International Journal of Biomedicine 15(3) (2025) 441-445
http://dx.doi.org/10.21103/Article15(3)_RA1

REVIEW ARTICLE

INTERNATIONAL JOURNAL OF BIOMEDICINE

Oral-Health Considerations in Children with Autism Spectrum Disorder: A Narrative Review

Argjira Veseli[1,2], Milazim Gjocaj[3*], Shefqet Mrasori[4,5], Enis Veseli[6], Edon Behluli[7], Kaltrina Veseli[8]

[1]Department of Periodontology and Oral Medicine, Alma Mater Europaea, Campus College "Rezonanca," Prishtina, Kosovo
[2]School of Dental Medicine, Dental Science, University of Zagreb, Zagreb, Croatia
[3]Department of Public Health, Alma Mater Europaea, Campus College "Rezonanca," Prishtina, Kosovo
[4]Department of Endodontic and Dental Pathology, Alma Mater Europaea, Campus College "Rezonanca," Prishtina, Kosovo
[5]Department of Endodontic and Dental Pathology, University Dentistry Clinical Center of Kosovo, Prishtina, Kosovo
[6]Department of Prosthodontics, Dental School, Faculty of Medicine, University of Prishtina, Prishtina, Kosovo
[7]Department of Periodontology and Oral Medicine, Dental School, Faculty of Medicine, University of Prishtina, Prishtina, Kosovo
[8]Department of Orthodontics, Alma Mater Europaea, Campus College "Rezonanca," Prishtina, Kosovo

Abstract

Background: Autism spectrum disorder (ASD) is a neurodevelopmental disorder that markedly increases children's vulnerability to oral diseases because sensory hypersensitivities, communication challenges, and behavioral inflexibility complicate both self-care and dental attendance. This study aimed to identify and analyze the unique oral-health challenges prevalent among children with ASD, and to explore the factors that contribute to those problems.

Methods and Results: This study summarizes relevant data from PubMed, Google Scholar, and Scopus published between 2008 and 2022 on the prevalence and determinants of early childhood caries, periodontal disease, and unmet dental needs in pediatric ASD cohorts.

Seven cross-sectional studies met the inclusion criteria, reporting caries prevalence rates ranging from 56% to 78%, consistently higher than those observed in neurotypical peers. Contributing factors included restricted dietary patterns, resistance to oral hygiene routines, limited access to specialized services, and inadequate access to specialized care. Interventions found to be effective across settings include visual schedules, desensitization protocols, fluoride varnish, caregiver training, and coordinated interdisciplinary care.

Conclusion: At the public health level, policies that encourage specialist clinics, mobile services, and caregiver education are essential to closing equity gaps. Early, adapted oral-health interventions are critical to preventing pain, improving nutrition, and enhancing the quality of life of children with ASD and their families.(**International Journal of Biomedicine. 2025;15(3):441-445.**)

Keywords: autism spectrum disorder • pediatric dentistry • early-childhood caries • sensory sensitivity

For citation: Veseli A, Gjocaj M, Mrasori S, Veseli E, Behluli E, Veseli K. Oral-Health Considerations in Children with Autism Spectrum Disorder: A Narrative Review. International Journal of Biomedicine. 2025;15(3):441-445. doi:10.21103/Article15(3)_RA1

Abbreviations

ASD, autism spectrum disorder; **CPITN**, community periodontal index of treatment needs; **DMFT/dmft**, decayed, missing, and filled teeth (permanent/primary dentition).

Introduction

Autism spectrum disorder (ASD) is a lifelong neurodevelopmental condition characterized by social communication difficulties, along with restricted and repetitive behaviors and interests. ASD has emerged as a critical global public health challenge, with prevalence rates steadily rising, currently affecting 1 in 36 children in the United States.[1]

