by Rett's or Childhood Disintegrative Disorders (American Psychiatric Association, 2013). The DSM V removed a separate diagnosis of Asperger's syndrome, subsuming it under the autism diagnosis.. Severity indices were added to diagnosis. It must also be mentioned that the DSM-5 states that the symptoms must be present during the early developmental stages rather than stating a specific age (American Psychiatric Association, 2013).

The age requirements of the disorders that were taken out of the DSM-IV-TR and now fall under the Autism Spectrum Disorder should also be considered. Under the 4th edition PDD-NOS does not have a specified age, but does mention that it could have a late age of onset. Aspergers under the DSM-IV-TR has onset of single words by age two, phrases by age three and no adaptive behavior deficits before age three (American Psychiatric Association, 2000). This should be taken into account because by adding disorders under one broad category and having it all fall under one onset statement, could have contributed to the increasing numbers of individuals that have been diagnosed with Autism Spectrum Disorder. This is in result to the earlier diagnosis of the disorders that were taken out of the 4th edition. Also, Unlike the DSM-IV-TR, having six or more symptoms is not required for a DSM-5 diagnosis. In the DSM-5, Autism Spectrum Disorder's criteria is described by levels of severity for both A and B criteria (American Psychiatric Association, 2013). The 5th edition showed the broadest criteria, compared to the previous editions because it needs to cover more disorders other than just the Autistic Disorder as previously mentioned. These changes have permitted earlier diagnosis.

As shown, there are many factors that have contributed to the increase in prevalence of Autism Spectrum Disorder. The rate has steadily increased across the editions of the DSM over the years. The changes that have been made to the criteria across the editions clearly have contributed to these numbers. These changes have been made due to research professionals learning and understanding more about the Disorder. This helps create a accurate diagnostic criteria which could also have contributed to the rise in prevalence

Chapter 5

Discussion

Summary

Autism Spectrum Disorder's prevalence rate has consistently gone up since the 1970's. There are many factors that have contributed to the rate each year. The DSM has played a part in the rate but not entirely. The prevalence rate cannot be pinpointed strictly to the changes that have been made to the last three editions. We can take into account that between the DSM-III and IV that the rate drastically increased. This could be for a number of reasons but most commonly the amount of people that were being diagnosed under different disorders. People with severe intellectual disabilities or low IQ's were being diagnosed under Autism, when they could have been diagnosed based on their intellectual impairment. Diagnostic practices have changed since then but individuals that had both Autism and an Intellectual Disability would have been placed under Autism even though they formally should have been placed under Intellectual Disability (Van Naarden Braun et al., 2015). Today we have individuals that are being diagnosed with Autism Spectrum disorder that have average to high IQ's, contrary to individuals that had very low IQ's due to an Intellectual Disability.

Mental health professionals are better accurately diagnosing the disorder, this could also have contributed to the rate per year. The mental health community is constantly learning new items and features about the disorder that can better help them diagnose children that have Autism Spectrum Disorder. According to Ventola et al., (2007) children that show signs of Autism might also show signs of other developmental disorders or delays, it is important to take the appropriate steps to rule out these other

disorders to accurately diagnose the child. This way the child receives the specific services they need. Professionals are improving with this by using certain assessment tools and screening techniques. Generally, the public and other professionals such as teachers are also becoming more aware of the disorder. This helps children that may be at risk get the right services or seek professional opinions more likely. Parents and teachers are more educated in what to look for in their children at a younger age. This raises the chances of an earlier intervention and treatment for a child that has Autism Spectrum Disorder. Early intervention is very important and has the best outcome when practiced. Children that were diagnosed with Aspergers or features of the disorder would not fall under the Autism Spectrum Disorder in the new criteria of the DSM-5 (Kent et al., 2013). In the DSM-5, Aspergers was removed completely, as well as Rett Disorder, now known to be a genetic disorder, and PDD. But unlike some research that was done prior to the publishing of the 5th edition of the DSM, these children received a diagnosis of autism. According to the DSM-5 any individuals that were previously diagnosed with Aspergers, or any other PDD under the DSM-IV would be placed under the Autism Spectrum Disorder (American Psychiatric Association, 2013). Some researchers were misinformed or had the wrong assumptions about what would happen to individuals with these disorders. Although, they still receive a diagnosis, it does create an issue of labeling. Someone that was once labeled as having Aspergers now has the label of having Autism Spectrum Disorder. This creates confusion with identity for some of these individuals. There is also a lot more stigma socially that goes along with ASD rather than Aspergers.

