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Research Article

EXPLORING THE EFFECTIVENESS OF BEHAVIORAL INTERVENTIONS ON MEALTIME BEHAVIOR OF CHILDREN WITH AUTISM SPECTRUM DISORDER: A SYSTEMATIC REVIEW

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ABSTRACT

Objectives: This systematic review assesses the impact of various behavioral interventions implemented by caregivers to influence the mealtime behaviors of children with autism spectrum disorder (ASD). It reflects the scope of teaching basic behavioral interventions to the parents which can improve the mealtime behaviors and quality of life of their children. This systematic review is aimed to explore the effectiveness of behavioral interventions on the mealtime behavior of children with ASD.

Methods: Preferred reporting items for systematic review and meta-analysis guidelines were adopted to review the studies. PubMed, PubMed Central, Science Direct, Scopus, Web of Science, Oxford, Ovid, Psych Info, and Delnet were searched.

Results: Five experimental studies that used brief autism mealtime behavior inventory to assess the mealtime behavior of children with ASD were selected for the review. The reviews demonstrated that there was a significant difference in the mean score of mealtime behaviors among autistic children post-intervention.

Conclusion: The study findings emphasize that parent training inculcated with principles of behavioral therapy appears to have a significant impact on reducing the eating behaviors of children with ASD.

Keywords: Autism spectrum disorder, Children, Eating behavior, Effectiveness, Intervention, Mealtime behavior, Parental training.

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INTRODUCTION

Autism spectrum disorder (ASD) among children is a neurodevelopmental disorder characterized by persistent deficits in social communication and social interaction accompanied by restricted, repetitive patterns of behavior, interests, or activities. The signs of ASD are usually evident in early childhood, even though it is considered a lifelong diagnosis [1]. With appropriate and early multidisciplinary management, children with ASD can lead productive lives. Autistic children have restrictive and ritualistic behaviors that affect their eating habits. Many of them limit what they eat, which leads to various nutritional deficiencies such as weight loss, vitamin deficiencies, and malnutrition [2,3]. A targeted medical therapy coupled with a multimodal therapeutic and behavioral approach has created a new and exciting era for children with ASD and their families [4].

Applied behavioral therapy deals with the behavioral excesses and deficits of children with autism by manipulating the environment systematically by which the child will learn the accepted and wanted behaviors which are reinforced [5]. Many research studies focus on behavior therapy, which measures the child's behavior in various points during the management and graphs the data to identify how it influences the behavior of the child [4].

The prevalence of autism in the United States has risen from 1 in 125 children in 2010 to 1 in 54 in 2020, and it is the same all over the world. Children with autism manifest multiple eating and nutritional challenges, such as food selectivity, narrow food preferences, and food refusal. The children are unwilling to try new food, dislike certain foods, eat crunchy and sweet food, and are not willing to accept a variety of foods [6]. Due to the typical features of autism, they are aggressive and display self-injurious behaviors during mealtime. The core features of this complex disorder make it difficult, especially for the parents, to recognize and address such problems [2,3]. Evidence indicates that eating and feeding problems are 5 times more among children with autism compared to typically developing children. Food selectivity and nutrition-related behavioral problems can result in serious health risks, including gastro-intestinal and cardiac complications among autistic children [7]. Language delays (for example) can limit a child's ability to report pain and discomfort that might be interfering with his feeding [1,4,8]. Many children with ASD have difficulties with sensory processing, and this can make eating certain foods a challenge for them. Researchers found that 69% of children with ASD were unwilling to try new foods, and another 46% had rituals surrounding their eating habits [4,8,9]. Major feeding problems of children with communication deficits may make it difficult for a child to maintain a nutritionally adequate diet. Their rigidity, repetitive behavior, and sensory integration dysfunction may also contribute to the high prevalence of feeding difficulties [10]. Autistic children are institutionalized for rehabilitation services according to the degree of severity, where attention is focused

mainly on behavioral, speech, and physical management. The ill effects of behavior problems during mealtime can be reduced by the application of behavior interventions habitually that lead to the intake of varied diets. Feeding interventions in children with ASD are focused on enhancing the volume and variety of food consumed. Fewer studies have assessed the effect of parent training used to promote more general components of healthy eating [11,12].