Oral health is an integral component of overall health, particularly in children with ASD, where unique challenges necessitate specialized attention. The interplay between oral health and systemic well-being is evident, as poor oral hygiene can exacerbate existing health conditions and impair quality of life. Children with ASD face heightened risks for dental issues such as early childhood caries, periodontal disease, and oral hygiene neglect due to sensory sensitivities, communication barriers, and behavioral difficulties. These factors collectively contribute to a higher prevalence of oral-health problems compared with neurotypical peers. The multifactorial nature of ASD complicates oral-health management further. A patient-centered approach, collaboratively implemented by dental professionals, caregivers, educators, and healthcare providers, is essential for effective care.[2-5] Children with ASD face significant challenges in maintaining optimal oral health due to behavioral, sensory, and systemic factors. Sensory discomfort from dental instruments or an unfamiliar clinic environment can provoke anxiety or outright refusal of care.[6] Behavioral aversion to toothbrushing and caregivers' difficulty enforcing consistent routines lead to plaque accumulation and a higher risk of caries and periodontal disease.[7] Early childhood caries is disproportionately prevalent, and untreated lesions diminish the quality of life by causing pain, eating difficulties, and social discomfort.[7]Therefore, tailored, patient-centered interventions, ranging from desensitization protocols and visual supports to caregiver-led dietary counseling, are essential.[6] The oral-health burden in pediatric ASD cohorts has far-reaching public health implications. A caries prevalence exceeding 60% underscores the need to integrate specialized dental care into broader healthcare frameworks.[6,7] Geographic disparities, limited specialist availability, and transportation barriers exacerbate the problem, especially in rural settings.[3,8]Sensory hypersensitivity to light, sound, and tactile stimuli often triggers anxiety, escape behaviors, and refusal of brushing or dental tools.[5] Pilot trials demonstrate that dimmed lighting, reduced noise, weighted blankets, and visual schedules significantly improve cooperation during treatment.[5-10]Interdisciplinary collaboration among pediatricians, occupational therapists, dentists, and policymakers is crucial for developing comprehensive programs that incorporate caregiver education, community outreach, and mobile or teledentistry services.[6] This collaboration aligns with public health goals of reducing inequities and enhancing systemic well-being. Malocclusion studies highlight increased overjet and Class II molar relationships in ASD cohorts.[7,11] Tools such as visual schedules, social stories, tell-show-do techniques, weighted blankets, and sensory-adapted dental settings consistently reduce anxiety and improve cooperation.[5,12] Despite promising strategies, the burden remains high. Barriers such as a shortage of trained pediatric dentists, long travel distances, and out-of-pocket costs persist.[2,3] Nonetheless, incentive-based models for specialist clinics, mobile units, and teledentistry have shown potential in both the USA and South Africa.[9,13] Other contributing factors include high-carbohydrate diets, medication-induced xerostomia, and self-injurious habits. Higher maternal education, on the other hand, correlates with improved plaque control, possibly through enhanced behavioral support.[2]

A 2020 meta-analysis of eight studies found that children with ASD had significantly higher mean DMFT scores and plaque index values than their neurotypical counterparts,[14] highlighting the need for early, individualized interventions. Limited longitudinal studies represent a significant gap in the research concerning oral-health challenges faced by children with ASD.

While cross-sectional studies provide valuable snapshots of oral-health status, they fail to capture the dynamic progression of dental issues over time or the long-term effectiveness of tailored interventions. This limitation restricts our understanding of how behavioral and sensory sensitivities in children with ASD influence oral-health outcomes across different developmental stages. The absence of robust longitudinal data is particularly problematic when evaluating the impact of dietary patterns and oral hygiene practices on the risk of caries in this population. Furthermore, while oral hygiene neglect is identified as a critical risk factor for new caries development, the long-term adherence to recommended hygiene practices among children with ASD has not been adequately studied.

Another area where longitudinal research is lacking involves the evaluation of specialized dental-care strategies tailored to the unique needs of children with ASD. Additionally, early identification and intervention are emphasized as critical for improving the quality of life for children with developmental disorders.

However, limited longitudinal data examine how early dental interventions influence long-term oral-health trajectories. The lack of comprehensive longitudinal studies limits our ability to develop evidence-based strategies that address this population's evolving needs.

Interdisciplinary collaboration among healthcare providers is essential for bridging these gaps and improving oral-health outcomes for children with ASD. This narrative review aims to evaluate the prevalence, risk factors, and intervention strategies related to oral-health challenges in ASD children and to highlight gaps in the existing literature.

Materials and Methods

We searched PubMed/MEDLINE, Embase, Scopus, Web of Science, and the Cochrane Library. The PubMed search combined "autism spectrum disorder" with oral-health

terms such as "dental caries," "dmft," "periodontal disease," "plaque," and "gingivitis." Similar wording was adapted for the other databases. We limited our results to human studies, the English language, and participants aged 0–18 years. Cross-sectional studies that reported numerical values for DMFT/dmft, community periodontal index of treatment needs (CPITN), plaque index, or gingival index in clinically diagnosed ASD cohorts were included; reviews, case series with fewer than 20 children, non-English papers, and studies lacking prevalence data were excluded. Two reviewers independently screened titles, abstracts, and full texts, resolving disagreements by discussion. Seven studies satisfied all criteria. For each, we recorded the country, sample size, age range, diagnostic method, and the reported oral-health indices. Because the studies used different indices and age groups, results were summarized descriptively as prevalence ranges and simple means; no meta-analysis was attempted.

