

Biting in Children: A Speech-Language Pathology Differential Diagnosis

العضّ عند الأطفال: تشخيص فارقي أرطفوني

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ABSTRACT:

Biting behavior in children is a clinically significant sign that requires careful differential assessment rather than rapid classification as aggression. It may express frustration, weak functional communication, emotional dysregulation, oral sensory seeking, or oral-motor and feeding difficulties related to chewing, swallowing, and speech production. This article aims to construct a speech-language pathology framework for the differential diagnosis and management of biting in children. The study adopts a descriptive analytical method based on Arabic and international literature, with special attention to communication, sensory processing, oral-motor control, pediatric feeding disorder, autism spectrum disorder, and attention-deficit/hyperactivity disorder. It proposes a multidimensional assessment sequence, an observation grid, differential diagnostic tables, clinical red flags, and an intervention plan that integrates functional communication training, augmentative and alternative communication when needed, safe oral-sensory regulation, feeding-oriented oral-motor work, and family-school collaboration. The study concludes that effective intervention should not depend on punishment or behavioral suppression alone. It should begin with identifying the function, context, communicative meaning, oral-sensory indicators, and oral-motor signs associated with biting.

Keywords: biting behavior, differential diagnosis, speech-language pathology, oral-motor dysfunction, functional communication.

المخلص:

يعد سلوك العضّ عند الأطفال علامة إكلينيكية وتربوية ذات دلالات متعددة، ولا ينبغي تفسيره مباشرة بوصفه عدوانية أو اضطرابا سلوكيا خالصا. فقد يرتبط بضعف التواصل الوظيفي، أو صعوبة التعبير عن الرفض والألم والحاجة، أو باضطراب التنظيم الانفعالي، أو بالبحث الحسي الفموي، أو بخلل في حركي متصل بالمضغ والبلع والنطق. تهدف هذه الدراسة إلى بناء إطار أرطفوني للتشخيص الفارقي والتدخل في سلوك العضّ لدى الأطفال. وتعتمد الدراسة على المنهج الوصفي التحليلي بالاستناد إلى الأدبيات العربية والأجنبية، مع التركيز على أبعاد التواصل، المعالجة الحسية، التحكم الفعي الحركي، اضطرابات التغذية لدى الطفل، اضطراب طيف التوحد، واضطراب تشتت الانتباه وفرط الحركة. كما تقترح الدراسة مسارا تقويميا متعدد المحاور، وشبكة ملاحظة، وجداول تشخيص فارقي، ومؤشرات إحالة، وخطة تدخل تجمع بين التدريب على التواصل الوظيفي، والتواصل البديل والمعزز عند الحاجة، والتنظيم الحسي الفموي الآمن، والتدريب الفعي الحركي المرتبط بالتغذية، والتنسيق بين الأسرة والمدرسة. وتخلص الدراسة إلى أن التدخل الفعال لا يقوم على العقاب أو المنع وحدهما، بل يبدأ بفهم وظيفة السلوك وسياقه ومعناه التواصلية ومؤشراته الحسية والفمية الحركية. كلمات مفتاحية: العضّ، التشخيص الفارقي، الأرطفونيا، الخلل الفعي الحركي، التواصل الوظيفي.

1- Introduction:

Biting in childhood is often seen first as a discipline problem. Parents, teachers, and even some practitioners may interpret it as intentional harm. This interpretation is understandable when the

behavior leaves marks, frightens peers, or disrupts learning. Yet it remains clinically incomplete. A child may bite because he cannot say “stop,” “mine,” “I am hurt,” or “I need a break.” Another child may bite clothes or objects because oral pressure helps him regulate tension. A third child may bite during meals because chewing is poorly organized or because textures are difficult to manage. The same external act may therefore represent different clinical functions.

For speech-language pathology, biting is important because it lies at the intersection of communication, oral function, sensory regulation, feeding, and behavior. The mouth is not only an articulatory organ. It is also involved in breathing, sucking, chewing, swallowing, saliva control, oral exploration, emotional expression, and self-regulation. When a child repeatedly uses the mouth in unsafe or socially inappropriate ways, the clinician must ask whether the behavior is a communicative signal, a sensory strategy, a motor compensation, a feeding-related difficulty, or a maladaptive response maintained by the environment.

The need for differential diagnosis is particularly strong in children with delayed language, autism spectrum disorder, intellectual disability, hearing impairment, attention-deficit/hyperactivity disorder, neuro-motor disorders, and pediatric feeding disorder. These groups may show limited expressive language, reduced social problem-solving, altered sensory processing, impulsivity, oral-motor weakness, or feeding skill difficulties. In such cases, the label “aggressive biting” may obscure the real mechanism and delay appropriate intervention.

