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The Use of Media and Method on Oral Health Promotion for Children with Autism: A Systematic Literature Review

Aulia Tasya Maharani[1(corresponding author)], Isnanto[2], Siti Fitria Ulfah[3]
[1(CA)]Department of Dental Nursing, Poltekkes Kemenkes Surabaya, Indonesia; 17auliatasya@gmail.com
[2]Department of Dental Nursing, Poltekkes Kemenkes Surabaya, Indonesia; nanto_am11@poltekkesdepkes-sby.ac.id
[3]Department of Dental Nursing, Poltekkes Kemenkes Surabaya, Indonesia; mirzafitri@poltekkesdepkes-sby.ac.id

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ABSTRACT

Most children with autism have problems brushing their teeth and require supervision when brushing their teeth. Reports received from parents/caregivers of children with autism in the city of Surabaya, about 59% of autistic children brush their teeth once a day or less, 37% brush their teeth if they want to and almost 27% don't brush their teeth when they don't want to. As a health worker, oral health promotion have an important role to spread information and guiding them to better health. The health promotion or training process in maintaining the oral health of children with autism has several factors to achieve the goal such as the method; media; message; and the educators themselves. In the process, media and methods are important for the success of an oral health promotion program. **Aim**: Explain the use of several suitable media and methods for oral health promotion in children with autism. **Methods**: Systematic literature review. **Population**: Children with autism **Results**: Several media and methods that can be used in promoting the health of autistic children are visual media (picture cards, pictures, flipcharts, social story), digital media (software applications), and audio-visual media (video) as well as several methods, such as PECS, tell show do, visual pedagogy, self-modeling, TEACCH, and yoga **Conclusion**: Visual media is the most widely used media in the articles that are reviewed. Some of the appropriate media that can be used in promoting the health of autistic children are visual media (picture cards, pictures, flipcharts, social story); digital media (software applications), and audio-visual (video) media. Some methods that are appropriate for autistic children are PECS, tell-show-do, visual pedagogy, self-modeling, TEACCH, and additional methods are found, namely the yoga method. Visual pedagogy and PECS methods are the most widely used methods in the reviewed articles.
Keywords: children with autism; autism spectrum disorder; oral health promotion; media

INTRODUCTION

Autism Spectrum Disorder (ASD) is a developmental disorder that can cause significant social, communication, and behavioral disturbances. Often people with ASD look different from normal people in general, but they can still communicate, interact, behave, and learn in different ways than most people in general. People with ASD can learn, think, and solve problems and can be measured from the gifted to the complex disorder. Some people with ASD desperately need help in their daily lives. Current ASD diagnoses include several conditions that were previously diagnosed separately, such as autistic disorder, Pervasive Developmental Disorder – Not Otherwise Specified (PDD-NOS), and Asperger's syndrome. This condition is currently classified as an autism spectrum disorder. Data from states that the prevalence of autism sufferers increased from 1 per 150 population in 2000 to 1 per 54 in 2016. ASD affects boys more with a prevalence of 1:37, while in girls 1: 151 [(1)].

Reports received from parents or caregivers of children with autism in the city of Surabaya, about 59% of autistic children brush their teeth once a day or less, 37% brush their teeth if they want to and almost 27% don't brush their teeth when they don't want to. About 51% of children with autism eat snacks more than 2 times a day after they eat and did not do cleaning strategies like drinking water or brushing their teeth. Fifty-three percent of parents/caregivers do not take their child to the dentist for a toothache solution but instead, buy analgesics or leave them alone. Research showed that 79% of children with autism in the city of Surabaya had experienced dental caries and 47% had untreated dental caries [(2)]. While the results of research in other cities show that generally, the OHI-S (Oral Hygiene Index Simplified) status of autistic children in Manado City is in the moderate category with an average OHI-S index of 2.77 [(3)].

Training in maintaining oral hygiene in children goes through some serious obstacles. The reason is that the characteristics of children with autism are having limited communication skills; short-term concentration or not being able to pay attention to something with a focus for a long time; inability to understand information and get bored quickly [(4)]. In a study conducted on autistic children in Hongkong, it was explained that the disturbing behavior of autistic children such as crying and shouting also occurred when they were required to brush their

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teeth and resulted in tremendous stress for parents or caregivers which could cause them to give up on caring for them [5]. dental health for autistic children. In addition, autistic children also have sensory difficulties in brushing their teeth and tasting toothpaste [6].