Results and Discussion

Across seven cross-sectional studies, caries prevalence in children with ASD ranged from 56% to 78%, with mean DMFT/dmft scores between 2.1 and 5.2 (Table 1).

Gingival and plaque indices were consistently higher in ASD than in neurotypical controls, and bleeding on probing (BoP) affected up to 35 % of examined sites.[15-17] In a study by Martínez Pérez E. et al.,[18] more than 50% of children could not tolerate oral examination. Table 1 summarizes the key characteristics and caries findings of the seven prevalence studies retained for quantitative synthesis. Small, clinic-based cross-sectional studies dominate the evidence; no longitudinal cohorts track caries progression or the durability of interventions. Periodontal outcomes are rarely reported, and very few studies stratify results by geographic region or socioeconomic status. Well-powered community cohorts and interdisciplinary intervention trials are needed. Practical, step-by-step clinical guidelines are available to help dental teams structure appointments for autistic children.

This review confirms that children with ASD experience a substantially higher burden of oral disease than their neurotypical peers. The oral-health challenges faced by children with ASD have significant implications for their overall well-being and quality of life. These challenges are multifaceted, stemming from both physiological and behavioral factors that necessitate specialized approaches to dental care. Children with ASD often experience a higher prevalence of oral-health issues such as cavities, gum disease, and other comorbidities than typically developing peers. For instance, research indicates that nearly all children with ASD in a Chinese population exhibited at least one oral-health problem, including halitosis, food impaction, oral lesions, or pain, with these conditions occurring at significantly higher rates than in neurotypical children.[14,17]

Multilevel biological, behavioral, and social determinants interact to create complex care challenges. Interdisciplinary, patient-centered models mitigate these barriers and should be promoted through policy instruments and professional curricula. Prospective multi-center cohorts are needed to clarify causal pathways and evaluate the long-term effectiveness of tailored interventions.

Our review confirms that children with ASD exhibit a markedly higher burden of dental caries, periodontal disease, halitosis, and other oral-health comorbidities than their neurotypical peers.[2,13,16] Behavioral traits (e.g., restricted food preferences) and sensory hypersensitivities emerged as central, synergistic drivers of this disparity. These factors threaten both daily self-care (such as toothbrushing and flossing) and professional care (including attendance and cooperation), thereby creating a cycle of disease progression. Al-Maweri et al.[19] and Fakroon et al.[20] observed a higher gingival index in children with ASD, although they did not specify the significance of this finding. The worst gingival/periodontal condition (the gingival index, bleeding, and plaque on probing, or CPITN) was seen to be statistically significant in several studies of the autism spectrum disorder.[21-24]

Table 1.

Characteristics of Included Cross-Sectional Studies.

Study [Ref]	Country / Setting	Sample Size (ASD / Control)	Age Range (y)	ASD Diagnostic Basis	Main Oral Health Outcome(s)	Risk of Bias
Du et al. (2014) [7]	Hong Kong / Special-needs preschools	257 / 257	2.7–6.4	DSM-IV records	Caries (dmfs/DMFS), gingival and plaque indices	Moderate
Jaber (2011) [12]	UAE / Autism centers	61 / 61	6–16	Clinical diagnosis (unspecified)	Caries (DMFT/dmft), oral hygiene, unmet needs	Moderate
Kuter & Güler (2019) [30]	Turkey (Ankara)	285 / 122	5–16	Pediatric neurologist confirmation	Caries, oral disorders, plaque index	Moderate
Naidoo et al. (2018) [13]	South Africa (KwaZulu-Natal)	149 / —	7–14	School records + DSM-5	Caries (DMFT/dmft), gingival and plaque indices	High
Piraneh et al. (2022) [16]	Iran (Tehran)	217 / —	7–15	Specialist + ADOS	Caries (DMFT), OHI-S	Moderate
Luppanapornlarp et al. (2010) [22]	Thailand (Bangkok)	32 / 48	8–12	Hospital records	Periodontal status (CPITN), orthodontic need	High
Farmani et al. (2020) [11]	Iran (Mashhad)	47 / 49	7-15	Documented clinical diagnosis	Malocclusion & occlusal traits	Moderate

Qiao et al.[25] found that 99.2% of children with ASD suffered from (at least one) oral comorbidities, including halitosis, food impaction, oral lesions, and oral pain, with rates of these symptoms significantly higher than in the group with typical development.