Limitations

The main limitation to this study was the amount of data that was publically available in regards Autism prevalence rates. It was difficult to find data for each year that was needed for the study. Consistent data was not available. Different sources documented their data differently making it difficult to cohesively combine data to come up with prevalence rates per year.

Future

The Autism Spectrum Disorder is still a disorder that there is a lot still unknown. There will constantly be new information about the disorder being discovered. This will continue to effect the prevalence rate from the DSM criteria changing or due to other factors regarding the disorder that could possibly be discovered. The effects of the changes made to the DSM-5 may not have been seen as well. The DSM-5 is fairly new and the impact of the removal of Aspergers, Rett, and other PDD may not have been seen yet, it is too early to see an effect. This could also have an impact on the prevalence rate on Autism in the future.

References

- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders: DSM-5*. Washington, D.C: American Psychiatric Association.
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders: DSM-IV-TR*. Washington, DC: American Psychiatric Association.
- American Psychiatric Association. (1980). *Diagnostic and statistical manual of mental disorders: DSM-III*. Washington, D.C: American Psychiatric Association.
- Asperger's Syndrome | Autism Society. (2015, December 18). Retrieved December 18, 2015, from <http://www.autism-society.org/what-is/aspergers-syndrome/>
- Beighley, J. S., Matson, J. L., Rieske, R. D., Jang, J., Cervantes, P. E., & Goldin, R. L. (2013). Comparing challenging behavior in children diagnosed with autism spectrum disorders according to the DSM-IV-TR and the proposed DSM-5. *Developmental Neurorehabilitation, 16*(6), 375-381. doi:10.3109/17518423.2012.760119
- Cascio, M. A. (2014). New directions in the social study of the autism spectrum: A review essay. *Culture, Medicine And Psychiatry, 38*(2), 306-311. doi:10.1007/s11013-014-9377-8
- Chamak, B., & Bonniau, B. (2013). Changes in the diagnosis of autism: How parents and professionals act and react in France. *Culture, Medicine And Psychiatry, 37*(3), 405-426. doi:10.1007/s11013-013-9323-1
- Charman, T. (2002). The prevalence of autism spectrum disorders: Recent evidence and future challenges. *European Child & Adolescent Psychiatry, 11*(6), 249-256. doi:10.1007/s00787-002-0297-8
- Chown, N. (2012). 'History and first descriptions' of autism: A response to Michael Fitzgerald. *Journal Of Autism And Developmental Disorders, 42*(10), 2263-2265. doi:10.1007/s10803-012-1529-5
- Coo, H., Ouellette-Kuntz, H., Lloyd, J. V., Kasmara, L., Holden, J. A., & Lewis, M. S. (2008). Trends in autism prevalence: Diagnostic substitution revisited. *Journal Of Autism And Developmental Disorders, 38*(6), 1036-1046. doi:10.1007/s10803-007-0478-x
- Folstein, S. E., Bisson, E., Santangelo, S. L., & Piven, J. (1998). Finding specific genes that cause autism: A combination of approaches will be needed to maximize power. *Journal Of Autism And Developmental Disorders, 28*(5), 439-445. doi:10.1023/A:1026008606672