Objective of the review

This systematic review is aimed to explore the effectiveness of behavioral interventions on the mealtime behavior of children with ASD.

Strategy search

A three-step search strategy was done in November 2023 to get published studies regarding the effectiveness of behavioral interventions on the mealtime behavior of children with ASD. A preliminary strategy search was done in PubMed, PubMed Central, Scopus, and Web of Science to locate the studies. Mealtime behavior, feeding problems, feeding behavior, eating behavior, parental training, parental intervention, intervention, teaching, effectiveness, effect, autism, ASD, and children were used as keywords. Text words and keywords were identified from MESH terms, titles, the abstract, and the full text of various articles. The second step of the search strategy was done using databases such as PubMed, Scopus, Science Direct, Google Scholar, Oxford, Ovid, Psych Info, and Denlet. A third-step search strategy was done in Dissertation Abstract International and was scrutinized for additional studies. The search was updated in November 2024 to identify new eligible articles.

The search yielded 182 citations of which 71 were duplicates. The remaining 111 were screened for relevance based on title, abstract, and availability of full text. Sixty-four studies were further excluded because their quality appraisal scores were <9. A total of five studies were qualified for inclusion in the final review (Fig. 1).

Screening

All the selected articles were screened based on the title and abstract to assess the eligibility for inclusion. After the search, all the identified citations were imported into Zotero, and duplicate articles were excluded. Two independent reviewers scrutinized the articles for the assessment based on the selection criteria of the studies. A third moderator assisted to reaching a final decision on the selection of studies that met all the inclusion criteria.

Inclusion criteria

Experimental and quasi-experimental studies, freely available full-text studies in English, and studies published in the last 6 years (2018–2024) were included in the review.

Exclusion criteria

Qualitative studies and gray literature were excluded.