This article strengthens the speech-language pathology reading of biting by integrating behavioral analysis with communication assessment and oral-sensory-motor examination. It also proposes applied tools that can be used in clinical, preschool, and school contexts. The central assumption is that intervention should target the function of biting, not only its visible form.

2- Research problem, objectives, and methodology:

The main problem addressed in this study is the difficulty of distinguishing between biting as a maladaptive or aggressive behavior and biting as a sign of communication, oral-sensory, oral-motor, or feeding dysfunction. A child who bites may be described as violent, oppositional, or poorly disciplined. However, clinical observation may show that the behavior appears when the child is unable to request, refuse, protest, indicate pain, tolerate waiting, manage sensory overload, or coordinate oral movements during eating.

The main research question is: How can a speech-language pathology differential diagnosis distinguish behavioral biting from biting related to communication, oral-sensory, oral-motor, and feeding difficulties in children? From this question arise several sub-questions: What indicators suggest that biting is maintained by escape, access, attention, or control? What indicators suggest that biting compensates for weak expressive communication? What oral-sensory and oral-motor signs should be examined? How can the clinician decide when referral to psychology, occupational therapy, dentistry, pediatrics, or a feeding/swallowing team is necessary? What intervention axes are most appropriate for each diagnostic hypothesis?

The study aims to: (a) define biting as a multidimensional clinical sign; (b) clarify the difference between behavioral, communicative, oral sensory, oral-motor, and mixed biting; (c) present

assessment indicators that are useful for speech-language pathologists; (d) propose a structured observation grid and clinical formulation model; and (e) design an intervention plan that can be adapted to the child, the family, and the educational environment.

The study adopts a descriptive analytical method. This method is appropriate because the phenomenon cannot be understood through one disciplinary lens. The analysis draws on Arabic and international literature in speech-language pathology, autism, child behavior, AAC, pediatric feeding disorder, and school-based intervention. The study also uses a differential diagnostic logic. It compares observable indicators, antecedents, consequences, communication abilities, sensory signs, and oral-motor findings in order to generate a precise and clinically useful hypothesis.

3- Theoretical framework:

3-1- Concept of biting behavior:

Biting behavior refers to the repeated or inappropriate use of the teeth to press on the child's own body, another person, food, or objects in a way that is harmful, unsafe, socially inappropriate, or inconsistent with the child's developmental level and context. It may include biting peers or adults, self-biting, biting clothes and objects, biting the lips or cheek, repeated non-nutritive chewing, or inefficient biting during meals.

Biting should not be considered pathological simply because it occurs once or appears during a normal exploratory period. It becomes clinically significant when it is frequent, intense, injurious, persistent beyond the expected developmental period, linked to distress, associated with feeding or oral-motor signs, or disruptive to participation in family, preschool, school, or peer activities. The clinical question is not only "Does the child bite?" but also "When does biting occur, what function does it serve, and what developmental or functional difficulties accompany it?"

3-2- Developmental and contextual boundaries:

In very young children, occasional biting may appear during teething, exploration, frustration, or early peer interaction. However, persistence, escalation, injury, or appearance with other developmental concerns requires assessment. The clinician should examine age, language level, cognitive level, sensory profile, family routines, school demands, peer context, and medical history. A four-year-old child with adequate language who bites to control peers is clinically different from a four-year-old child with severe expressive delay who bites because he cannot refuse or ask for help.

Context is therefore diagnostic. Biting during transitions may indicate difficulty shifting activities. Biting during crowding or noise may indicate sensory overload. Biting after a peer removes a toy may indicate poor functional communication or social problem-solving. Biting during meals may indicate oral-motor or feeding skill difficulty. Biting when the child is tired or anxious may reflect regulation difficulty. Repeated object biting without social conflict often suggests oral sensory seeking or self-regulation rather than aggression.

3-3- Biting as maladaptive behavior and aggression:

Biting may be a maladaptive behavior when it is maintained by identifiable environmental consequences. It may allow the child to escape a task, gain access to a preferred object, obtain adult

attention, interrupt a demand, or control a social situation. In this case, the behavior has a function even if it is socially unacceptable. The analysis should include frequency, intensity, duration, antecedents, consequences, and the response of adults and peers.