- Gallagher, B. J., Jones, B. J., & Byrne, M. M. (1990). A national survey of mental health professionals concerning the causes of early infantile autism. *Journal Of Clinical Psychology, 46*(6), 934-939. doi:10.1002/1097-4679(199011)46:6<934::AID-JCLP2270460640>3.0.CO;2-4
- Gensler, D. (2012). Autism spectrum disorder in DSM-V: Differential diagnosis and boundary conditions. *Journal Of Infant, Child & Adolescent Psychotherapy, 11*(2), 86-95. doi:10.1080/15289168.2012.676339
- Gibbs, V., Aldridge, F., Chandler, F., Witzlsperger, E., & Smith, K. (2012). An exploratory study comparing diagnostic outcomes for autism spectrum disorders under DSM-IV-TR with the proposed DSM-5 revision. *Journal Of Autism And Developmental Disorders, 42*(8), 1750-1756. doi:10.1007/s10803-012-1560-6
- Grant, R., & Nozyce, M. (2013). Proposed changes to the American Psychiatric Association diagnostic criteria for autism spectrum disorder: Implications for young children and their families. *Maternal And Child Health Journal, 17*(4), 586-592. doi:10.1007/s10995-013-1250-9
- Hellendoorn, A., Wijnroks, L., & Leseman, P. M. (2015). Unraveling the nature of autism: Finding order amid change. *Frontiers In Psychology, 6*
- Jarrett, C. (2014). Autism - Myth and reality. *The Psychologist, 27*(10), 746-749.
- Jensen, C. M., Steinhausen, H., & Lauritsen, M. B. (2014). Time trends over 16 years in incidence-rates of autism spectrum disorders across the lifespan based on nationwide Danish register data. *Journal Of Autism And Developmental Disorders, 44*(8), 1808-1818. doi:10.1007/s10803-014-2053-6
- Kent, R. G., Carrington, S. J., Le Couteur, A., Gould, J., Wing, L., Maljaars, J., & ... Leekam, S. R. (2013). Diagnosing autism spectrum disorder: Who will get a DSM-5 diagnosis?. *Journal Of Child Psychology And Psychiatry, 54*(11), 1242-1250.
- Kite, D. M., Gullifer, J., & Tyson, G. A. (2013). Views on the diagnostic labels of autism and Asperger's disorder and the proposed changes in the DSM. *Journal Of Autism And Developmental Disorders, 43*(7), 1692-1700. doi:10.1007/s10803-012-1718-2
- Kočovská, E., Biskupstø, R., Gillberg, I. C., Ellefsen, A., Kampmann, H., Stóra, T., & ... Gillberg, C. (2012). The rising prevalence of autism: A prospective longitudinal study in the Faroe Islands. *Journal Of Autism And Developmental Disorders, 42*(9), 1959-1966. doi:10.1007/s10803-012-1444-9

- Kulage, K. M., Smaldone, A. M., & Cohn, E. G. (2014). How will DSM-5 affect autism diagnosis? A systematic literature review and meta-analysis. *Journal Of Autism And Developmental Disorders, 44*(8), 1918-1932. doi:10.1007/s10803-014-2065-2
- Matson, J. L., Kozlowski, A. M., Hattier, M. A., Horovitz, M., & Sipes, M. (2012). DSM-IV vs DSM-5 diagnostic criteria for toddlers with autism. *Developmental Neurorehabilitation, 15*(3), 185-190. doi:10.3109/17518423.2012.672341
- Mayes, S. D., Calhoun, S. L., & Crites, D. L. (2001). Does DSM-IV Asperger's disorder exist?. *Journal Of Abnormal Child Psychology, 29*(3), 263-271. doi:10.1023/A:1010337916636
- NINDS Pervasive Developmental Disorders Information Page. (2015). Retrieved December 18, 2015, from <http://www.ninds.nih.gov/disorders/pdd/pdd.htm>
- Ouellette-Kuntz, H., Coo, H., Lam, M., Breitenbach, M. M., Hennessey, P. E., Jackman, P. D., & ... Chung, A. M. (2014). The changing prevalence of autism in three regions of Canada. *Journal Of Autism And Developmental Disorders, 44*(1), 120-136. doi:10.1007/s10803-013-1856-1
- Ozonoff, S. (2012). Editorial: DSM-5 and autism spectrum disorders – two decades of perspectives from the JCPP. *Journal Of Child Psychology And Psychiatry, 53*(9), e4-e6. doi:10.1111/j.1469-7610.2012.02587.x
- Rett syndrome. (2015). Retrieved December 18, 2015, from <http://www.mayoclinic.org/diseases-conditions/rett-syndrome/basics/definition/con-20028086>
- Schieve, L. A., Rice, C., Yeargin-Allsopp, M., Boyle, C. A., Kogan, M. D., Drews, C., & Devine, O. (2012). Parent-reported prevalence of autism spectrum disorders in US-born children: An assessment of changes within birth cohorts from the 2003 to the 2007 National Survey of Children's Health. *Maternal And Child Health Journal, 16*(Suppl 1), S151-S157. doi:10.1007/s10995-012-1004-0
- Sponheim, E. (1996). Changing criteria of autistic disorders: A comparison of the ICD-10 research criteria and DSM-IV with DSM-III—R, CARS, and ABC. *Journal Of Autism And Developmental Disorders, 26*(5), 513-525. doi:10.1007/BF02172273
- Sullivan, A. L. (2013). School-based autism identification: Prevalence, racial disparities, and systemic correlates. *School Psychology Review, 42*(3), 298-316.
- Taheri, A., Perry, A., & Factor, D. C. (2014). A further examination of the DSM-5 autism spectrum disorder criteria in practice. *Journal On Developmental Disabilities, 20*(1), 116-121.

