



GLUTEN AND CASEIN FREE DIET AND TRAINING STRATEGIES OF DEVELOPING RECEPTIVE LANGUAGE SKILLS AMONG CHILDREN WITH AUTISM SPECTRUM DISORDERS

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ABSTRACT

This study aimed to investigate “Gluten and Casein Free Diet and Training Strategies of Developing Receptive Language skills among Children with Autism Spectrum Disorders”. The study employed a survey design to achieve the objective of the study. Eighty literature reviews have been collected from several sources i.e. multidisciplinary journals, books (India & Abroad), conference proceedings and authentic websites. Studies were gathered by using publish or perish software program. The studies covered three areas i.e. Studies related to the receptive language of CwASD, Review studies from Biology & Microbiology view point and Studies related to technique and strategies used with CwASD. The study found that Discrete Trial Teaching (DTT) and Incidental Teaching Strategy (ITS) are the most common strategies used in developing receptive language and social communication skills, there is a serious argument among researchers about the effectiveness of casein- and gluten-free diet strategy in relieving symptoms of autism and increasing the ability to focus and pay attention. The study recommended that following a diet free of gluten and casein for a long period of not less than nine months can lead to effective results in the development of language skills and the ability to focus and attention.

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INTRODUCTION

Most traditional teaching methods used in working with autistic children rely heavily on auditory instruction. Autism is a spectrum disorder, with a wide variety of needs and abilities within the range of children with the disability, and not all children within this grouping benefit from copious oral instruction (Tissot, C., & Evans, R., 2003). Presently there is no consensus on the specific behavioral treatment of choice for targeting language in young nonverbal children with autism (Schreibman, & Stahmer, 2014).

Receptive language (to act based on an auditory stimulus) is an important and necessary foundational skill for children with autism. Several strategies establishing this repertoire have been developed within the field of early intensive behavior intervention (EIBI). An electronic literature review with the key words “discrimination training” reveals extensive research by behavior analysts. However, “receptive language training” has received far less attention (Pelios&Sucharzewski, 2004).

The researchers found that most of the research focuses on developing expressive language skills among children with ASD, while the receptive language skills are taken place first in the normal development of the language. The child cannot

speak before he could listen and understand. The study highlighted Gluten and Casein Free Diet (GCFD) and other Training Strategies for Developing Receptive Language skills

Objective of the study

To analyse the systematic review of literature of training strategies used to develop receptive language skills among Children with Autism Spectrum Disorder (CwASD).

Rationale of the study

It is a well-known fact that approximately half of the autistic population fails to develop speech, and the majority fails to use speech in a functional manner when it does develop. For those children who do develop speech, their ability to communicate is often less advanced than their peers. These children may display speech that is often characterized by short utterances, lack of appropriate use of I/you pronouns, here/there constructions, and now/then relations, idiosyncratic use of words, and restricted use of grammatical structures furthermore, language comprehension may also be severely impaired. Therefore, the researchers found that it is necessary to highlight the training strategies used to develop receptive language skills among children with ASD.

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RESEARCH METHODOLOGY

Analytical research has been employed in order to obtain the objective of the study.

Statistical Analysis

The researcher has been adopt meta-analysis in the systematic review to obtain the objective of the study.

LITERATURE REVIEW

McGee, G. G., et al., (1985) compared incidental teaching and traditional training procedures, the study was applied to a sample of three children with autism spectrum disorder and language retardation, who were taught expressive use of prepositions to describe the location of favourite foods and games. The study concluded that incidental teaching has important implications for language programming and teacher training, indicating that it should be included as a standard component in language development curricula for children with autism and other children with linguistic delay.

Warren, S. F., & Kaiser, A. P. (1985) reviewed and critique research on incidental teaching strategy. Studies of this approach and the implications of its use are discussed with children with language delay. The results indicated some of the important points that are; incidental teaching teaches targeted skills effectively in the natural environment, leads to generalizing these skills in new situations, resulting in gains informal jobs, and perhaps in the strategic aspects of the language.

Paul, R., et al., (1988) aimed to compare two groups of children with language disorders (one with ASD& other with relatively specific language impairment). The study concluded that both groups resemble normal grammar, corresponding to receptive language age.

