



Knowledge of Autism Spectrum Disorder (ASD) Among Pre-Service Audiology and School Psychology Students



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Introduction

According to the American Psychiatric Association (2013) Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder associated with significant communication, behavioral, and social delays¹. Early identification and intervention is essential to improve overall outcomes for these children. Many children with ASD are non-verbal or have significant language delays. As a result, children with ASD are frequently referred for a diagnostic hearing evaluation to determine whether a hearing loss is contributing to their delayed development². The clinical audiologist is often in a unique position to facilitate the early identification of and appropriate referral for ASD - if they are sufficiently knowledgeable about the disorder³.

The purpose of this study was to:

1. Assess the knowledge of ASD among pre-service audiology doctoral students compared to pre-service school psychology students.
2. To determine self-reported preparedness of doctoral audiology students to work with this population.

Research Design

ASHA accredited Audiology programs were contacted via email (N=50) and participants were asked to complete a survey that included:

- Demographics
- Year within the academic program
- Level of experience and confidence with ASD
- The Autism Spectrum Knowledge Scale (ASKS), which is composed of 33 binary questions that examine: etiology, symptoms, outcomes, treatment, and assessment/diagnosis. The overall score for the measure consists of the number of items answered correctly.

Pre-service psychology data was collected as part of a larger project designed to validate the ASKS across various populations.

Participant Demographics

- **Gender:** Our sample for the respondents were 91.13% female with 8.86% male for pre-service audiology students and 90% female and 10% male and pre-service psychology students.
- **Age:** Participants were at least 18 years or older with the majority between 21 -35 years 97%.
- **Race/Ethnicity:** Participants identified as follows:
 - 91% White
 - 5% Latino
 - 1.2% Black or African American
 - 1.2% Native American/Alaskan
 - 1.2% Multiracial
 - < 1% Other

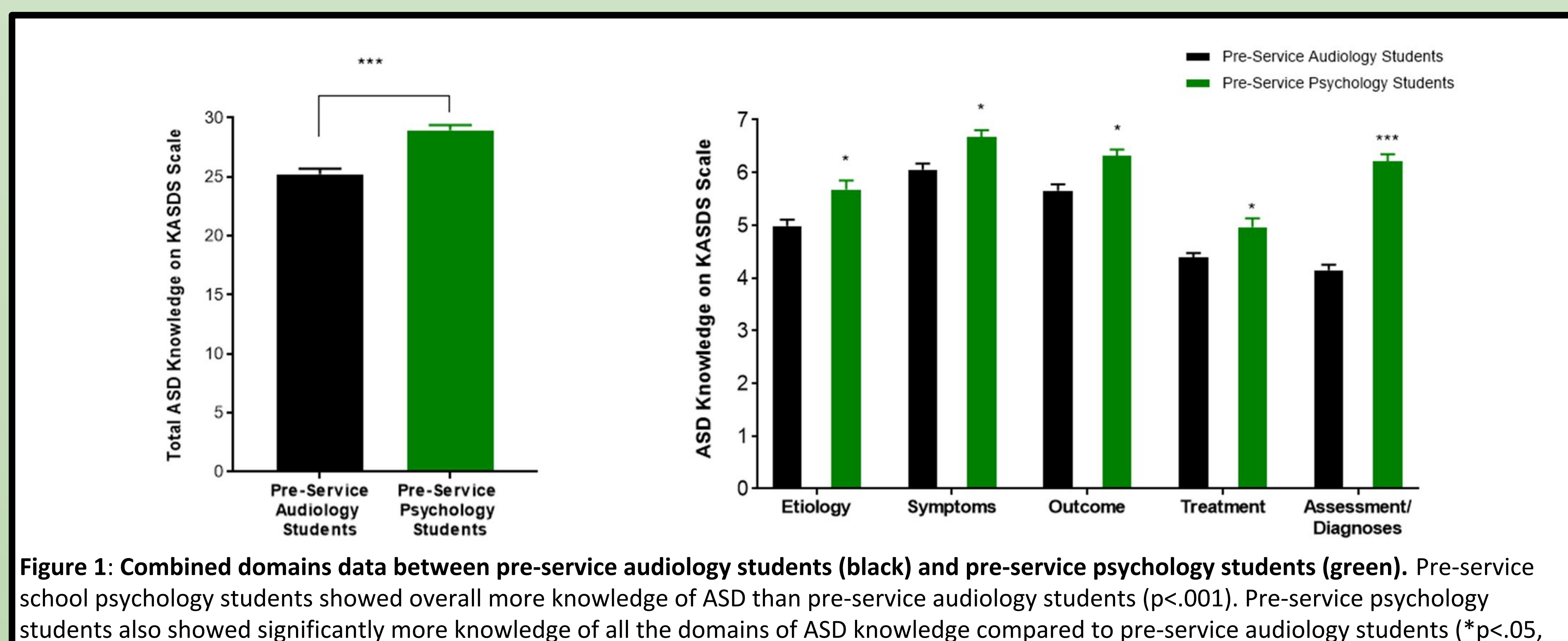


Figure 1: Combined domains data between pre-service audiology students (black) and pre-service psychology students (green). Pre-service school psychology students showed overall more knowledge of ASD than pre-service audiology students ($p < .001$). Pre-service psychology students also showed significantly more knowledge of all the domains of ASD knowledge compared to pre-service audiology students ($*p < .05$, $***p < .001$).