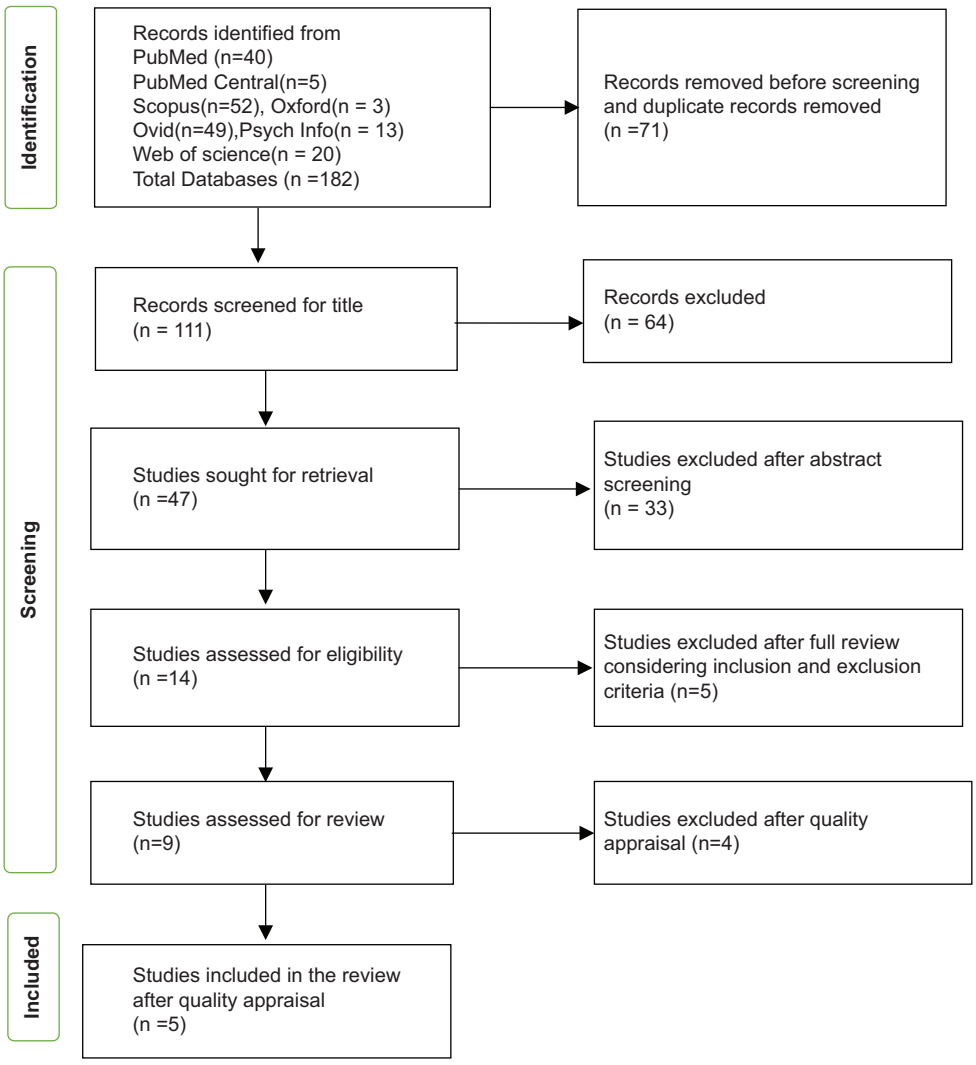

Fig. 1: Preferred reporting items for systematic review and meta-analysis flow diagram

Methodological quality evaluation

Quality assessment was performed by two reviewers who independently appraised the methodological quality of the included studies using the Modified Johns Hopkins Nursing Evidence-Based Practice Research Evidence Appraisal Tool [13,14]. A one-point score was assigned to each of the 12 appraisal items. Quality scores ranged from 12 to 0. The score was divided into three levels as follows: High quality (score between 9 and 12), good quality (score between 5 and 8), and low quality (score between 0 and 4). All the selected articles that obtained scores above nine were considered to have good quality. The appraisal report was reviewed and discussed by other members of the research team and reached a consensus on the score. The quality assessment is summarized in Table 1.

RESULTS

All the five reviewed studies were published in English between the year 2018 and 2024. There were randomized parallel group trials, randomized clinical trials, quasi-experimental AB design, repeated measure within the subject design, and quasi-experimental pre-test post-test one group design. A brief autism mealtime behavior inventory (BAMBI) was used in all the studies to assess the mealtime behaviors of children [15]. Studies conducted at inpatient departments, outpatient departments, rehabilitation centers, and autism training centers were included in the systematic review.

The methodological quality of the studies was high. All the studies mentioned about selection criteria, method of selection of the participants, assessment tools used, description of the intervention, duration of the study, and method of statistical analysis. All the studies measured the outcome of the behavioral program in valid and reliable statistical methods.

Children who had clinical cutoff scores ≥34 of BAMBI were identified as problematic feeders for inclusion in all the studies [5,15]. A total of 128 participants were included in the review. Among them, 118 children had ASD. Ten children had intellectual disability (ID) who were included in the control group in a study [5]. One hundred twelve children were males and 16 were females. The maximum range of age of children was 2–11 years. Food refusal, limited variety of food, and features of autism were assessed for all the children. All the studies implemented the intervention program for a significant duration period (range 12 weeks–6 months). Four studies implemented the education program among parents [5,16-18]. One study implemented the educational program among school teachers as BAMBI is applicable to caregivers who spend time with the children during their mealtime [19]. All the reviews showed greater improvement in mealtime behavior after the implementation of behavioral interventions.

Individual characteristics of each study

A brief description of the authors and year, study setting, study design, population, age of the children, intervention and duration, tools, and results of the five studies are presented in Table 2.

Table 1: Modified Johns Hopkins nursing evidence-based practice research evidence appraisal tool

Appraisal items	Yes (number of articles)	No (number of articles)
Does the researcher identify what is known and not known about the problem and how the study will address any gaps in knowledge?	6	3
Was the purpose of the study clearly presented?	5	4
Was the sample size sufficient based on the study design and rationale?	5	4
Was the literature review current (most sources within the last 5 years or classic)?	5	4
Were data collection methods described clearly?	7	2
Were the instruments reliable (Cronbach's α [alpha] >0.70)?	8	1
Was instrument validity discussed?	8	1
If surveys/questionnaires were used, was the response rate >25%?	8	1
Were the results presented clearly?	5	4
If tables were presented, was the narrative consistent with the table content?	5	4
Were study limitations identified and addressed?	6	3
Were conclusions based on results?	6	3

Table 2: Data extraction Table – studies on the effectiveness of behavioral interventions on mealtime behavior of children with ASD