As a health worker, oral health promotion have important role to spread information and guiding them to better health. Change (adoption) of a person's behavior is a complex process and requires a relatively long time, indicators of behavior change can go through 3 stages, such as changes in knowledge, attitudes, and practices or actions. Health promotion is an important thing for the sake of spreading information about oral health in the community. Health promotion in the value of education, in general, is all the effort that is planned to influence others, whether individuals, groups, and communities so that they do what is expected by the educators of oral health promotion [7].

The oral health promotion or training process in maintaining the oral health of children with autism has several factors to achieve the goal, such as the method, media, message, and the educators. In the process, media and methods of health promotion are important for the success of a health promotion program [7]. Oral health education will look interesting if it is delivered with appropriate media and methods [8].

METHODS

This systematic literature review uses the PRISMA guidelines, Mendeley, and PICOS (Population, Intervention, Comparators, Outcomes, Study Design and Population Type, Publication Years, Language) on critical appraisal to comparing and summarizing all articles. The works of literature were obtained from 3 academic databases, namely: Google Scholar, Microsoft Academic, and Wiley Online Library. The minimum number of articles planned is 10 articles, published in the last 5 years with Indonesian or English language. The keywords that are used in databases are *"Autism spectrum disorders AND (tooth brushing program) AND (education tool and method)"*. The article screening was carried out for 1 month in November 2020.

Table 1. PICOS framework

Criteria	Inclusion	Exclusion
Population	Children with autism	Other than children with autism
Intervention	The use media and method of oral health promotion on children with autism	Other than the use media and method of oral health promotion on children with autism
Comparators	-	-
Outcomes	Toothbrushing skill, oral hygiene skill	Other than toothbrushing skill, oral hygiene skill
Study design and population type	All study desgin Type: original article	Type: non original article
Publication years	2015 or later	Before 2015
Language	Indonesian and english	Other than indonesian and english

The initial stage is to enter all journals or articles that have been found into the Mendeley application via the Mendeley web importer. After being entered through the Mendeley web importer, only 707 journals can be entered.

Furthermore, screening was carried out on the Mendeley application to check for duplication of articles, so that 77 article titles were found in 3 databases. Thus, the number of articles that passed the duplication screening was 664 titles.

The next stage is to conduct a feasibility test by assessing the content of the abstract based on inclusion and exclusion criteria. The inclusion criteria were carried out through critical appraisal with an instrument in the form of a checklist with 4 options, namely Yes (Score 1), No (Score 0), Unclear (Score 0) and Not applicable (Score 0). The sum of all item scores produces a total score which is converted in percentage terms. Furthermore, a cut-off value of 75% is determined. At this stage, 18 abstracts had to be issued, so that 12 articles were included in further studies.

The next stage is to conduct a feasibility test by assessing the contents of fulltext articles, in the same way as an abstract assessment. At this stage, 2 articles had to be issued, so that 10 articles were included in this studies.