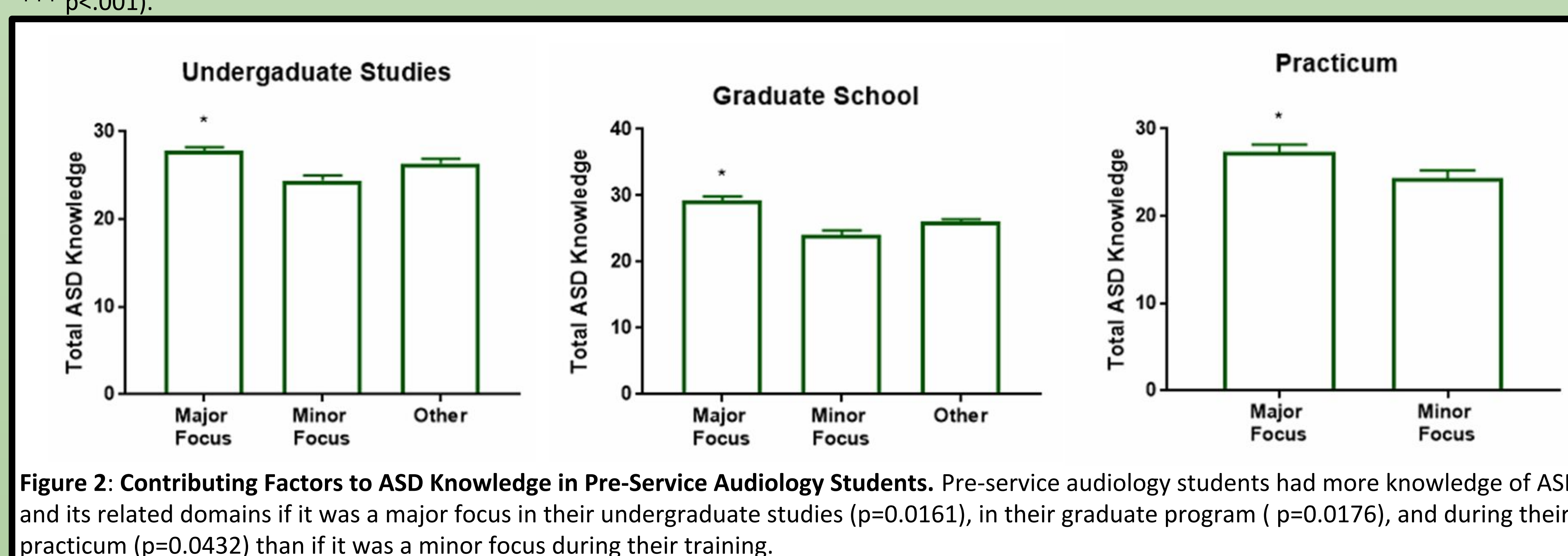


Figure 2: Contributing Factors to ASD Knowledge in Pre-Service Audiology Students. Pre-service audiology students had more knowledge of ASD and its related domains if it was a major focus in their undergraduate studies ($p = 0.0161$), in their graduate program ($p = 0.0176$), and during their practicum ($p = 0.0432$) than if it was a minor focus during their training.