MacDuff, G. S., et al., (1988) assessed the effects of a brief (5-day) training procedure in helping trainees learn to engage in incidental teaching. The results showed that this cost-effective and time-efficient training procedure not only enabled therapists to engage in incidental teaching with severely language-delayed autistic children, moreover promoted the generalization of their skills across materials, settings, children, and group size.

Miranda-Linné, F., & Melin, L. (1992) compared two strategies for teaching children with ASD, which are, Incidental teaching and traditional discrete-trial procedures. The results concluded that although children with autism take longer to learn through occasional teaching procedures, once they gain the ability, it may be more permanent. It is recommended that occasional teaching procedures be included in future language development programs for children with autism.

Tjus, T., et al., (1998) conducted a study on the use of multimedia program that was developed to enhance the language and reading development of children with autism. The study concluded that the intervention improved reading and language development and that children ASD with different cognitive abilities might benefit from a strategy that combines a stimulating multimedia program with focused and positive interactions with the teacher.

Dockrell, J. E. (2001) identified the difficulties involved in assessing preschool children's language development. It is

concluded that there are no simple assessment tools that identify and assess language development. Moreover, the use of single measures is considered inadequate for determining whether a child at any age has a typical or delayed language.

TagerFlusberg, H. (2004) compared children with ASD with groups of normal children whose characteristics are identical in terms of age, IQ, or mental age, to identify aspects of the language that suffer from a unique weakness in autism. The study concluded that this approach explored individual differences within a group in language performance. The study also recommended proposing an alternative strategy that focuses on identifying the complex expression of the language phenotype in Autism across the full spectrum of the syndrome.

Francis, K. (2005) evaluated widely used interventions for children with ASD according to specific research criteria. The conclusions are less than favourable: while some interventions do have empirical support, others have been proven to have no positive effects, and no robust data are favouring one approach over the others. Nevertheless, several criteria for choosing between treatment options are briefly discussed.

Ryan, C. S., & Hemmes, N. S. (2005) examined instructors' discrete-trial teaching responses after a performance-based training procedure. The results showed that the mean accuracy of performance for the instructors was 92% or above across 10 sessions. These data were contrasted with the substantially lower levels of accuracy from normative data of instructors conducting sessions in a comparable setting. The study concluded the importance of requiring criterion-level performance during training.

McGee, G. G., & Daly, T. (2007) evaluated an episodic teaching approach to promote the use of age-appropriate social phrases. The study concluded that occasional teaching facilitated systematic fading procedures to transfer stimulus control from contrived cues needed to teach an autistic child to say age-appropriate social phrases and circumstances in everyday situations.

Thurm, A., (2007) compared the nonverbal ability, receptive communication, expressive communication, and socialization of a sample of 118 children. Early shared interest in addition to vocal and motor imitation skills was more impaired in children who did not develop language by age 5 (but who had relatively strong nonverbal cognitive skills) compared to children who developed language by age 5.

Downs, A., et al., (2008) found out the practicality and effectiveness of the two delivery models to provide discrete experimental teaching (DTT) to children with developmental disabilities within a pre-school program in several performance areas (communication, motor skills, language, social/adaptive behaviour, and cognition). The results concluded that DTT has the potential to be used practically and effectively in preschool programs to positively influence the learning and development of young children with developmental disabilities.

Luyster, R. J., et al., (2008) investigated language in young children with autism and to identify early associations of receptive and expressive language in this population. The results found good agreement between different measures of early language. Significant concurrent indicators of receptive language included gestures, nonverbal cognitive ability, and response to shared attention. For expressive language, the most

important indicators were non-verbal cognitive ability, gestures, and imitation.

Murray, D. S., et al., (2008) examined the relationship between initiation and response to shared interest and the receptive and expressive language components of a sample of 20 children with ASD. The results concluded that the ability to respond to the mutual interest bids of others was positively correlated with receptive language scores on MSEL and mean speech length in children with autism. Also, there was no relationship between the ability to initiate a shared interest and the selected components of the examined language.