Authors and year	Study setting	Study design and population	Age of children	Intervention and duration	Tools	Result
Cynthia R Johnson 2018	Outpatient Clinic	Randomized trial, parallel-group design, parents and 42 ASD children	2–11 years	Interactive parent training for 16 weeks	BAMBI	BAMBI T^{wald} −2.79, p=0.003, Cohens d=0.95 at week 20
William G Sharp 2023	Multidisciplinary Centre	Randomized control trial, parents and 38 ASD children	38–88 months	MEAL plan and parent education program for 20 weeks	BAMBI	Reduced BAMBI score SE=−6.15, **p=0.01 at week 12, SE=−7.04, p=**0.01 at week 16 BAMBI effect size 0.010 at week 12 and 0.014 at week 16
Semonitta Panerai 2018	Daycare Center	Quasi-experimental AB design, parents and 18 ASD and ID children	6 months −9 years	Behavior intervention for 10 weeks	BAMBI	Difference from pre-test to post-test treatment scores for BAMBI total score was −26. (−29/24.75) and −20 (26.25/18)
James Galpin 2018	Special school	Repeated measures within a subject, teachers, and 19 ASD children	4–10 years	Sensory snack time feeding intervention for 12 weeks	BAMBI	Lower BAMBI score post intervention M=31.00, SD=9.37 t(18)=4.66, **p<0.001 d=1.07
Antonetta Cerchiari 2023	Bambino Gesu Children's hospital	Quasi-experimental pre-test post-test one group, parents and 11 ASD children	3–8 years	Global intensive feeding therapy for 6 months	BAMBI,	Total BAMBI score=49.64 (12.38) for T1 and 33.45 (6.9) for T3

BAMBI: Brief Autism mealtime behavior inventory, ID: Intellectual disability, MEAL: Manage eating aversion and low intake, ASD: Autism spectrum disorder

Johnson *et al*. conducted a randomized trial on parent training for feeding among children with ASD. Forty-two children were assigned to 11 sessions for the parent training program (PT-F) over 20 weeks. The experimental group showed significantly positive outcomes (BAMBI T^{wald}=−2.79, p**=0.001, About Your Child Eating T^{wald} = −3.58, **p=0.001). The feeding outcomes were found favorable for conducting large sample trials [16].

Sharp *et al*. evaluated the effect of the Autism Manage Eating Aversion and Low Intake (MEAL) Plan, a parent training curriculum to manage eating aversion and low intake among children with Autism to address the feeding problems of children with autism. Social responsiveness scale, parent report form, BAMBI, food preference inventory, social validity, and parent perception of improvement were used. The Autism MEAL Plan consisted of eight 1 h long parent sessions. On the completion of the Autism MEAL Plan, BAMBI's total score was 47.2 (9.6) in the treatment group and 47.2 (12.6) in the control group. The intervention plan appeared feasible in reducing the mealtime behaviors among children with ASD and preliminary efficacy results were found encouraging for conducting a large study [17].

Panerai *et al*. conducted a quasi-experimental design study on the effectiveness of the behavioral treatment package for the feeding problem in children with ASD and ID. Body weight, count of the food accepted, count of textures accepted, and length of the meal were assessed. Verbal instruction, modeling, prompted procedure, and contingency management were given to the children. Direct and indirect video observations were done. The differences in mealtime behaviors from pre- to post-test in ASD children were: BAMBI score 26.25 (29/24.75), food selectivity 7.5 (11/7), disruptive mealtime behavior 7.5 (9/6.5), food refusal (4.5/2), and rigidity 5.5 (6.25/3.75). The behavioral intervention for feeding problems appeared to have been effective in improving the feeding behaviors of children with ASD and ID [5].

Galpin *et al*. evaluated a school-based intervention addressing food selectivity in 23 children with ASD (4–10 years). Sensory snack time feeding intervention was conducted for 12 weeks. BAMBI scores of the children with ASD were significantly lower post-intervention (Median [M]=31.00, Standard deviation [SD]=9.37) than at baseline (M=38.53, SD=12.49), t (18)=4.66, **p<0.001, d=1.07. Food selectivity score was significantly lower post-intervention (M=11.37, SD=4.31) than at baseline (M=14.00, SD=4.67, t[18]=5.06, **p<0.001, d=1.16). Food Refusal scores were significantly lower on average post-intervention (M=5.53, SD=2.04) than at baseline (M=7.26, SD=2.85, t[18]=3.18, p=0.005, d=0.73). Severity scores were significantly lower post-intervention (median=1, range: [0–6] than at baseline [M=5, range: 0–15], Z=−3.00, **p<0.001, r=−0.49). Disruptive mealtime behavior scores were significantly lower post-intervention (M=7, range: 5–14) than at baseline (M=10, range: 5–21), Z=−2.46, p*<0.05, r=−0.4). There was a significant decrease across five of the six scores produced by the BAMBI, indicating reduced mealtime behaviors among children with ASD [19].

