Addressing Ambiguous Language Deficits Within the Autism Spectrum: A Pilot Study of a Sarcasm Intervention

Cheyanne Sebolt, Angela Ciccia, Ph.D., CCC-SLP, & Leah Beekman, M.S., CCC-SLP
Department of Psychological Sciences, Communication Sciences
Case Western Reserve University

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UNIVERSITY EST. 1826
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ABSTRACT

Background: The capability to understand ambiguous language is extremely important (Le Sourn-Bissaoui et al 2012). This pilot study focused on one specific area of ambiguous language: sarcasm. By the middle school years, children are beginning to use sarcasm frequently (Volden and Phillips 2010). The specific middle school population that this study focused on involved those in middle school with autism spectrum disorder (ASD), because this population often does not understand sarcasm (Volden and Phillips 2010). For this pilot study, a 13-year-old diagnosed within ASD, specifically a high-functioning ASD diagnosis, was recruited and then tested with a series of standardized tests and two non-standardized tests. The standardized tests used were the CASL, KBIT, CBCL, CDI and ADHD Scale. The two non-standardized tests measured the participant's ability to identify multiple-meaning words, oxymorons, and metaphors and the participant's ability to identify, respond to, and manipulate sarcastic or sincere scenarios. The purpose of this pilot study was to determine if an intervention in sarcasm could successfully be used to improve understanding and use of sarcasm and if those skills were transferable to the participant's ability to define other forms of ambiguous language. Implications of these results could eventually lead to a normalized intervention used by speech-language pathologists to teach sarcasm.

Materials & Methods: Recruitment took place through word of mouth and personal connections. Students were eligible to participate if they were aged 12-14 years and were diagnosed with ASD.

Data Analysis: This was a pilot study testing one thirteen year old female diagnosed with high functioning ASD. A total of 30 stimuli (10 multiple-meaning words, 10 oxymorons, and 10 metaphors) were presented to the participant twice: once during pre-testing and once during post-testing. The CASL and the KBIT were also administered during both pre- and post-testing. Baseline of sarcasm use and understanding were collected over three non-consecutive days and post-testing took place one week after the completion of the intervention. During the four-week intervention, the participant was presented with situations that were either serious or sarcastic. She had to decide which kind of situation was being presented, formulate an appropriate response, and then alter the situation to make it sincere if it was sarcastic, and sarcastic if it was sincere. Each week, the participant was presented with five different situations.

Results: This intervention in sarcasm demonstrated improvements in the understanding of ambiguous language across domains of sarcasm, multiple-meaning words and oxymorons. The effectiveness of the stimuli tested in this pilot study will be taken into consideration when the intervention we were piloting here makes adjustments on its way to becoming fully developed. In the future, this intervention could be implemented by speech-language pathologists to teach sarcasm to their clients with language disorders.

INTRODUCTION

❖ ASD is characterized by deficits in social communication and social interaction across multiple contexts and restrictive and repetitive behavior patterns, interests, or activities (Luciano, 2016).

❖ Ambiguous language is an umbrella category itself, but among others, it includes similes, metaphors, oxymorons, sarcasm, and multi-meaning words.

❖ The capability to understand ambiguous language is extremely important, since it is used in casual conversation daily (Le Sourn-Bissaoui et al, 2012).

❖ Starting in elementary school, ambiguous language is used to teach children, and by the middle school age, children are using sarcasm quite frequently (Volden and Phillips, 2010).

❖ It is within the scope of practice of a speech-language pathologist (SLP) to teach social pragmatic skills (ASHA), meaning that it is the responsibility of the SLP to teach types of ambiguous language, such as sarcasm.

MATERIALS & METHODS

❖ The following study was approved by the Case Western Reserve University IRB.

❖ The participant was recruited through word of mouth.

❖ Intake based on responses when prompted during one on one session as well as pre- and post-testing scores.

❖ The intervention presented various scenarios paired with pictures. Each scenario ended in either a sincere or sarcastic comment.

❖ Participant was instructed in how to identify, respond to and alter sarcastic and sincere remarks.

❖ Inclusion criteria: ages 12-14 years old and diagnoses of ASD.

❖ Exclusion criteria: outside of age range and/or no diagnoses of ASD.