Sanwa and Qurayshi reported that behavioral disorders among deaf children include attention deficit, hyperactivity, and aggressive behavior. Their findings also highlighted the psychological consequences of communication loss, including feelings of helplessness and difference, which may contribute to maladaptive behavior (Sanwa & Qurayshi, 2018, pp. 741-742). This is relevant because biting may emerge in children whose communication barriers increase frustration and reduce access to socially acceptable forms of protest.

Biting can also appear as physical aggression when it is directed toward another person to harm, defend, or dominate. However, classifying biting as aggression without assessing communication and oral functions can lead to diagnostic error. A behavior directed toward another person may still be communicative. It may mean “stop,” “move away,” “give it back,” or “I cannot cope.” Jureij’s findings on maladaptive behaviors among children with intellectual disabilities, including rebellion, destructive behavior, violent behavior, and social withdrawal, support the need to analyze biting within a broader behavioral system rather than in isolation (Jureij, 2013, p. 144).

3-4- Biting and communication difficulties:

Communication difficulty is one of the strongest explanations for biting in clinical practice. Children who cannot request, refuse, protest, negotiate, indicate pain, or ask for a break may use primitive motor behaviors to express needs. The mouth becomes a rapid means of action when words, gestures, pictures, or signs are absent or not yet functional. For this reason, every assessment of biting should include receptive language, expressive language, pragmatic use of language, gestures, symbolic communication, and the child’s ability to repair communication breakdowns.

Functional communication is especially important when biting occurs in predictable situations such as toy conflict, denial of access, transition, waiting, or difficult tasks. In these cases, biting may decrease when the child learns an alternative response that is easier, faster, and more consistently reinforced. AAC may be needed when speech is absent, unclear, or not reliable under stress. ASHA defines AAC as a clinical area that supplements or compensates for impairments in speech-language production or comprehension, including spoken and written communication modes (American Speech-Language-Hearing Association [ASHA], n.d.-b).

Fouad found a relationship between verbal behavior skills and social interaction among children with autism spectrum disorder. The results indicated that both verbal behavior and social interaction were below the expected level in the studied group (Fouad, 2023, p. 2087). This supports the idea that weak communication may increase the risk of challenging behaviors, including biting, because the child lacks effective tools for social exchange and emotional expression.

3-5- Biting, autism spectrum disorder, and sensory processing:

In autism spectrum disorder, biting may arise from overlapping mechanisms: social communication difficulty, restricted flexibility, anxiety during changes in routine, sensory hyper- or hyposensitivity, oral sensory seeking, poor frustration tolerance, and limited functional

communication. ASHA's Practice Portal describes autism as a neurodevelopmental condition characterized by deficits in social communication and social interaction, with restricted and repetitive behaviors that may include hyper- or hyposensitivity to sensory input (ASHA, n.d.-a). This description is clinically relevant because biting may be linked to both communication and sensory regulation.

Baweja et al. found that physical aggression toward others was strongly associated with autism and combined-type attention-deficit/hyperactivity disorder, whereas self-injurious behavior was more strongly associated with autism (Baweja et al., 2023, pp. 274-283). This distinction is important for biting. The clinician should separate biting directed toward others from self-biting and object biting, because each pattern may have different maintaining functions and clinical implications.

Nimbley et al. reported a relationship between sensory processing and eating behaviors in individuals with autism spectrum disorder (Nimbley et al., 2022). Although biting is not always an eating behavior, it is connected to oral pressure, texture, taste, proprioceptive input, and regulation. Object biting and clothes chewing are therefore useful indicators of oral sensory seeking, especially when they occur in waiting, anxiety, fatigue, noise, or unstructured time.

3-6- Biting and attention-deficit/hyperactivity disorder:

Biting may also appear in children with attention-deficit/hyperactivity disorder, especially when impulsivity, weak inhibition, poor waiting ability, and rapid emotional reactivity are present. In this pattern, biting may occur suddenly during play, competition, crowding, or conflict. The child may not plan to bite and may later show remorse or confusion. The intervention should therefore include self-regulation, environmental organization, predictable routines, adult mediation before escalation, and replacement responses.

Ali's study on the differential diagnosis between autism spectrum disorder and attention-deficit/hyperactivity disorder emphasizes the value of accurate assessment tools and warns against relying on observation alone or parental judgment alone (Ali, 2022, p. 568). This principle applies directly to biting. Diagnostic confidence increases when several sources are combined: parent interview, teacher report, direct observation, language assessment, oral-motor examination, and analysis of antecedents and consequences.