Owens, G., et al., (2008) stated that LEGO therapy and the Social Use of Language Programme (SULP) were evaluated as social skills interventions for 6–11-year-olds with high functioning Autism and Asperger Syndrome. Results showed that the LEGO therapy group improved more than the other groups on autism-specific social interaction scores (Gilliam Autism Rating Scale). Maladaptive behaviour decreased significantly more in the LEGO and SULP groups compared to the control group.

Millward, C., et al., (2008) determined the efficacy of gluten and/or casein-free diets as an intervention to improve behaviour, cognitive and social functioning in individuals with autism. The results concluded that the one trial included (n=20) reported results on four outcomes. Unsurprisingly in such a small-scale study, the results for three of these outcomes (cognitive skills, linguistic ability and motor ability) had wide confidence intervals that spanned the line of nil effect. However, the fourth outcome, reduction in autistic traits, reported a significant beneficial treatment effect for the combined gluten and casein-free diet.

Jones, L. (2009) examined the effects of a parent training program teaching discrete trial teaching (DTT) and incidental teaching (IT) methods using a parent training manual. The results showed that all of the Parents As we're able to learn and apply DTT and IT in teaching their children. All Parent A's were then able to teach Parent B's how to use DTT and IT without additional training from the experimenter. The generalization effects of learning skills in multiple environments with different people was also examined and discussed.

Hsu, C. L., et al. (2009) examined the effect of gluten and casein on a child with ASD, as a boy with autism, suffers from gastrointestinal problems such as frequent vomiting after eating and severe constipation. At 42 months, the baby was put on a gluten- and casein-free diet. After two and a half months, behaviour, social communication, and the child's relationships improved, including eye contact and verbal communication. At the age of five and a half, the child was able to play and share games with his brother and other children, and it was noticed that the behaviour was closer to the behaviour of an uninfected child. The results of the study also included a decrease in the rate of vomiting after eating and thus a significant increase in body weight and height.

Odom, Samuel L., et al., (2010) provided evaluative information upon which service providers, family members, and researchers could make decisions about model adoption, selection for a family member, or future research. The results showed that as a group, CTMs were strongest in the operationalization of their models, although relatively weaker

in the measurement of implementation, and with notable exceptions, weak in evidence of efficacy.

Vismara, L. A., & Rogers, S. J. (2010) reviewed ABA intervention approaches, some of which are designed as comprehensive programs aiming to address all areas of developmental need, while others are skills-based or directed toward a specific set of specific objectives. However, the results indicated that both types of approaches are effective in improving communication, social skills and problem behaviour management for children with autism. The implications of these findings are discussed concerning important research areas not yet fully explored.

Johnson, C. R., et al., (2011) involved a three-month, prospective, open-label, randomized, parallel groups design of a GFCF diet compared to a healthy, low sugar diet (attention control) child with ASD. Both treatment groups evidenced some gains across a range of variables, including measures of language, behaviour, and ratings of the core features of ASD. No statistically significant differences were noted between treatment groups. The results do not support the use of a GFCF diet in ASD, a greater period may be required for treatment before gains can be observed.

Dingfelder, H. E. & Mandell, D. S., (2011) described reasons why efficacious interventions for autism are rarely adopted, implemented, and maintained in community settings, all revolving around the perceived fit between the intervention and the needs and capacities of the setting. Finally, the researchers suggested strategies for intervention development that may increase the probability that these interventions will be used in real-world settings.

Pfeiffer, Beth A., et al., (2011) established a model for randomized controlled trial research, identified appropriate outcome measures, and address the effectiveness of sensory integration (SI) interventions in children with ASD. Results identified significant positive changes in Goal Attainment Scaling scores for both groups; more significant changes occurred in the SI group, and a significant decrease in autistic mannerisms occurred in the SI group. No other results were significant. The study discusses considerations for designing future outcome studies for children with ASD.

Kurt, O. (2011) compared the efficacy of two separate experimental teaching procedures for teaching receptive language skills in two children with ASD. The results showed that a separate experimental teaching procedure in which simple verbal instructions were combined was more effective and efficient in enhancing the acquisition of comprehensible language skills for both children. The study concluded that conducting separate experimental teaching in which verbal instructions were delivered alone was not effective for any of the training groups across students.