Cerchiari *et al*. evaluated the efficacy of the Global Intensive Feeding Therapy on feeding and swallowing abilities among 11 autistic children aged between 3 and 8 years. The assessment included T1 (first assessment), T2 (after 2 weeks of intensive treatment), and T3 (at 1-month follow-up). Significant difference was found between T1 (M=49.64, SD=12.38) and T2 (M=35.09, SD=6.45) and between T2 and T3 (M=33.48, SD=6.9). There was a significant difference for the total score between T1 (M=2.45, SD=1.63) and T2 (M=1.55, SD=1.36) and between T2 and T3 (M=1.45, SD=1.21). There was a significant difference for the total score between T1 (M=6.09, SD=3.48) and T2 (M=20.36, SD=7.41) and between T1 and T3 (M=29.57, SD=11.94). Global Intensive Feeding Therapy promoted chewing abilities, food acceptance, and mealtime behavioral issues involving families and primary caregivers in managing children with ASD [18].

DISCUSSION

One of the most significant problems related to ASD in children is the mealtime behaviors that fall into three categories: disruptive mealtime behaviors, type and texture-based food selection, and food rejection [20]. The researcher selected these problems for the systematic reviews to highlight the significance of upgrading the caregivers in the home setting in the management of mealtime behaviors which improve the nutritional status and quality of life of the children with autism. The success rate of the application of behavior interventions also improves their mental status and adaptive skills [21]. It also improves parent satisfaction and reduces parental stress during mealtime of their children.

For the homogeneity of the interventions and tools , only experimental and quasi experimental studies on the effect of behavioural interventions on mealtime behaviours of children with ASD were selected for the review. The intra- and inter-study bias, methodological differences, and differences in the measurement of outcomes raised practical difficulties in including such studies even though the findings of such studies were relevant. Unpublished work and partially published articles were also excluded from the review. Although most of the studies used BAMBI as the tool to assess the effect of interventions, adequate statistical evidence are not given by the authors in the statistical analysis. Hence, the authors found it difficult to perform a meta-analysis of the data.

The authors selected articles that were published between 2018 and 2024 to ensure the availability of recent evidence. The studies that were conducted in clinical settings, special schools, and daycare centers were selected based on the methodological similarity of the studies. Considering the age distribution of the children, the studies that were conducted on children between the ages of 3 and 11 years were selected as the application of the tool BAMBI is preferable for that particular age group [21]. The mentioned studies employ an age range between 2 and 11 years. The effectiveness of the intervention was statistically analyzed based only on the scores of a single tool (BAMBI) to ensure the homogeneity of the statistical interpretations of the studies [15].

Contribution of the paper

Clinical practice

Mealtime behaviors may bring about serious health issues for children with autism, such as malnutrition, vitamin and mineral deficiencies, poor bone growth, and obesity [4,9,22]. The combination of such health problems emphasizes an urgent need to identify and disseminate evidence-based interventions of eating problems associated with autism and other neurodevelopmental disorders. Evidence has largely been established with trained behavior therapists working in highly structured clinical settings. The application of behavioral interventions helps nurses to reduce stress and apprehension while caring for children with neurodevelopmental disorders [23]. The consistent, continuous, and evidence-based behavioral parental interventional strategies are found to be highly effective in managing mealtime behaviors among children with ASD.

Research

Qualitative and longitudinal studies can be conducted to identify the effect of behavioral interventions on managing mealtime behaviors among autistic children. The educational interventions, if confirmed by future studies, could reflect an interesting model for managing feeding issues in home settings among children with special needs as it is implemented in daycare centers and institutions. The interventions may be integrated into the global psycho-educational program.