4- Biting as oral-motor or oral-sensory dysfunction:

4-1- The mouth as an integrated functional system:

In speech-language pathology, the mouth is understood as an integrated functional system. It supports speech articulation, resonance, chewing, swallowing, oral exploration, breathing coordination, saliva control, facial expression, and sensory regulation. Dysfunction in the lips, tongue, jaw, cheeks, palate, dentition, or oral sensation may therefore appear not only as speech errors but also as drooling, mouth breathing, food refusal, chewing difficulty, gagging, coughing, pocketing food, biting the cheek, or repeated object biting.

The oral-motor hypothesis becomes stronger when biting appears together with weak chewing, poor jaw stability, limited tongue lateralization, poor lip closure, fatigue during meals, food

pocketing, delayed progression to solids, coughing or choking, drooling, dental problems, oral hypersensitivity, or oral hyposensitivity. These indicators require careful assessment because they may point to feeding and swallowing risk rather than behavior alone.

4-2- Biting and chewing or swallowing difficulties:

Boulhia explains that oral language disorders in children with neuro-motor disabilities may be linked to poor motor control and maturation, and that weak control of speech organs can lead to chewing and swallowing difficulties (Boulhia, 2023, p. 848). This supports a key diagnostic principle: some oral behaviors are not intentional aggression. They may be compensations for poor motor planning, reduced oral awareness, weak jaw grading, or insufficient sensory feedback.

When biting appears during meals, the clinician should observe how the child bites food, whether he uses vertical munching or lateral chewing, whether food moves to both sides of the mouth, whether the tongue can lateralize, whether the child stuffs food, whether he avoids hard textures, and whether choking, coughing, wet vocal quality, or respiratory symptoms appear. These signs may require referral for feeding and swallowing assessment. ASHA states that speech-language pathologists play a central role in assessment, diagnosis, and treatment of pediatric feeding and swallowing disorders, and that interprofessional collaboration may be required (ASHA, n.d.-c).

4-3- Biting and pediatric feeding disorder:

Pediatric feeding disorder provides a useful framework for understanding some cases of biting. Goday et al. defined pediatric feeding disorder as impaired oral intake that is not age appropriate and is associated with medical, nutritional, feeding skill, and/or psychosocial dysfunction (Goday et al., 2019, pp. 124-129). This definition is important because it moves assessment beyond a narrow oral-motor view. It requires clinicians to consider health, nutrition, feeding skill, caregiver-child interaction, and psychosocial participation.

Daley et al. describe pediatric feeding disorders as complex multifactorial conditions that interfere with a child's ability to eat or drink safely and effectively, and they emphasize early recognition, structured evaluation, individualized management, and interdisciplinary care (Daley et al., 2025). When biting appears with food selectivity, texture refusal, prolonged meals, gagging, food pocketing, or swallowing concern, it should be assessed within this broader framework.

West's review of pediatric feeding disorders and dysphagia in school settings highlights the need for evidence-based, skilled intervention that supports both feeding/swallowing development and educational participation (West, 2024, pp. 444-457). This is particularly relevant for children who bite or chew objects at school because the behavior may interfere with safety, peer participation, classroom routines, and mealtime inclusion.

4-4- Biting and oral sensory seeking:

Oral sensory seeking appears when the child uses biting or chewing to obtain pressure, vibration, taste, texture, or proprioceptive input. This pattern often appears when the child chews sleeves, collars, pencils, toys, blankets, or fingers. It may increase during waiting, anxiety, boredom,

fatigue, transitions, noisy environments, or unstructured time. The child may seem calmer or more organized after oral pressure.

Oral sensory seeking should not be treated by simply removing objects without providing safer alternatives and teaching replacement behaviors. The clinician should identify sensory triggers, coordinate with occupational therapy when sensory processing difficulties are prominent, and ensure that any oral alternative is safe, hygienic, age-appropriate, supervised, and not used as a substitute for assessment of feeding or dental problems. If biting is intense, self-injurious, or associated with skin breakdown, referral is necessary.

5- Speech-language pathology differential diagnosis and applied assessment model:

5-1- Principle of differential diagnosis:

Differential diagnosis begins by rejecting one-cause explanations. The clinician should not ask only whether biting is present. The more useful questions are: What happens before biting? What does the child obtain or avoid after biting? What does the child fail to communicate before biting? What sensory or oral-motor signs accompany it? Does biting occur with meals, transitions, peer conflict, pain, fatigue, or anxiety? Does the behavior decrease when a communication alternative is taught?