Geiger, K. B., et al., (2012) compared the traditional model of DTT to the DTT version wherein the instructions were included in the context of a more natural and activity-based environment. The results showed that for boys, both conventional and combined DTT were both effective and efficient. The study concluded that the two procedures had similar levels of positive and negative effect and were equally favoured by one participant while the combined DTT produced a more positive effect and the other preferred more.

Grossman, R. B., & Tager-Flusberg, H. (2012) aimed to conduct a secondary analysis to compare performance in receptive tasks versus expressive tasks by adolescents with autism and their normal development peers. The study concluded that adolescents with autism spectrum disorder can achieve receptive accuracy in nonverbal communication, but they exhibit significant defects in expressive skills across a range of tasks that may have a negative impact on the social communication process.

Simpson, K., et al., (2013) found out the effectiveness of music in sharing and learning. Music was used to involve children with autism in a receptive classification intervention. The results revealed that children with autism were more engaged in the singing state than in the spoken state although there was significant variation in the levels of participation among the participants. A relationship was also found between sharing and learning.

Walton, K. M., & Ingersoll, B. R. (2013) found out the influence of orienting cues on receptive and expressive language in children with ASD and children with typical development. The study was applied to a sample of 14 children with autism. Results indicated that children with autism spectrum disorder misidentified words to focus their attention during re-orientation of experiences, but showed a trend toward correct receptive mapping during orientation experiments. During expressive experiments, both groups were more likely to successfully map during follow-up experiments and less likely to successfully map while re-orienting experiments.

Hurwitz, S. (2013) identified and evaluate well-controlled studies of the GFCF system implemented with children with autism. The literature review from 1999 to 2012 identified five studies that met the inclusion criteria. Search quality was examined using evaluative evidence and ranged from appropriate to strong. In three of the studies, no positive effects of diet on behaviour or development were reported, even after double-blind trials of gluten and casein.

Whiteley, P., et al., (2013) aimed to examine the evidence that a gluten-free (GF), casein-free (CF) diet, or a gluten and casein-free (GFCF) diet can alleviate basic and peripheral symptoms and improve developmental outcomes in some cases of the autism spectrum. With the publication of medium- and long-term controlled cohort studies of a gluten- and casein-free diet combined with more standardized biological findings potentially related to the intervention, the emergence of the diet-related autism phenotype appears to be supportive of a positive pattern. Dietary effect in some cases. Further discussion of whether such dietary intervention should form part of the best practice guidelines for autism spectrum conditions (ASCs) and beyond is representative of food-sensitive gastrointestinal autism is warranted.

Whiteley, P., et al. (2014) stated that strong evidence has emerged that the diet in children on the autistic spectrum can have a significant role to play in the management of their symptoms. A growing body of research reveals that some challenging characteristics present in autism may be positively affected by the introduction of a gluten- and casein-free (GFCF) diet. Moreover, exploring the benefits of a gluten and casein-free diet offers an easy-to-read alternative to sifting through the science.

Sepulveda, D. J. (2015) compared three strategies for teaching receptive discriminations which are; simple/conditional (Procedure A), conditional only (Procedure B), and conditional discrimination of two target cards (Procedure C). The results showed that additional training steps included in the simple/conditional and conditional-only procedures may not be necessary to teach children with autism how to distinguish receptively. But for all participants, Action C appears to be the most efficient and effective procedure for educating young children with receptive discrimination in autism.

Manwaring, S. S., et al., (2017) examined the relationships between gestures, fine movement and language in young children with autism compared to a group of normal children using multiple measures and methods in the framework of structural equation modelling. This study concluded that the research on the relationship between nonverbal communication and language by supporting the idea of the basic structure of using gestures that include fine motor ability and relate to language in young children with autism.

Cieślińska, A., et al., (2017) reviewed comprehensively the use of dietary interventions to alleviate prevalent brain diseases, including Autism Spectrum Disorder (ASD). The study concluded that large-scale, good-quality trials are needed because current evidence on the effectiveness of the GFCF diet is still insufficient. Additionally, the age and duration of the dietary intervention play a role in the effectiveness of the gluten and casein-free diet. This is the reason why all of these factors must be taken into consideration to give proper advice on whether or not to follow this diet.