Recommendations

- Scientific sessions on the management of behavioral problems of children with various neurodevelopmental disorders can be organized in nursing institutions and clinical settings
- Dissemination of research evidence in the field helps to update the

professional knowledge and skills among nurses working in clinical settings.

CONCLUSION

Evidence shows that 50% of children with autism report eating problems such as food refusal or food selectivity. Nutritional inadequacies and imbalances of autistic children can be managed effectively if behavioral interventions are applied to improve mealtime behaviors. The findings of all the reviews emphasize that parent training inculcated with principles of behavioral therapy appears to have a significant impact on reducing the eating behaviors of children with ASD.

Search strategy

((((children AND ((y_5[Filter]) AND (clinicaltrial[Filter]) AND (fft[Filter]))) AND (effectiveness OR effect AND ((y_5[Filter]) AND (clinicaltrial[Filter]) AND (fft[Filter])))) AND (parental training OR parental intervention OR teaching AND ((y_5[Filter]) AND (clinicaltrial[Filter]) AND (fft[Filter])))) AND (mealtime behavior OR feeding problem OR feeding behavior AND ((y_5[Filter]) AND (clinicaltrial[Filter]) AND (fft[Filter])))) AND ("Autistic Disorder" [Mesh] OR "Autism Spectrum Disorder" [Mesh] AND ((y_5[Filter]) AND (clinicaltrial[Filter]) AND (fft[Filter]))) Filters: Full text, Clinical Trial, Randomized Controlled Trial, in the last 5 years, English.

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AUTHOR'S CONTRIBUTIONS

Indu P C: conceptualization, methodology, writing – original draft, supervision. Gowrishankar A: conceptualization, methodology, supervision, visualization. Riaz K M: validation, software, supervision. Jibin Kunjavara: conceptualization, writing – review and editing, analysis, validation, Indira Nair L: investigation, software. Jayalatha K T: investigation. Tintu Jose: conceptualisation. Vijayaraghavan R: methodology, supervision, validation. Rahmath K: conceptualization, methodology, validation. Sangeetha V Joice: methodology.

DECLARATION OF CONFLICTS OF INTEREST

The authors do not have any conflicts of interest to declare.