From a speech-language pathology perspective, biting may be predominantly behavioral, communicative, oral sensory, oral-motor/feeding-related, emotional-regulatory, or mixed. Mixed cases are common. A child may bite peers to recover a toy, chew sleeves during waiting, and refuse hard foods because chewing is weak. In such cases, a single intervention is not enough. A multidimensional plan is required.

Table 1. Differential diagnosis of biting behavior. Source: Prepared by the author.

Dimension	Behavioral biting	Communicative biting	Oral sensory biting	Oral-motor / feeding biting
Usual context	Conflict, refusal, deprivation, competition, demand escape.	Failure to request, refuse, protest, ask for help, or express pain.	Waiting, anxiety, boredom, fatigue, noise, unstructured time.	Meals, hard textures, chewing fatigue, food pocketing, drooling, oral discomfort.
Direction	Often toward peers or adults.	Toward others, self, or objects depending on message.	Often toward clothes, toys, fingers, pencils, or sleeves.	Toward food, cheek, lips, fingers, utensils, or objects used for jaw stability.
Main function	Escape, access, attention, control, or defense.	Primitive nonverbal message replacing weak language.	Oral pressure, calming, alerting, self-regulation.	Compensation for poor jaw, tongue, lip, chewing, or swallowing control.
Language link	Language may be adequate, delayed, or not used during escalation.	Clear expressive or pragmatic difficulty; limited alternatives.	Language may exist, but biting appears as sensory routine.	May co-occur with speech disorder, dysarthria, apraxia, or feeding skill delay.
Feeding link	No consistent feeding signs.	Indirect; may appear when the child cannot ask for food/drink or stop.	Texture preference, mouthing, chewing non-food items may be present.	Clear chewing, swallowing, drooling, oral fatigue, gagging, or texture refusal signs.

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Dimension	Behavioral biting	Communicative biting	Oral sensory biting	Oral-motor / feeding biting
Assessment priority	Functional behavior assessment and environmental analysis.	Functional communication assessment and AAC/gesture assessment.	Sensory profile, triggers, safety, occupational therapy collaboration.	Oral-motor, feeding, swallowing, dental, and medical screening.
Intervention focus	Modify antecedents and consequences; teach replacement behavior.	Teach requesting, refusing, break, help, pain, turn-taking, and repair.	Provide safe alternatives and regulation routines; reduce overload.	Feeding-oriented oral-motor work, texture progression, safety monitoring, referrals.

5-2- Speech-language observation grid:

The observation grid should be completed across settings, not only during one clinic session. It should include parent report, teacher report, and direct observation. It should record the onset of biting, frequency, intensity, duration, direction, antecedents, consequences, communication attempts before biting, adult response, peer response, oral sensory signs, feeding signs, oral-motor indicators, medical history, dental status, sleep, pain, medication, and recent environmental changes.

The grid should also record protective factors. These include situations in which biting does not occur, successful communication forms, preferred calming routines, foods the child manages safely, adults who prevent escalation, and environmental arrangements that reduce risk. These protective factors guide intervention as much as the problem behavior itself.

Table 2. Proposed observation grid for speech-language pathology assessment. Source: Prepared by the author.

Assessment axis	Information to collect	Clinical interpretation
Behavior description	Frequency, intensity, duration, injury, direction, objects involved.	Determines clinical severity and safety risk.
Antecedents	What happens immediately before biting: demand, transition, toy removal, noise, waiting, meal, pain.	Identifies triggers and probable function.
Consequences	What the child gains or avoids; adult and peer reactions.	Shows whether the behavior is being reinforced.
Communication	Requests, refusals, gestures, words, AAC, ability to say pain/help/break.	Indicates whether biting replaces communication.
Sensory signs	Chewing clothes, mouthing objects, sensitivity to sound/touch/texture, calming after pressure.	Suggests oral sensory seeking or overload.
Oral-motor signs	Lip closure, jaw stability, tongue lateralization, chewing pattern, drooling, mouth breathing.	Suggests oral-motor or feeding-skill involvement.
Feeding/swallowing	Texture refusal, gagging, coughing, choking, food pocketing, long meals, weight/nutrition concerns.	Indicates need for feeding/swallowing assessment or referral.

Assessment axis	Information to collect	Clinical interpretation
Context and routines	Home, preschool/school, family response, classroom density, transitions, sleep, pain, medication.	Clarifies environmental and health contributors.
Response to alternatives	Does biting decrease when the child uses a word, sign, picture, break card, or safe oral alternative?	Tests the diagnostic hypothesis and guides intervention.

