PSYCHOEDUCATIONAL AND BEHAVIORAL INTERVENTIONS IN AUTISM SPECTRUM DISORDER: IS THE ABA METHOD REALLY THE MOST EFFECTIVE?

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SUMMARY

Autism spectrum disorder (ASD) is a neurodevelopmental disorder characterized by deficits in communication, social interactions, and repetitive behaviors. Applied Behavior Analysis (ABA) is a prominent intervention aimed at modifying problem behaviors in individuals with ASD. ABA focuses on analyzing environmental contingencies and using operant conditioning to promote functional behaviors. Despite its widespread use, the effectiveness of ABA remains debated, with mixed scientific evidence. Some studies highlight its benefits, while others point out biases and limitations. Further research, including randomized controlled trials, is needed to determine the most effective interventions for ASD, considering the diverse needs of individuals and the potential biases in current studies.

Key words: Autism Spectrum Disorder – Applied Behavior Analysis - cognitive behavior

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INTRODUCTION

Autism spectrum disorder (ASD) is a neurodevelopmental disorder that appears at an early age, usually in the early stages of development, causing significant impairment in personal, social, school, and work functioning. Autism, while falling into the diagnostic macrocategory of neurodevelopmental disorders, differs from the others in that it is characterized by persistent deficits in communication and social interactions in multiple contexts, behavior patterns, and restricted and repetitive interests or activities. In recent years, there has been growing attention in the scientific community to Applied Behavior Analysis (ABA) the applied branch of Behavior Analysis, the psychological science developed in the U.S. since the 1950s. The purpose of the ABA method is to promote the well-being of the individual with ASD through the modification of problem behaviors (such as self-injury) into behaviors deemed functional. The problem behaviors were a way for individuals with ASD to communicate and connect with each other; therefore, it remained urgent to teach a new repertoire of communication skills to extinguish behaviors harmful to self and others. ABA measures socially relevant behavior by analyzing 2 variables (or environmental contingencies): what happens before the behavior and what happens after; operant conditioning is used in early intervention on ASD as the framework for understanding and, if necessary, modifying the antecedent-behavior-consequence contingencies underlying the child's behavior (Vivanti et al. 2022). The target skills that are affected by ABA intervention are chosen based on the child's functional areas of need and are addressed, especially at the beginning of therapy, through a highly structured approach in the isolated context of a one-on-one interaction with the therapist. ABA intervention can be defined as inclusive if the child's skills that come to be the focus of the intervention are multiple and include social, communication, and adaptive skills, while it can be defined as focused when a single area or behavior is the focus of the intervention.

SUBJECTS AND METHODS

The four main procedures of ABA are: Prompting, Fading, Shaping, Chaining. Within these procedures, specialists can use some specific exercises to achieve the proposed goals of the ABA method including: Verbal Behavior Teaching (VBT), Natural Environmental Teaching (NET), Discrete Trial Teaching (DTT), while the key concepts are: those of Reinforcement, Extinction, Stimulus Control, and Generalization. Despite the contribution of ABA in the scientific community has been substantial, to date it cannot be said to be the most effective treatment against ASD symptoms. Numerous studies have shown the need to do further research on this treatment by including randomized control trials research and controlling for possible bias, and it is also advisable to compare experiments with ABA treatment with other intensive behavioral programs; there are no definitive data available to support the effectiveness of the ABA model according to the Lovaas (1987) method compared with other active and similarly structured treatments, i.e., there is not yet enough data to determine which of the various structured models of therapeutic intervention is most effective

RESULTS

The scientific evidence on ABA is very mixed. Some reviews describe ABA intervention as effective on several outcomes including core symptoms of autism

and recommend it as first-line (Medavarapu et al. 2019), while other reviews report it as not effective (Sandbank et al. 2020). The diversity of these approaches depends on the methodology of clinical trials that are included and their quality. The National Institute for Health and Care Excellence (NICE) guidelines take a different approach and refer to ABA as an applied science and do not consider it as a single intervention. The NICE guidelines justify this by saying that the definition of a therapy as ABA depends on the style of measuring progress, the way in which teaching strategies are structured, the terminology used to define those strategies, and the professional training of the therapist. However, the NICE guidelines also emphasize how different interventions incorporate ABA principles within them.

DISCUSSION

Biases in Applied Behavior Analysis (ABA) studies can significantly impact the reliability and validity of research findings. Selection bias occurs when participants chosen for the study do not represent the general population of individuals with ASD, potentially skewing results. Publication bias is another concern, as studies with positive outcomes are more likely to be published, creating a skewed perception of ABA's effectiveness. Confirmation bias can also play a role, where researchers may unintentionally focus on data that supports their hypotheses while overlooking contradictory data, leading to an overestimation of ABA's effectiveness.

Measurement bias arises from the tools and methods used to measure outcomes, which, if not reliable or valid, may not accurately reflect the true effects of the intervention. Implicit bias refers to unconscious attitudes or stereotypes that can influence researchers' and practitioners' behavior and decisions, potentially affecting how interventions are designed, implemented, and evaluated. Attrition bias occurs when participants drop out of the study at different rates, which can affect the study's outcomes if those who drop out are systematically different from those who remain.

Addressing these biases requires rigorous study designs, including randomized controlled trials, and transparent reporting of methods and results. Incorporating diverse perspectives, such as those from the autistic community, can also help ensure that the research is more inclusive and representative.

CONCLUSIONS

After analyzing the various treatments through the review and the various articles considered, it became apparent that currently the measures of effectiveness of the interventions considered are still not fully understood. Scientific opinions on the ABA method are very mixed; in fact, some reviews describe the ABA method as effective, while others point out its limitations; what emerged, in my studies, is that the reviews that found the method to be effective did not, however, keep important biases in check, thus altering the outcome. Finally, it can be argued that having received treatment certainly affects behavior improvement, but it is not clear which treatment is more effective; while almost all studies have been successful with respect to treatments implemented with and for parents, and this needs to be carefully considered when initiating early interventions.

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