- Talebizadeh, Z., Bittel, D. C., Veatch, O. J., Butler, M. G., Takahashi, T. N., Miles, J. H., & Wang, C. H. (2004). Do Known Mutations in Neuroligin Genes (NLGN3 and NLGN4) Cause Autism?. *Journal Of Autism And Developmental Disorders*, 34(6), 735-736. doi:10.1007/s10803-004-5295-x
- Thompson, T. (2013). Autism research and services for young children: History, progress and challenges. *Journal Of Applied Research In Intellectual Disabilities*, 26(2), 81-107. doi:10.1111/jar.12021
- Tidmarsh, L., & Volkmar, F. R. (2003). Diagnosis and epidemiology of autism spectrum disorders. *The Canadian Journal Of Psychiatry / La Revue Canadienne De Psychiatrie*, 48(8), 517-525.
- Tsai, L. Y., & Ghaziuddin, M. (2014). DSM-5 ASD moves forward into the past. *Journal Of Autism And Developmental Disorders*, 44(2), 321-330. doi:10.1007/s10803-013-1870-3
- Van Naarden Braun K, Christensen D, Doernberg N, Schieve L, Rice C, Wiggins L, et al. (2015) Trends in the Prevalence of Autism Spectrum Disorder, Cerebral Palsy, Hearing Loss, Intellectual Disability, and Vision Impairment, Metropolitan Atlanta, 1991–2010. *PLoS ONE* 10(4): e0124120. doi:10.1371/journal.pone.0124120
- Ventola, P., Kleinman, J., Pandey, J., Wilson, L., Esser, E., & Boorstein, H. (2007). Differentiating between autism spectrum disorders and other developmental disabilities in children who failed a screening instrument for ASD. *Journal of Autism and Developmental Disorders*, 37(3), 425–436.
- Waterhouse, L., & Gillberg, C. (2014). Why autism must be taken apart. *Journal Of Autism And Developmental Disorders*, 44(7), 1788-1792. doi:10.1007/s10803-013-2030-5
- Waterhouse, L., Morris, R., Allen, D., Dunn, M., Fein, D., Feinstein, C., & ... Wing, L. (1996). Diagnosis and classification in autism. *Journal Of Autism And Developmental Disorders*, 26(1), 59-86. doi:10.1007/BF02276235
- What Is Autism? (2015). Retrieved December 18, 2015, from <https://www.autismspeaks.org/what-autism>
- Wheeler, A. C., Mussey, J., Villagomez, A., Bishop, E., Raspa, M., Edwards, A., & ... Bailey, D. J. (2015). DSM-5 changes and the prevalence of parent-reported autism spectrum symptoms in fragile X syndrome. *Journal Of Autism And Developmental Disorders*, 45(3), 816-829. doi:10.1007/s10803-014-2246-z

- Williams, K., Mellis, C., & Peat, J. K. (2005). Incidence and prevalence of autism. *Advances In Speech Language Pathology*, 7(1), 31-40. doi:10.1080/14417040500055227
- Wing, L., & Potter, D. (2002). The epidemiology of autistic spectrum disorders: Is prevalence rising?. *Mental Retardation And Developmental Disabilities Research Reviews*, 8(3), 151-161. doi:10.1002/mrdd.10029
- Wolff, S. (2004). The history of autism. *European Child & Adolescent Psychiatry*, 13(4), 201-208. doi:10.1007/s00787-004-0363-5