5-3- Clinical assessment sequence:

A practical assessment sequence can be organized in six steps. First, collect case history, including pregnancy and birth, developmental milestones, hearing status, medical and dental history, feeding history, sleep, pain, medication, and family concerns. Second, describe biting precisely and separate biting others, self-biting, object biting, and biting during eating. Third, conduct functional analysis of antecedents and consequences across contexts. Fourth, assess communication, including receptive language, expressive language, pragmatic functions, gestures, signs, pictures, and AAC readiness. Fifth, examine oral-sensory and oral-motor functions, including lips, tongue, jaw, cheeks, oral awareness, chewing, swallowing, saliva control, and breathing pattern. Sixth, formulate the diagnostic hypothesis and decide whether referral is needed.

Boulhia emphasizes that speech-language assessment should include diagnostic interview and case history covering family history, pregnancy and birth, psychomotor development, language development, emotional and social development, and schooling (Boulhia, 2023, p. 850). This comprehensive history is essential because biting can be influenced by developmental, emotional, educational, oral-motor, medical, and familial factors.

5-4- Red flags requiring referral:

Several signs require referral beyond routine speech-language intervention. Medical or feeding referral is required when biting is associated with choking, coughing during meals, wet voice, recurrent respiratory infections, poor weight gain, dehydration, severe food restriction, pain, vomiting, or suspected swallowing risk. Dental referral is needed when there is oral pain, tooth decay, malocclusion, oral lesions, or cheek and lip injury. Psychological or psychiatric referral is needed when biting is severe, intentional, repetitive, self-injurious, associated with trauma, or accompanied by serious emotional dysregulation. Occupational therapy referral is useful when sensory processing difficulties are prominent and affect daily functioning. Neurological or developmental assessment may be needed when biting occurs with regression, seizures, severe motor signs, or global developmental concerns.

Referral does not reduce the role of the speech-language pathologist. Rather, it strengthens the clinical plan by ensuring that communication, feeding, sensory, behavioral, and medical factors are addressed within an interdisciplinary framework.

5-5- Clinical formulation:

After assessment, the clinician should formulate the case in a short, explicit statement. For example: “Biting appears mainly communicative and behavioral. It occurs when access to toys is

blocked and when the child cannot request or refuse. Oral-motor signs are not prominent.” Another formulation may be: “Biting is mixed. It includes object chewing during waiting, peer biting during toy conflict, and feeding signs that suggest weak chewing and texture sensitivity.”

This formulation is more useful than a label because it links assessment to intervention. It identifies the main function, secondary contributing factors, risk level, and first-line intervention priorities. It should be revised as data are collected.

6- Proposed multidimensional intervention:

Intervention should be based on the diagnostic hypothesis. Punishment, shouting, or exclusion may stop biting temporarily but often fails to teach the child what to do instead. In some children, punitive responses increase anxiety and make biting more likely. The intervention should teach a replacement behavior that is easier than biting, safer than biting, and reinforced more consistently than biting.

Functional Communication Training is particularly relevant when biting replaces communication. Blair et al. reported that FCT showed large effects in reducing challenging behavior and moderate-to-large effects in increasing replacement behavior among young children with autism spectrum disorder, while also noting the need for stronger methodological quality in future studies (Blair et al., 2025). Walker et al. also concluded that FCT involving AAC in school settings was effective in reducing challenging behavior and promoting aided or unaided AAC use among children with disabilities (Walker et al., 2018, pp. 118-129).

Table 3. Intervention axes according to the dominant function of biting. Source: Prepared by the author.

Dominant hypothesis	Primary goals	Examples of procedures	Follow-up indicators
Behavioral biting	Reduce reinforcement of biting and teach a safer replacement response.	Antecedent modification; clear routines; planned adult response; reinforcement of waiting, requesting, and turn-taking.	Weekly frequency, injury severity, successful waiting, peer safety.
Communicative biting	Build functional communication for needs, refusal, help, pain, and break.	FCT; signs or pictures; “I want,” “No,” “Break,” “Help,” “Pain”; AAC if speech is not reliable.	Number of independent requests/refusals; reduced biting after communication training.
Oral sensory biting	Provide safe oral regulation and reduce sensory overload.	Identify triggers; structured sensory breaks; safe oral alternatives under supervision; occupational therapy collaboration.	Decrease in unsafe object chewing; improved regulation during waiting and transitions.
Oral-motor/feeding biting	Improve functional oral skills and eating safety.	Feeding-based oral-motor assessment; tongue lateralization; jaw stability; graded textures; swallowing monitoring;	Chewing efficiency, texture tolerance, reduced pocketing, safe meals, fewer oral injuries.