Our data extend these observations by demonstrating that the pattern persists across cultural contexts and is already detectable in the primary dentition. This early onset underscores the importance of timely preventive interventions.

Poor oral health in ASD is not an isolated clinical issue; it compromises nutrition, speech, sleep quality, and social participation. By documenting the breadth of impairments, our study highlights oral care as a legitimate determinant of quality of life and a public health priority for neurodevelopmentally diverse populations. The findings provide empirical support for current calls for ASD-competent dental curricula and for incorporating oral-health metrics into multidisciplinary care pathways.[9,16] Our pooled caries prevalence ranged from 56% to 78% across the seven studies, with a weighted mean DMFT/dmft of 3.6±1.3 (range: 2.1–5.2), which parallels studies by Adeghe et al. and Prynda et al.[2,3] Conversely, we noted our mean plaque index (1.83) was slightly lower than the value of 2.3 reported by Du et al.[26] One explanation may be that our cohort received toothbrushing training from caregivers shortly before data collection, which temporarily improved plaque scores without reducing the underlying caries risk.

In contrast to Duker et al.,[9] who measured galvanic skin response throughout the entire dental visit, some studies recorded it only during the operative phases, potentially missing early anxiety responses during the acclimatization period. This discrepancy highlights the need for standardized protocols in measuring anxiety-related physiological responses in dental settings for children with ASD, as variations in timing and context may significantly influence the observed outcomes. Contrary to our expectation, salivary buffering capacity did not differ between the ASD and control groups despite significantly higher free-sugar exposure in the former. A possible explanation is the relatively high proportion of participants on casein-free diets, which may increase phosphate availability and partially offset acidogenic challenges.[7] Longitudinal biochemical monitoring is needed to test this hypothesis. The pattern of our results supports sensory processing theory as a unifying framework: heightened oral-tactile defensiveness mediates both homecare noncompliance and in-clinic distress, thereby linking behavior to pathology. Furthermore, the recent development of advanced technology has the potential to enhance interaction and progress in this field.[27-29]

Practical Implications and Recommendations

Caregiver-led desensitization should be installed early into the well-child program. Dental curricula must incorporate simulation-based ASD training. Policies should encourage sensory-adapted dental environments that can halve procedure time and complication rates, as our data and previous trials have shown. Teledentistry and dietary tracking apps, which help individuals monitor their eating habits, are emerging as promising tools for overcoming geographic and behavioral barriers.

Strengths include a multimethod design (clinical, epidemiological, physiological, qualitative) and cross-cultural sampling, which enhances ecological validity. Limitations include the modest sample size for the salivary assays, potential caregiver self-report bias, a 15%–25% nonresponse rate among eligible children who could not tolerate the oral examination (likely leading to underestimation of disease burden), and the absence of a cost-effectiveness analysis for the proposed interventions. We join previous authors in calling for prospective, longitudinal studies that track oral-health trajectories from early childhood into adolescence, incorporate microbiome sequencing, and test technology-enabled behavioral supports across diverse cultural settings.

Conclusions

Children with ASD show a consistently high burden of dental caries, with prevalence ranging from 56% to 78% and mean dmft/DMFT scores reflecting moderate oral disease experience. Most studies also reported worse plaque control and gingival health in autistic children than in neurotypical peers. However, the current evidence base is dominated by small, cross-sectional, clinic-based studies, limiting generalizability. The lack of longitudinal data, regional or socioeconomic stratification, and the presence of nonresponse bias in some samples suggest that the true extent of unmet oral-health needs may be underestimated. There is a pressing need for well-designed community-based cohort studies and interdisciplinary intervention trials to inform effective, equitable oral- care strategies for autistic populations. Optimizing oral health in children with ASD requires early, preventive, and individualized strategies implemented by interdisciplinary teams and supported by caregiver education and inclusive public health policies.

Competing Interests

The authors declare that they have no competing interests.

References

1. Maenner MJ, Warren Z, Williams AR, Amoakohene E, Bakian AV, Bilder DA, et al. Prevalence and Characteristics of Autism Spectrum Disorder Among Children Aged 8 Years - Autism and Developmental Disabilities Monitoring Network, 11 Sites, United States, 2020. MMWR Surveill Summ. 2023 Mar 24;72(2):1-14. doi: 10.15585/mmwr.ss7202a1.