RESULTS SUMMARY

Figure 1: Comparing Pre- and Post-Test Ambiguous Language Scores
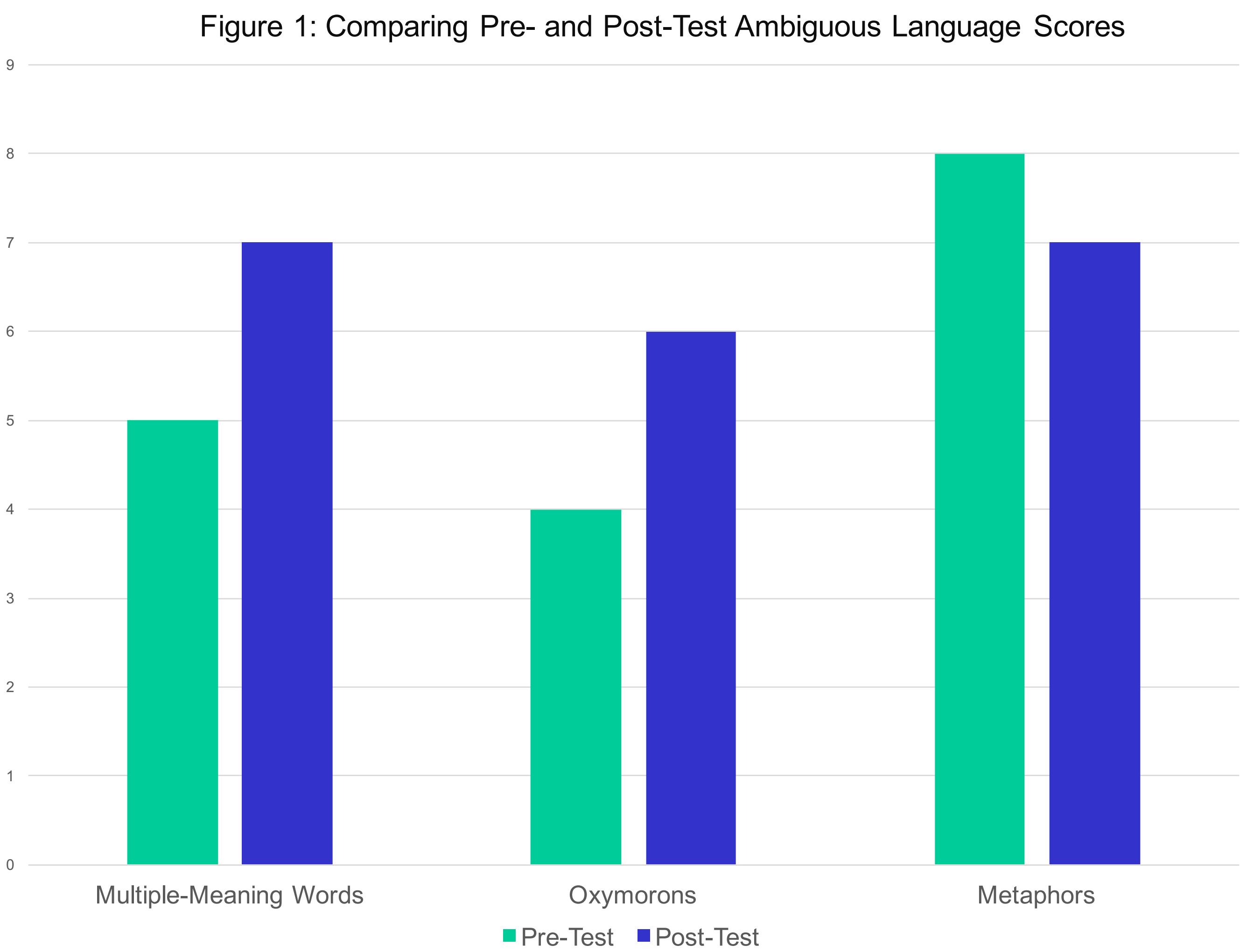

