Critical Review: Do children with Autism Spectrum Disorders (ASD) have improved language and communication skills following implementation of a gluten- and/or casein-free diet?

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This critical review examines the effectiveness of gluten- and/or casein-free diets in improving the language and communication skills of children diagnosed with Autism Spectrum Disorder (ASD). Six studies including a single-blind randomized control trial (RCT), a randomized double-blind repeated measures crossover study, two single-group design studies, one cohort study, and one non-experimental single-group study were evaluated in the review. Significant improvements in the language and communication skills of children diagnosed with ASD were found within a few months to one year of beginning the dietary changes. Significant improvements in additional areas were also found. As a number of common weaknesses were identified across studies, evidence for

condition is very challenging in these types of studies; however, this weakness introduces the question of whether parental and/or experimental biases affected the results.

Measurement Tools and Outcome Measures

Content validity was another weakness among most of the reviewed studies. The language and communication skills of participants were often assessed using one or two measures, which did not provide comprehensive evaluations of these skills. In the Whiteley et al. (1999) study, only parental questionnaires, surveys and parent/teacher observations were used to assess language and communication changes. Although information from these sources is extremely valuable, researchers should complement this data using a variety of language and communication assessment measures. Both formal and informal measurement tools would be particularly useful in achieving this goal.

Statistical Analyses

Weaknesses pertaining to statistical analyses

the effectiveness of diet modification in this population; however, the available research is limited and inconclusive. It is recommended that further research be conducted, and that researchers attempt to implement the following in their studies: 1) larger sample sizes, 2) smaller age ranges, 3) control groups, 4) monitoring of dietary intake, 5) blinding researchers and parents to dietary assignment, 6) comprehensive language and communication assessment batteries.

Conc usions

Knowledge of the best available scientific research on gluten- and/or casein-free diets is of great value to health-care professionals who work closely with parents of children diagnosed with ASD, as they are popular treatment choices. Overall, research proposes some significant improvements in the language and communication skills, amongst others, following dietary intervention in children diagnosed with ASD. However, a number of common weaknesses were identified in the examined studies. Future research incorporating larger sample sizes, smaller age ranges, control groups, dietary