Reading and Writing About Statistics

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Abstract

The number of individuals identified as autistic or having an autism spectrum disorder has increased since the CDC first began tracking report cases using the Autism and Developmental Disabilities Monitoring Network (ADDM) in 2000. Knowing the number of school-age children with ASD will be necessary to prepare for the onslaught of these individuals and their needs as they approach entrance to the adult job market. Relating the life experiences and concerns of adult women with Autism or ASD provides a reflection to education personnel serving students on the spectrum that can help to shape present and future practices to better support their post-graduation life experiences. This paper reviews the statistical data from two articles that capture glimpses of both populations and extracts conclusion on the stability in the rate of diagnosis and the significance of the gender discrepancies of n=82 adult high-functioning women in comparison with n=200 adult high functioning males with ASD.

Reading and Writing About Statistics

Autism is a disorder that affects families worldwide, on all economic levels, and throughout ethnic categories. While the diagnosis more often occurs in boys than girls, the issue of how to meet the growing needs of the autistic community has received much public support. With the increase in state and federal funding to autistic research geared to identifying a diagnosis and supporting ethical treatments, a clear view of the number of individuals identified with an Autism Spectrum Disorder (ASD) is necessary for those in decision making positions. To better understand the current findings of the ASD rates in the United States (U.S.) and Australia, the statistical findings in two articles will be summarized. Published in 2016 the first article, from SPECTRUM News an online autism community, reports data on the current rates of ASD in the U.S. The final article, from the journal Autism, analysis the findings from a 2013 Australian survey of the experiences and reported needs of adult women identified with high-functioning ASD.

Summary

Part 1: Mainstream Media

The reported number of school age individuals identified autistic has been on the rise since 2000 as reported by the U.S. Centers for Disease Control and Prevention (CDC). An article published by Spectrum, *"U.S. Stats Show Autism Rate Reaching Possible Plateau"* (Moisse,

2016) suggest that the current CDC data derived from an observational study points to a leveling in autism numbers. Utilizing data compiled from a 2012 survey of 11 communities in the United States, the CDC acknowledges the prevalence of school aged children identified as Autistic or ASD has remained constant since 2010.

The dataset **AUTISMPREVALENCE** within the article includes information on the rate of ASD reported using surveys from 11 designated sites in the Autism and Developmental Disabilities Monitoring (ADDM) Network. Quantitative results are described in a simple bar graph, X= years every two from 2000 to 2012 and Y= prevalence per 1,000 children from 0 to 14. Findings in 2010 and 2012 identify the rate of reported cases of children diagnosed as Autistic or ASD as one in 68 the first constant trend over a four-year period. There is not enough information on study methodology to perform an analysis. The article does provide frequency data in the text to support results documented in the graphic. Additional information identifying how survey participants were selected and designated variables for inclusion would allow the reader to validate their addition in the reported dataset. A distinction in the text was made of percentage of boys versus girls identified as ASD which suggest that gender, along with age, and ethnicity were categorical and quantitative variables in the survey. The author does acknowledge issues surrounding the estimates reported by states which they attribute to being reflective of the different regions ability to identify specific cases of autism using the survey instrument suggesting possible reliability issues in the survey design.

Part 2: Scholarly Article

The authors of the article, *"The Experiences and Needs of Female Adults with High-Functioning Autism Spectrum Disorder"* (Baldwin & Costley, 2016), analyzed the dataset **FEMALESUBSET,** from the 2013 Autism Spectrum Australia study *We Belong* to determine

the perceptions on life experiences and needs of N= 82 adult autistic high-function women. A qualitative questionnaire methodology was utilized to inform self-reported data describing the experiences, needs and aspirations of N=313 Australians, 18-70 years of age. Statistical difference between the genders, females versus males, were analyzed in found to be not significant using p=.05.

Tabular results for demographics and diagnostic information as well as an appendix of the subgroups, Mental health, Education, Employment, Unemployment, and Social experiences were displayed using comparison tables identifying results for Females(n=82) and Males (n=200). The authors defined p-values using a supplied footnote along with percentages for groupings. Descriptive data, identifying the mean and standard deviation demonstrate the mean and variability of the survey results. Within gender comparison results of sub-categories, Mental health: Mental health condition X^2=9.160, Social interaction: worst thing X^2= 7.419, Unemployment: wanting a job prefer full time X^2=8.160, Social experiences: Prefer own company X^2= 14.288 and Single: relationship/marriage a goal X^2= 8.139 resulted in a p<0.05 was not significant. Sub-categories, using a p<0.01, Education: currently studying X^2= 6.721 and Occupational grouping: Community/personal service workers X^2= 19.063 demonstrated results of less significance. The comparison of Females versus Males on the topic Inadequate social support under Education X^2= 3.846 with a p=0.05. An analysis of the p-value results on all comparisons subsets lead to a rejection of the null hypothesis that males identified with ASD experiences and needs are worse than females of the same diagnosis.

The method and selection of the survey tool were clearly explained with possible limitations due to the reliance on self-reporting from participants as viewed by the authors to address possible bias and validity concerns in results which support the conclusion found by the

investigators in the study. The results offer little statistically supported proof that adult women

in Australia identified as ASD in comparison to male counter-parts life experiences in

relationship to the six defined categories are less significant.

Conclusion

Through a comparison of both articles the reviewer found results from the mainstream article are

unable to be replicated and or validated using the information provided in the article. The lack of

a mean or standard deviation formula prohibits the reviewer from replicating the statistical

information to adequately judge the appropriateness of the findings. The article from the Autism

journal provides an acceptable key to explain the methods used along with the data allowing the

reader to duplicate the analyze of the dataset reported. The authors utilized descriptive, statistical

and thematic methods to explain the capture responses in this questionnaire study, applying

coding categories that allowed for comparisons quantitively.

References

Baldwin, S., & Costley, D. (2016). The experiences and needs of female adults with high-functioning autism spectrum disorder. *Autism, 20*(4), 483-495. doi:10:1177/1362361315590805

Moisse, K. (2016, March 31). *U.S. stats show autism rate reaching possible plateau*. Retrieved from Spectrum: https://spectrumnews.org/news/u-s-stats-show-autism-rate-reaching-possible-plateau/

Appendix A

The experiences and needs of female (1).pdf