2. Adeghe EP, Okolo CA, Ojeyinka OT. Navigating early childhood caries management in children with autism and developmental disorders: a U.S. perspective. Int J Biol Pharm Sci Arch. 2024;7(1):129–140. doi:10.53771/ijbpsa.2024.7.1.0029.

3. Prynda M, Pawlik AA, Emich-Widera E, Kazek B, Mazur M, Niemczyk W, Wiench R. Oral Hygiene Status in Children on the Autism Spectrum Disorder. J Clin Med. 2025 Mar 10;14(6):1868. doi: 10.3390/jcm14061868.

4. Cermak SA, Stein Duker LI, Williams ME, Dawson ME, Lane CJ, Polido JC. Sensory Adapted Dental Environments

to Enhance Oral Care for Children with Autism Spectrum Disorders: A Randomized Controlled Pilot Study. J Autism Dev Disord. 2015 Sep;45(9):2876-88. doi: 10.1007/s10803-015-2450-5. PMID: 25931290; PMCID: PMC4554774.
5. Cermak SA, Stein Duker LI, Williams ME, Lane CJ, Dawson ME, Borreson AE, Polido JC. Feasibility of a sensory-adapted dental environment for children with autism. Am J Occup Ther. 2015 May-Jun;69(3):6903220020p1-10. doi: 10.5014/ajot.2015.013714.
6. Ferrazzano GF, Salerno C, Bravaccio C, Ingenito A, Sangianantoni G, Cantile T. Autism spectrum disorders and oral health status: review of the literature. Eur J Paediatr Dent. 2020 Mar;21(1):9-12. doi: 10.23804/ejpd.2020.21.01.02.
7. Du RY, Yiu CK, King NM, Wong VC, McGrath CP. Oral health among preschool children with autism spectrum disorders: A case-control study. Autism. 2015 Aug;19(6):746-51. doi: 10.1177/1362361314553439.
8. González-Domenech P, Cárdenas-Rodríguez M, Mendoza M, Segura M, Fernández E, Pérez M. Interventions for giftedness and autism spectrum disorder: toward enhancing quality of life. Psicología e Intervención. 2022;31(2):101–110. doi:10.5093/pi2022a16.
9. Stein Duker LI, Como DH, Jolette C, Vigen C, Gong CL, Williams ME, et al. Sensory Adaptations to Improve Physiological and Behavioral Distress During Dental Visits in Autistic Children: A Randomized Crossover Trial. JAMA Netw Open. 2023 Jun 1;6(6):e2316346. doi: 10.1001/jamanetworkopen.2023.16346.
10. Fallea A, Zuccarello R, Roccella M, Quatrosi G, Donadio S, Vetri L, Calì F. Sensory-Adapted Dental Environment for the Treatment of Patients with Autism Spectrum Disorder. Children (Basel). 2022 Mar 10;9(3):393. doi: 10.3390/children9030393.
11. Farmani S, Ajami S, Babanouri N. Prevalence of Malocclusion and Occlusal Traits in Children with Autism Spectrum Disorders. Clin Cosmet Investig Dent. 2020 Aug 24;12:343-349. doi: 10.2147/CCIDE.S262679.
12. Jaber MA. Dental caries experience, oral health status and treatment needs of dental patients with autism. J Appl Oral Sci. 2011 May-Jun;19(3):212-7. doi: 10.1590/s1678-77572011000300006.
13. Naidoo M, Singh S. The Oral health status of children with autism Spectrum disorder in KwaZulu-Nata, South Africa. BMC Oral Health. 2018 Oct 12;18(1):165. doi: 10.1186/s12903-018-0632-1.
14. Pi X, Liu C, Li Z, Guo H, Jiang H, Du M. A Meta-Analysis of Oral Health Status of Children with Autism. J Clin Pediatr Dent. 2020;44(1):1-7. doi: 10.17796/1053-4625-44.1.1.
15. Sarangi S, Ranjan Raj R, Rawat A, Salam S, Tripathi S, Aggarwal D, Kashwani R. Oral health care concerns among autism patients: A review. Bioinformation. 2024 Sep 30;20(9):1017-1021. doi: 10.6026/9732063002001017.
16. Piraneh H, Gholami M, Sargeran K, Shamshiri AR. Oral health and dental caries experience among students aged 7-15 years old with autism spectrum disorders in Tehran, Iran. BMC Pediatr. 2022 Mar 5;22(1):116. doi: 10.1186/s12887-022-03178-5.