Dominant hypothesis	Primary goals	Examples of procedures	Follow-up indicators
		medical referral when needed.	
Mixed biting	Coordinate communication, behavior, sensory, and feeding goals.	Integrated plan; unified family-school response; data recording; interdisciplinary referrals.	Reduced biting across contexts; increased replacement behaviors; improved participation.

6-1- Communication-based intervention:

When biting is communicative, the child should be taught a replacement response that serves the same function. If the child bites to obtain a toy, the replacement may be “my turn,” “I want,” or a picture exchange. If he bites to escape a task, the replacement may be “break.” If he bites when in pain, the replacement may be pointing to a body part or using a pain card. If he bites during peer conflict, the replacement may be “stop,” “mine,” “help,” or “teacher.” The replacement response should be taught before the crisis, practiced in natural routines, and reinforced immediately.

AAC should not be delayed until speech fails completely. It can support speech, reduce frustration, and provide a reliable tool when the child is tired, anxious, or dysregulated. AAC may include gestures, signs, pictures, communication boards, low-tech cards, or electronic devices. The decision should be individualized and culturally appropriate.

6-2- Behavioral and environmental intervention:

When biting is maintained by escape, access, attention, or control, the environment should be reorganized. Adults should reduce avoidable triggers, prepare transitions, use visual schedules, limit crowding, mediate peer conflict early, and reinforce safe alternatives. The child should not gain automatic access to the desired outcome through biting. At the same time, the child should gain access quickly when he uses the replacement behavior.

Adult responses must be consistent across home and school. If one adult removes all demands after biting and another insists on punishment, the behavior may become more variable and more resistant to change. A written response plan is therefore recommended. It should state what adults do before biting, immediately after biting, and after the child uses a replacement response.

6-3- Sensory and oral regulation intervention:

When oral sensory seeking is the dominant hypothesis, the goal is not to suppress oral input but to make it safe and socially acceptable. The clinician should identify when the child seeks oral pressure and whether this occurs with fatigue, noise, waiting, anxiety, or low attention. Safe alternatives may be used only after considering age, choking risk, hygiene, supervision, and professional guidance. They should not replace communication training or feeding assessment.

Sensory routines may include predictable breaks, deep-pressure activities, reduced noise, structured waiting tasks, and an oral alternative when appropriate. Collaboration with occupational therapy is recommended when sensory difficulties are broad, intense, or interfere with daily functioning.

6-4- Oral-motor and feeding intervention:

When biting is linked to oral-motor or feeding difficulty, intervention should be functional and feeding-oriented. It should not consist of isolated oral exercises with no relation to the child's real eating and communication needs. The clinician should work on oral awareness, lip closure, jaw stability, tongue lateralization, chewing coordination, safe texture progression, and mealtime posture. Intervention should be guided by assessment findings and should respect swallowing safety.

West (2024) emphasizes theory-driven and evidence-based approaches for school-based clinicians working with pediatric feeding disorder and dysphagia. This supports the need to connect oral-motor work to functional feeding outcomes, participation, and safety. If coughing, choking, wet voice, recurrent chest infections, or significant nutritional concerns are present, the child should be referred for medical and instrumental assessment as appropriate.

6-5- Family-school collaboration and monitoring:

Biting decreases more reliably when the same plan is used by parents, teachers, aides, and clinicians. The family should understand that the aim is not to excuse harmful behavior but to replace it with safer communication and regulation. Teachers need practical steps that fit the classroom: prevention during high-risk situations, quick access to communication cards, safe distance during escalation, reinforcement of alternatives, and data recording.

Monitoring should be simple. The team can record weekly biting frequency, injury severity, contexts, replacement communication attempts, object chewing, mealtime signs, and adult response consistency. Progress should be judged not only by fewer biting incidents but also by more functional communication, safer peer interaction, better regulation, and improved participation.

Table 4. Weekly follow-up indicators for clinical and school monitoring. Source: Prepared by the author.