Piowarczyk, A., et al., (2018) systematically updated evidence on the effectiveness of a gluten-free and casein-free (GFCF) diet as a treatment for ASD in children. Six experiments were conducted with 214 participants were included. The study found that there were no statistically significant differences in ASD core symptoms between groups, as measured by standardized scales, with few exceptions. The study concluded that there is evidence that the GFCF diet is beneficial for symptoms of ASD in children, even if only slightly.

Robinson, K. L. S. (2018) evaluated an incidental teaching procedure on the acquisition of both rates of manding behaviour as well as a generalized mand repertoire. The results indicated that educators can increase language production of children with autism by creating an environment rich in motivating stimuli, contriving the environment to create situations where the learner initiates toward the instructor and using prompting strategies to expand language production rather than anticipating the learners wants/needs and meeting them. Using the strategies described in this study will help teachers increase language production and the learner's ability to create novel language, rather than having to teach each concept in isolation as with more analogy teaching procedures such as discrete trial training.

González-Domenech, P. J., et al., (2019) determined the effect of a gluten and casein-free diet (GFCF) on behavioural changes in children and adolescents with autism. The study concluded that following the GFCF diet for three months did not show significant changes in the behavioural symptoms of autism and recommended more studies of this type and increasing the duration as the three months were not sufficient

for the effect of the GFCF diet on the behavioural symptoms of autism.

Tarigan, N., et al., (2020) improved mothers' attitudes, motivations and skills to be able to prepare a GCF diet safe for consumption by ASD children. The study concluded with several results, the most important of which was that the average of the pre-test results on the participants' knowledge about the GCF diet was 45.6. After advising twice using Handbook tools and GCF product handling training, there was an increase in knowledge to 81.9. Moreover, after regular consumption of GCF foods prepared based on this program, more than 50% of participants found an improvement in their children's learning focus and were no longer hyperactive.

Findings

- For long period, researchers have been focusing on the expressive language of CwASD rather than thinking of their receptivity and understanding. Although ASD and comprehension are still a matter of debate, receptively must be assessed among CwASD.
- Many studies confirmed the need to find individual ways to capture language comprehension for children with ASD.
- The researchers emphasized that many strategies require further studies and prove the effectiveness of the intervention for ASD.
- There is a need to search for more appropriate strategies in developing language skills for children with autism spectrum.
- Discrete Trial Teaching (DTT) and Incidental Teaching Strategy (ITS) are the most common strategies used in developing receptive language and social communication skills.
- There is a serious argument among researchers about the effectiveness of casein- and gluten-free diet strategy in relieving symptoms of autism and increasing the ability to focus and pay attention.

CONCLUSION

The present study has attempted to bring into light "Training Strategies of Developing Receptive Language skills among Children with Autism Spectrum Disorders". Forty literature reviews have been collected from several sources i.e. multidisciplinary journals, books (India & Abroad), conference proceedings and authentic websites. Studies were gathered by using publish or perish software program. The studies covered three areas i.e. Studies related to the receptive language of CwASD, Review studies from Biology & Microbiology view point and Studies related to technique and strategies used with CwASD. The researcher comes out a number of recommendation in the following points:

- More than one intervention strategy can be used to obtain effective and faster results in alleviating the symptoms of ASD.
- Following a diet free of gluten and casein for a long period of not less than nine months can lead to effective results in the development of language skills and the ability to focus and attention.
- Expressive language impairment is commonly less severe than receptive language impairment in ASD So,

Receptive language skills would be an appropriate focus for intervention.

- This study will contribute to the research in the field of ASD. It is assumed that future research can draw the base and build on new findings of the present research by overcoming its limitations.