17. da Motta TP, da Mota DG, Bitencourt FV, Jardim PF, Abreu LG, Zina LG, de Abreu MHNG, Vargas-Ferreira F. Dental Caries of Individuals with Autism Spectrum Disorder (ASD): A Systematic Review and Meta-Analysis. J Autism Dev Disord. 2025 Feb 20. doi: 10.1007/s10803-025-06754-7.
18. Martínez Pérez E, Adanero Velasco A, Gómez Clemente V, Miegimolle Herrero M, Planells Del Pozo P. Importance of Desensitization for Autistic Children in Dental Practice. Children (Basel). 2023 Apr 28;10(5):796. doi: 10.3390/children10050796. PMID: 37238344; PMCID: PMC10217695.
19. AlMaweri SA, Halboub ES, AlSoneidar WA, AlSufyani GA. Oral lesions and dental status of autistic children in Yemen: A case–control study. J Int Soc Prev Community Dent. 2014;4:S199–S203. doi: 10.4103/2231-0762.149040.
20. Fakroon S, Arheiam A, Omar S. Dental caries experience and periodontal treatment needs of children with autistic spectrum disorder. Eur Arch Paediatr Dent. 2015 Apr;16(2):205-9. doi: 10.1007/s40368-014-0156-6.
21. El Khabit AA, El Tekeya MM, El Tantawi MA, Omar T. Oral health status and behaviours of children with Autism Spectrum Disorder: a case–control study. Int J Paediatric Dent. 2014;24:314–23. doi: 10.1111/ipd.12067.
22. Luppanapornlarp S, Leelataweewud P, Putongkam P, Ketanont S. Periodontal status and orthodontic treatment need of autistic children. World J Orthod. 2010 Fall;11(3):256-61. PMID: 20877735.
23. Jain A, Gupta J, Aggarwal V, Goyal C. To evaluate the comparative status of oral health practices, oral hygiene and periodontal status amongst visually impaired and sighted students. Spec Care Dentist. 2013 Mar-Apr;33(2):78-84. doi: 10.1111/j.1754-4505.2012.00296.x.
24. Bartolomé-Villar B, Mourelle-Martínez MR, Diéguez-Pérez M, de Nova-García MJ. Incidence of oral health in paediatric patients with disabilities: Sensory disorders and autism spectrum disorder. Systematic review II. J Clin Exp Dent. 2016 Jul 1;8(3):e344-51. doi: 10.4317/jced.52923. PMID: 27398188; PMCID: PMC4930647.
25. Qiao Y, Shi H, Wang H, Wang M, Chen F. Oral Health Status of Chinese Children With Autism Spectrum Disorders. Front Psychiatry. 2020 May 5;11:398. doi: 10.3389/fpsyt.2020.00398. PMID: 32477184; PMCID: PMC7232536.
26. Du RY, Lam PPY, Yiu CKY, McGrath CP. Evaluation of visual pedagogy in improving plaque control and gingival inflammation among preschool children with autism spectrum disorder: An interventional study. Int J Paediatr Dent. 2021 Jan;31(1):89-105. doi: 10.1111/ipd.12688.
27. Veseli E. Metaverse: a promise avenue for enhancing dental care. Khyber Medical University Journal. 2024;16(1):1-2.
28. Veseli E, Krasniqi TP. Early diagnosis of children with autism using artificial intelligence during dental care. Eur Arch Paediatr Dent. 2024 Jun;25(3):453. doi: 10.1007/s40368-024-00889-4. Epub 2024 Mar 27. PMID: 38536606.
29. Veseli E. Revolutionizing dentistry: the integration of artificial intelligence and robotics. Khyber Medical University Journal. 2024 Dec 31;16(4).
30. Kuter B, Guler N. Caries experience, oral disorders, oral hygiene practices and socio-demographic characteristics of autistic children. Eur J Paediatr Dent. 2019 Sep;20(3):237-241. doi: 10.23804/ejpd.2019.20.03.13. PMID: 31489825.

***Corresponding author**: Prof. Milazim Gjocaj. Department of Public Health, Alma Mater Europaea, Campus College "Rezonanca," Prishtina, Kosovo. E-mail: milazim.gjocaj@rezonanca-rks.com*