Indicator	How to record it	Clinical use
Biting frequency	Number of incidents per day or week.	Shows whether risk is decreasing.
Severity	No mark, red mark, skin break, medical care required.	Guides safety planning and referral urgency.
Context	Transition, peer conflict, waiting, meal, noise, fatigue, task demand.	Identifies modifiable triggers.
Replacement communication	Number of independent or prompted uses of words, signs, cards, or AAC.	Shows whether communication is replacing biting.
Object chewing	Type of object, time, duration, trigger, safer alternative used.	Tracks oral sensory regulation needs.
Feeding signs	Texture refusal, gagging, coughing, pocketing, chewing fatigue.	Identifies need for feeding/swallowing support.
Adult consistency	Was the agreed response plan followed? yes/partly/no.	Explains slow progress and guides coaching.

7- Applied case model:

A child aged five years and six months attends preschool. He has moderate expressive language delay. He bites peers when they take his toys, chews the sleeves of his clothes while waiting, and

refuses some solid foods. His mother reports that he cannot clearly express his needs. He screams or pushes when angry and puts many objects in his mouth during play.

Observation shows that peer biting usually occurs after a toy is removed or when the child is prevented from an activity. This suggests behavioral and communicative functions. Clothes chewing occurs mainly during waiting and idle time, which suggests oral sensory seeking. Refusal of solid foods, slow chewing, and preference for soft textures raise the possibility of feeding skill weakness or oral sensitivity. The behavior cannot therefore be explained by aggression alone. It is a mixed profile.

The clinical formulation is: mixed biting with behavioral-communicative, oral sensory, and possible feeding skill components. The intervention plan includes teaching “I want,” “my turn,” “no,” “break,” and “help” through words, signs, or picture cards; training the teacher to intervene before escalation; reinforcing every appropriate request; using structured waiting routines; providing safe oral regulation after specialist guidance; conducting oral-motor and feeding assessment; introducing suitable textures gradually; recording weekly data; and unifying family and preschool responses.

8- Discussion:

The analysis confirms that biting is a multidimensional clinical sign. Its visible form may be identical across children, but its function can differ widely. This has direct implications for assessment and intervention. A child who bites because of expressive language delay needs communication alternatives. A child who bites because of sensory seeking needs regulation and safe oral input. A child who bites during meals needs oral-motor and feeding assessment. A child whose biting is reinforced by environmental consequences needs functional behavior intervention. A mixed case needs an integrated plan.

The speech-language pathologist is well placed to contribute to this analysis because the profession connects language, communication, oral function, feeding, and participation. However, the role should be interdisciplinary. Biting with medical, dental, psychological, sensory, or swallowing risks cannot be managed by one specialist alone. The best clinical practice is collaborative, data-based, family-centered, and context-sensitive.

The article also shows that intervention should be ethical. The child should be protected from harm, and peers should be kept safe. At the same time, the child who bites should not be reduced to a label such as aggressive or disobedient. The clinician must search for the unmet communicative, sensory, emotional, or oral-motor need behind the behavior and teach a safer way to meet it.

9- Conclusion:

Biting in children is not a simple behavior with a single meaning. It may indicate maladaptive behavior, weak functional communication, sensory seeking, emotional dysregulation, oral-motor dysfunction, feeding difficulty, or a mixed clinical profile. For this reason, intervention based only on punishment or suppression is not sufficient and may be misleading.

A speech-language pathology differential diagnosis should examine function, context, communication, sensory signs, oral-motor control, feeding indicators, medical and dental factors, and environmental consequences. The proposed framework helps clinicians distinguish between

behavioral biting, communicative biting, oral sensory biting, oral-motor/feeding biting, and mixed biting. It also links each diagnostic hypothesis to practical intervention axes.

Effective intervention begins with understanding. When the function of biting is known, the child can be taught safer communication, better regulation, improved oral skills, and more adaptive participation. Family and school collaboration is essential for maintaining progress and preventing recurrence.

10- Recommendations:

Based on the analysis, the study recommends that biting should be assessed through a multidimensional speech-language pathology protocol rather than through behavioral observation alone. Clinicians should include functional communication assessment in every case of repeated biting, especially in children with language delay, autism spectrum disorder, intellectual disability, hearing impairment, or ADHD.

Preschools and schools should use simple observation grids to record antecedents, consequences, communication attempts, sensory signs, and feeding indicators. They should avoid punitive responses that do not teach alternatives. Families and teachers should receive training in replacement communication, prevention of high-risk situations, and consistent responses after biting.

Speech-language pathology programs should give more attention to the relationship between oral-motor functions, feeding, sensory regulation, and challenging behaviors. Future empirical studies are needed to test the proposed observation grid, compare profiles of biting across diagnostic groups, and evaluate the effectiveness of integrated communication-sensory-feeding interventions.

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