Figure 1: The pre-test scores are compared to the post-test scores in the ambiguous language tests. For this test, the participant was shown the word or phrase on a card, and asked to explain its meaning. There were ten cards for each category.
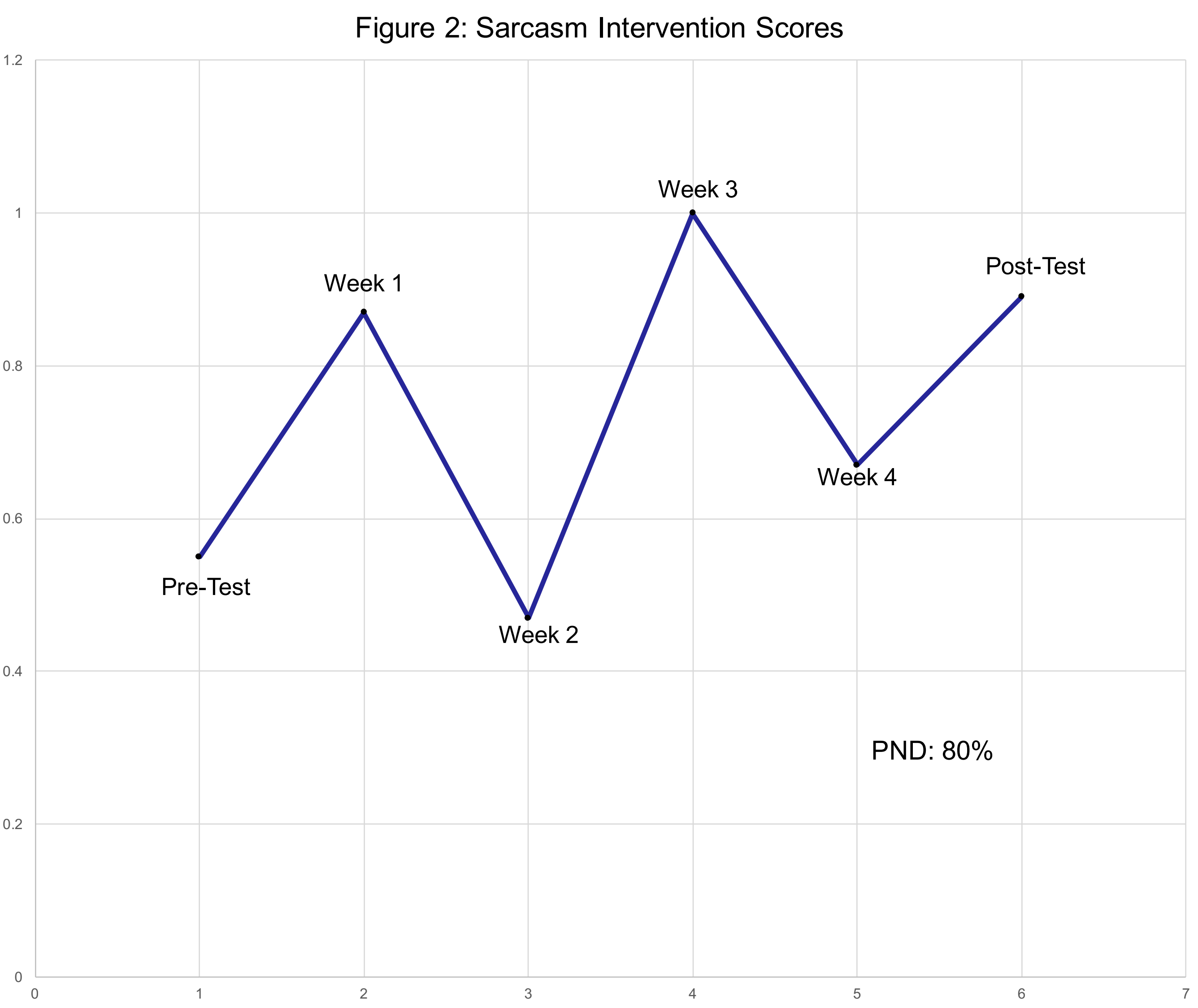
Figure 2: Sarcasm Intervention Scores

Figure 2: The Sarcasm Intervention scores are plotted in order to display week to week changes. These scores represent the percentage of correct answers the participant gave during each session. The percentage of nonoverlapping data (PND) is also displayed. A PND of 80% tells us that the intervention was moderately effective.

RESULTS DESCRIPTION

❖ The participant commented on the intervention when we finished post-testing, saying that she was able to use sarcasm and understand it more comfortably after the intervention was complete.

❖ By the second session, the participant commented that the intervention helped her in a situation that week when someone used sarcasm. She remembered the steps that were taught to her in the intervention.

❖ The parents of the participant also commented on how their daughter was using sarcasm at home appropriately. The father of the participant did have to verify that she was using it, but more so because it was a surprise that she was using it in her daily life.

❖ In the intervention, the aspect of sarcasm we focused on the most was voice. Interestingly enough, we had to work more on changing her voice when she was being sincere, rather than when she was being sarcastic. The participant was aware that her voice was very flat and monotone, often making her listener confused as to whether she was being sincere or sarcastic. The correct usage of her voice improved throughout the intervention.

❖ Other comments the participant made after we finished with the post-testing included her marked improvement of realizing the difference between someone being sincere and someone being sarcastic. She also noted that she memorized the pattern of the cards.

❖ The participant enjoyed how she was able to work on her voice during the intervention. This was something she knew she struggled with. She recognized that her strengths in the aspects of sarcasm were with her face and the words she used.

CONCLUSION

❖ The stimuli tested in this research are being used to perfect the layout of a pre- and post-test for a future language intervention, in sarcasm, for students with language disorders.

❖ The participant did show improvements in her ability to understand, respond to and alter sarcastic and sincere remarks. Additionally, she showed improvement in two of the three target domains of ambiguous language that were tested.

❖ Limitations: the impact of this pilot study is obviously not extremely foundational, since it was conducted on only one participant. Also, the participant noting that she memorized the card context would be considered a limitation as this does not necessarily indicate the ability to generalize this skill.

❖ In the future, this intervention will be tested on a different population. With this pilot study, we were focusing specifically on one 12-14 year old participant with an ASD diagnosis, but future studies will encompass populations that specifically include language disorders. This means the intervention will be tested on a much greater scale, which will be beneficial as we research its effectiveness before it is hopefully implemented as a normalized intervention.

❖ The most important take home message of this researched pilot study is that the participant did make improvements across the board. Keeping in mind this was a case study on this single participant, the research does need to be expanded upon. Steps are already being taken to research the sarcasm intervention on a broader scale.

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