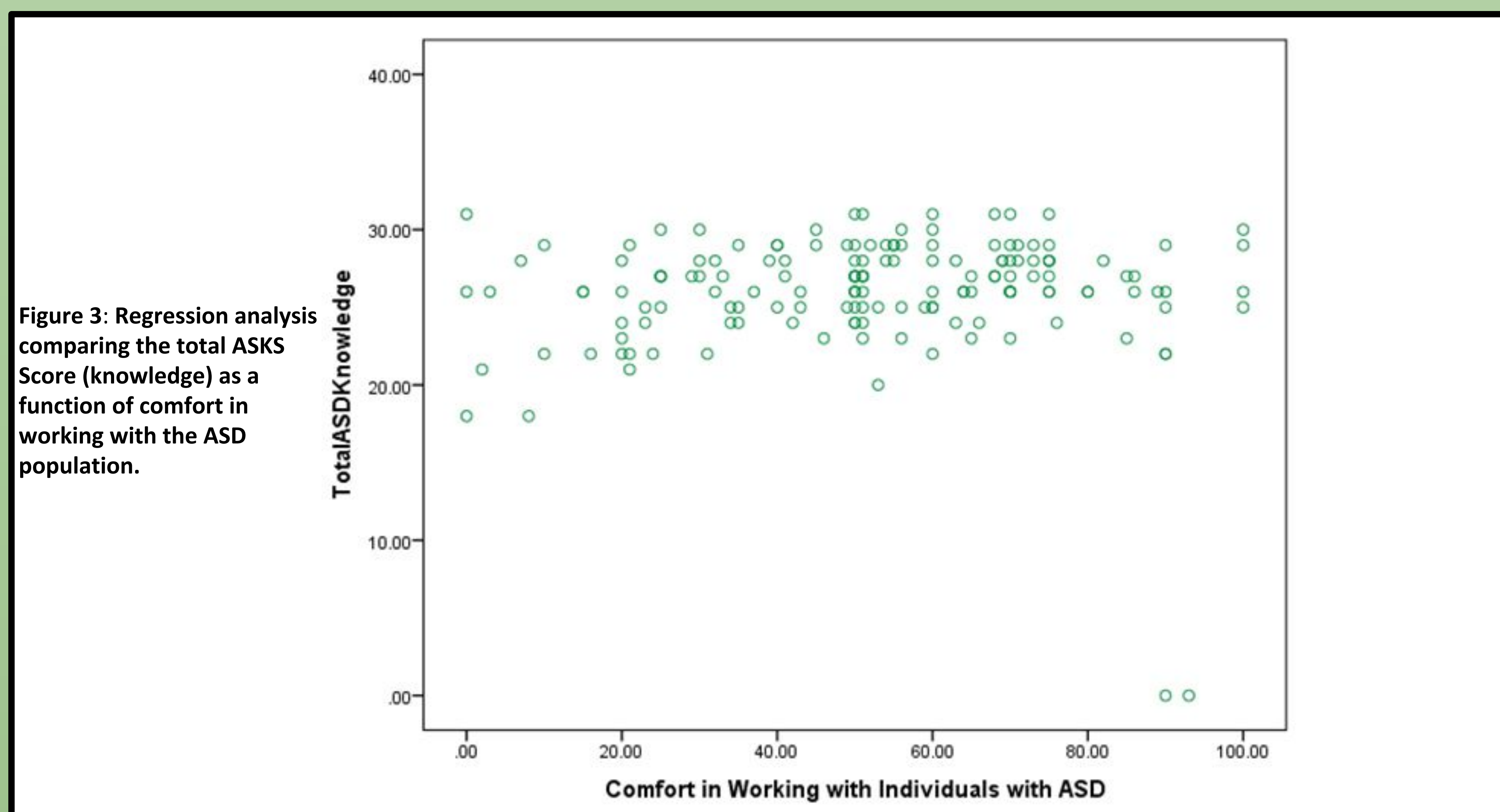


Figure 3: Regression analysis comparing the total ASKS Score (knowledge) as a function of comfort in working with the ASD population.

References

- 1 - American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders (DSM - 5)*. Arlington. <http://doi.org/10.1176/appi.books.978089042596.744053>
- 2 - Bakare, M.O., Ebigbo, P.O., Agomoh, A.O., & Menkiti, N.C. (2008). Knowledge about childhood autism among health care workers (KCAHW) questionnaire: Description, reliability and internal consistency. *Clinical Practice and Epidemiology in Mental Health*, 4(17), 1-8.
- 3 - Centers for Disease Control and Prevention (2016). Autism spectrum disorder data and statistics. Retrieved from <https://www.cdc.gov/ncbddd/autism/data.html>.

Discussion

- In each domain examined by the ASKS, pre-service school psychology students outperformed pre-service audiology students, which was to be expected considering that ASD is a major focus of school psychology programs (figure 1).
- Pre-service audiology students that had received specific training regarding ASD outperformed their audiology peers who had not (figure 2).
- A strong correlation was observed between respondents' total ASKS score and their self-reported comfort in working with the ASD population (figure 3).
- The sample size of pre-service audiology students was much larger than those obtained from the pre-service psychology students, which traditionally results in a tendency to declare a statistical significant effect. However, by completing a robust analysis of variance, the data reveals that the large sample size in the pre-service audiology respondents resulted in no detectable differences.

Limitations to this study include:

- The use of homogeneous sample of pre-service students all around the same level of experience and knowledge.
- There is currently no significant support of external (criterion) validity of the ASKS measure, but it is currently in progress.

Conclusion

- Pre-service school psychology students receive more training regarding ASD etiology, symptoms, outcomes, assessment, and treatment and, therefore, self-report that they are more confident to work with the ASD population when compared to pre-service audiology students.
- Similarly, pre-service audiology students that receive training demonstrated increased knowledge in each domain examined by the ASKS, as well as a higher self-reported confidence in working with the ASD population overall.
- The inclusion of specific ASD training as part of the standard Doctorate of Audiology (Au.D.) curriculum may prove useful in better preparing audiologists to work with the ASD population. What requires further examination is whether or not these pre-service audiology students are truly competent in working with children with ASD in the clinical setting, and whether that has a positive impact on earlier diagnosis, treatment, and prognosis as a result.