References

- Cieślińska A, Kostyra E, Savelkoul HF. Treating autism spectrum disorder with gluten-free and casein-free diet: the underlying microbiota-gut-brain axis mechanisms. *HSOA J ClinImmunol Immunotherapy*. 2017;3.
- Dingfelder HE, Mandell DS. Bridging the research-to-practice gap in autism intervention: An application of diffusion of innovation theory. *Journal of autism and developmental disorders*. 2011 May;41(5):597-609.
- Dockrell JE. Assessing language skills in preschool children. *Child Psychology and Psychiatry Review*. 2001 May;6(2):74-85.
- Downs A, Downs RC, Fossum M, Rau K. Effectiveness of discrete trial teaching with preschool students with developmental disabilities. *Education and training in developmental disabilities*. 2008 Dec 1:443-53.
- Francis K. Autism interventions: a critical update. *Developmental medicine and child neurology*. 2005 Jul;47(7):493-9.
- Geiger KB, Carr JE, LeBlanc LA, Hanney NM, Polick AS, Heinicke MR. Teaching receptive discriminations to children with autism: A comparison of traditional and embedded discrete trial teaching. *Behavior Analysis in Practice*. 2012 Dec;5(2):49-59.
- González-Domenech PJ, Díaz Atienza F, GarcíaPablos C, Fernández Soto ML, Martínez-Ortega JM, Gutiérrez-Rojas L. Influence of a combined gluten-free and casein-free diet on behavior disorders in children and adolescents diagnosed with autism spectrum disorder: a 12-month follow-up clinical trial. *Journal of Autism and Developmental Disorders*. 2020 Mar;50(3):935-48.
- Grossman RB, Tager-Flusberg H. Quality matters! Differences between expressive and receptive non-verbal communication skills in adolescents with ASD. *Research in autism spectrum disorders*. 2012 Jul 1;6(3):1150-5.
- Hsu CL, Lin CY, Chen CL, Wang CM, Wong MK. The effects of a gluten and casein-free diet in children with autism: a case report. *Chang Gung Med J*. 2009 Jul 1;32(4):459-65.
- Hurwitz S. The gluten-free, casein-free diet and autism: limited return on family investment. *Journal of Early Intervention*. 2013 Mar;35(1):3-19.
- Jones L. A parent training program combining discrete trial training and incidental teaching in the home environment.
- Kurt O. A Comparison of Discrete Trial Teaching with and without Gestures/Signs in Teaching Receptive Language Skills to Children with Autism. *Educational Sciences: Theory and Practice*. 2011;11(3):1436-44.
- Luyster RJ, Kadlec MB, Carter A, Tager-Flusberg H. Language assessment and development in toddlers with autism spectrum disorders. *Journal of autism and developmental disorders*. 2008 Sep;38(8):1426-38.
- MacDuff GS, Krantz PJ, MacDuff MA, McClannahan LE. Providing incidental teaching for autistic children: A