REFERENCES

1. Palta A, Saxena R. Meal time behavior of children with autism. Aggress Behav. 2015;4(10):52-7.
2. Doshi-Velez F, Ge Y, Kohane I. Comorbidity clusters in autism spectrum disorders: An electronic health record time-series analysis. Pediatrics. 2014 Jan;133(1):e54-63. doi: 10.1542/peds.2013-0819, PMID: 24323995
3. Bougeard C, Picarel-Blanchot F, Schmid R, Campbell R, Buitelaar J. Prevalence of autism spectrum disorder and co-morbidities in children and adolescents: A systematic literature review. Front Psychiatry. 2021;12:744709. doi: 10.3389/fpsyt.2021.744709, PMID: 34777048
4. Piazza CC, Fisher WW, Brown KA, Shore BA, Patel MR, Katz RM, *et al*. Functional analysis of inappropriate mealtime behaviors. J Appl Behav Anal. 2003;36(2):187-204. doi: 10.1901/jaba.2003.36-187, PMID: 12858984
5. Panerai S, Suraniti GS, Catania V, Carmeci R, Elia M, Ferri R. Improvements in mealtime behaviors of children with special needs following a day-center-based behavioral intervention for feeding problems. Riv Psichiatr. 2018 Dec;53(6):299-308. doi: 10.1708/3084.30763, PMID: 30667396
6. Kumar S, Venkatakrishna S, Gopal A, Kota S. Prevalence of autism spectrum disorders (ASD) and its association with medical issues and behaviour problems among children with intellectual disability (ID). Indian J Mental Health. 2021;8:307-12.
7. Van Dijk MW, Buruma ME, Blijd-Hoogewys EM. Detecting feeding problems in young children with autism spectrum disorder. J Autism Dev Disord. 2021 Nov;51(11):4115-27. doi: 10.1007/s10803-021-04869-1, PMID: 33452969
8. Martin CR, Mayer EA. Gut-brain axis and behavior. Nestlé Nutr Inst Workshop Ser. 2017;88:45-53. doi: 10.1159/000461732, PMID: 28346923
9. Baraskewich J, Von Ranson KM, McCrimmon A, McMorris CA. Feeding and eating problems in children and adolescents with autism: A scoping review. Autism. 2021 Aug;25(6):1505-19. doi: 10.1177/1362361321995631, PMID: 33653157
10. Mawle E, Griffiths P. Screening for autism in pre-school children in primary care: Systematic review of English language tools. Int J Nurs Stud. 2006 Jul 1;43(5):623-36. doi: 10.1016/j.ijnurstu.2005.11.011, PMID: 16387303
11. Compañ-Gabucio LM, Ojeda-Belokon C, Torres-Collado L, García-de-la-Hera M. A scoping review of tools to assess diet in children and adolescents with autism spectrum disorder. Nutrients. 2023 Aug 27;15(17):3748. doi: 10.3390/nu15173748, PMID: 37686780
12. Dhaliwal KK, Orsso CE, Richard C, Haqq AM, Zwaigenbaum L. Risk factors for unhealthy weight gain and obesity among children with autism spectrum disorder. Int J Mol Sci. 2019 Jul 4;20(13):3285. doi: 10.3390/ijms20133285, PMID: 31277383
13. Tsistinas O. Subject Guides: Johns Hopkins Nursing Evidence-Based Practice: Johns Hopkins EBP Model. Available from: https://guides.upstate.edu/c.php?g=1023176&p=7411252 [Last accessed on 2024 Nov 15].
14. Seal S. Welch Medical Library Guides: Nursing Resources: JHNEBP Model Resources. Available from: https://browse.welch.jhmi.edu/nursing_resources/jhnebp [Last accessed on 2024 Feb 16].
15. DeMand A, Johnson C, Foldes E. Psychometric properties of the brief autism mealtime behaviors inventory. J Autism Dev Disord. 2015 Sep;45(9):2667-73. doi: 10.1007/s10803-015-2435-4, PMID: 25813517
16. Johnson CR, Brown K, Hyman SL, Brooks MM, Aponte C, Levato L, *et al*. Parent training for feeding problems in children with autism spectrum disorder: Initial randomized trial. J Pediatr Psychol. 2019 Mar;44(2):164-75. doi: 10.1093/jpepsy/jsy063, PMID: 30101320
17. Sharp WG, Burrell TL, Jaquess DL. The autism MEAL plan: A parent-training curriculum to manage eating aversions and low intake among children with autism. Autism. 2014 Aug;18(6):712-22. doi: 10.1177/1362361313489190, PMID: 24101716
18. Cerchiari A, Giordani C, Franceschetti S, Mazzafoglia S, Carosi F, Pizza F, *et al*. The efficacy of the global intensive feeding therapy on feeding and swallowing abilities in children with autism spectrum disorder: A pilot study. Children (Basel). 2023 Jul 19;10(7):1241. doi: 10.3390/children10071241, PMID: 37508738
19. Galpin J, Osman L, Paramore C. Sensory snack time: A school-based intervention addressing food selectivity in autistic children. Front Educ. 2018;3:77. doi: 10.3389/feduc.2018.00077
20. Omara AM, Abu-Elenin MM, Serag El Deen SM, Orabi GT, Sidhom RM. Feeding behavioral problems among Egyptian children with autism spectrum disorder. Egypt J Otolaryngol. 2024 Jul 26;40(1):74. doi: 10.1186/s43163-024-00638-w
21. Lamboglia A, Romano R, Valente D, Berardi A, Cavalli G, Giovannone F, *et al*. Brief autism mealtime behavior inventory (BAMBI): Italian translation and validation. Children (Basel). 2023 Jul;10(7):1201. doi: 10.3390/children10071201, PMID: 37508698
22. Neumeyer AM, Cano Sokoloff NC, McDonnell EI, Macklin EA, McDougle CJ, Holmes TM, *et al*. Nutrition and bone density in boys with autism spectrum disorder. J Acad Nutr Diet. 2018 May;118(5):865-77. doi: 10.1016/j.jand.2017.11.006, PMID: 29409733
23. Hedlund Å, Jordal M. Feeling like an untapped resource. Experiences of working life among nurses with ADHD and/or autism: An interview study. Int J Nurs Stud. 2024 Oct 1;158:104857. doi: 10.1016/j.ijnurstu.2024.104857, PMID: 39032246