- rapid training procedure for therapists. *Education and Treatment of Children*. 1988 Aug 1;20:5-17.
- Manwaring SS, Mead DL, Swineford L, Thurm A. Modelling gesture use and early language development in autism spectrum disorder. *International journal of language & communication disorders*. 2017 Sep;52(5):637-51.
- McGee GG, Daly T. Incidental teaching of age-appropriate social phrases to children with autism. *Research and Practice for Persons with Severe Disabilities*. 2007 Jun;32(2):112-23.
- McGee GG, Krantz PJ, McClannahan LE. The facilitative effects of incidental teaching on preposition use by autistic children. *Journal of applied behavior analysis*. 1985 Mar;18(1):17-31.
- Millward C, Ferriter M, Calver SJ, Connell-Jones GG. Gluten-and casein-free diets for autistic spectrum disorder. *Cochrane database of systematic reviews*. 2008(2).
- Miranda-Linné F, Melin L. Acquisition, generalization, and spontaneous use of color adjectives: A comparison of incidental teaching and traditional discrete-trial procedures for children with autism. *Research in developmental disabilities*. 1992 May 1;13(3):191-210.
- Murray DS, Creaghead NA, Manning-Courtney P, Shear PK, Bean J, Prendeville JA. The relationship between joint attention and language in children with autism spectrum disorders. *Focus on autism and other developmental disabilities*. 2008 Mar;23(1):5-14.
- Odom SL, Boyd BA, Hall LJ, Hume K. Evaluation of comprehensive treatment models for individuals with autism spectrum disorders. *Journal of autism and developmental disorders*. 2010 Apr;40(4):425-36.
- Owens G, Granader Y, Humphrey A, Baron-Cohen S. LEGO® therapy and the social use of language programme: An evaluation of two social skills interventions for children with high functioning autism and Asperger syndrome. *Journal of autism and developmental disorders*. 2008 Nov;38(10):1944-57.
- Paul R, Fischer ML, Cohen DJ. Brief report: Sentence comprehension strategies in children with autism and specific language disorders. *Journal of autism and developmental disorders*. 1988 Dec;18(4):669-79.
- Pelios LV, Sucharzewski A. Teaching receptive language to children with autism: A selective overview. *The Behavior Analyst Today*. 2004;4(4):378.
- Pfeiffer BA, Koenig K, Kinnealey M, Sheppard M, Henderson L. Effectiveness of sensory integration interventions in children with autism spectrum disorders: A pilot study. *The American Journal of Occupational Therapy*. 2011 Jan;65(1):76-85.
- Piwowarczyk A, Horvath A, Łukasik J, Pisula E, Szajewska H. Gluten-and casein-free diet and autism spectrum disorders in children: a systematic review. *European journal of nutrition*. 2018 Mar;57(2):433-40.
- Ryan CS, Hemmes NS. Post-training discrete-trial teaching performance by instructors of young children with autism in early intensive behavioral intervention. *The Behavior Analyst Today*. 2005;6(1):1.
- Schreibman L, Stahmer AC. A randomized trial comparison of the effects of verbal and pictorial naturalistic communication strategies on spoken language for young children with autism. *Journal of autism and developmental disorders*. 2014 May;44(5):1244-51.
- Sepulveda DJ. Evaluating the effectiveness of discrete trial procedures for teaching receptive discrimination to children with autism spectrum disorders. 2015.
- Simpson K, Keen D, Lamb J. The use of music to engage children with autism in a receptive labelling task. *Research in Autism Spectrum Disorders*. 2013 Dec 1;7(12):1489-96.
- Tager-Flusberg H. Strategies for conducting research on language in autism. *Journal of Autism and Developmental Disorders*. 2004 Feb;34(1):75-80.
- Tarigan N, Siahaan G, Lestrina D. Training of Gluten and Casein Free Snack Processing for Mothers of Children with Autism Spectrum Disorder. *Journal of Saintech Transfer*. 2020 Aug 20;3(1):52-9.
- Thurm A, Lord C, Lee LC, Newschaffer C. Predictors of language acquisition in preschool children with autism spectrum disorders. *Journal of autism and developmental disorders*. 2007 Oct;37(9):1721-34.
- Tissot C, Evans R. Visual teaching strategies for children with autism. *Early Child Development and Care*. 2003 Aug 1;173(4):425-33.
- Tjus T, Heimann M, Nelson KE. Gains in literacy through the use of a specially developed multimedia computer strategy: Positive findings from 13 children with autism. *Autism*. 1998 Jun;2(2):139-56.
- Vismara LA, Rogers SJ. Behavioral treatments in autism spectrum disorder: what do we know?. *Annual review of clinical psychology*. 2010 Apr 27;6:447-68.
- Walton KM, Ingersoll BR. Expressive and receptive fast-mapping in children with autism spectrum disorders and typical development: The influence of orienting cues. *Research in Autism Spectrum Disorders*. 2013 Jun 1;7(6):687-98.
- Warren SF, Kaiser AP. *Incidental Language Teaching: Research and Clinical Perspectives*. 1985.
- Whiteley P, Earnden M, Robinson E. *Autism: Exploring the benefits of a gluten and casein free diet: A practical guide for families and professionals*. Routledge; 2014 Apr 24.
- Whiteley P, Shattock P, Knivsberg AM, Seim A, Reichelt KL, Todd L, Carr K, Hooper M. Gluten-and casein-free dietary intervention for autism spectrum conditions. *Frontiers in human neuroscience*. 2013 Jan 4;6:344.

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