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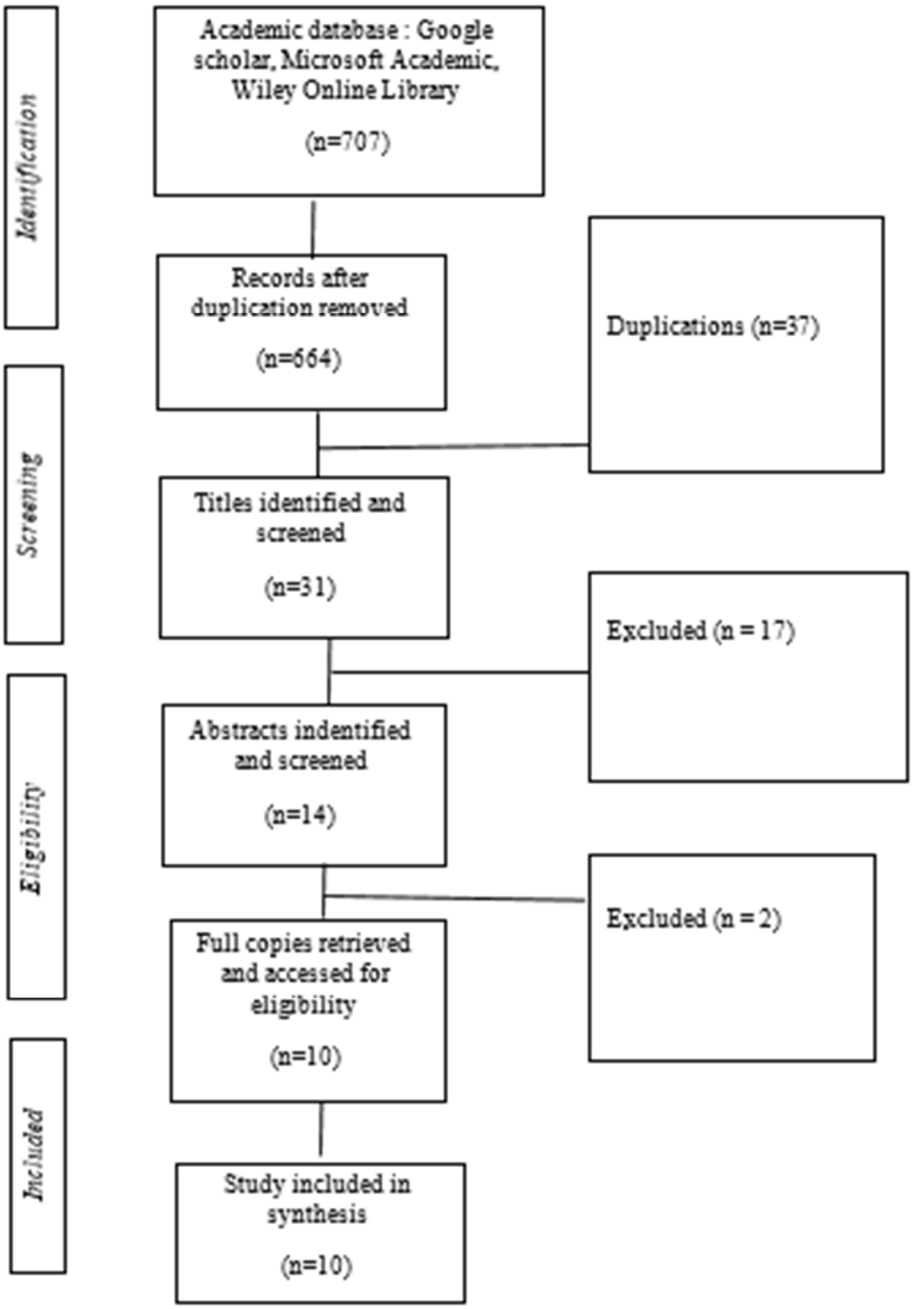

Figure 1. PRISMA flow diagram

RESULTS

Tabel 2 shows several types of media and method that are suitable for children with autism. Some of these media are visual media in the form of picture cards used in research by Doichinova et al and Al-Batayneh et al. Both of their research are using PECS as method however in research by Doichinova et al beside using PECS they also use self-modelling method as an addition.

In form of picture as media found in research by Smutkeeree et al, it explain that they use visual pedagogy as the method to support the media. In other research that also use picture as media was explained in research by Cahyani & Chamidah yet they use TEACCH as a method wich is a method that often used in autistic children.

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Other picture media is software based application on iPad called cATED is found in research by Lopez Cazaux et al it also says that they use visual pedagogy as the method.

Another visual media is flip chart that are found in study by Du et al and they use visual pedagogy as the method. There also social story that use self modelling method for children with autism is found in reserach by Zhou et al. In study by Kusumasari et al, they use photograph as media however the method is not explained in the study.

In both study by Ramassamy et al are using picture media and visual pedagogy as the method also video media and video-modelling as the method. The study also explain that they use yoga method to support the other method.

Table 2. Media and method used in oral health promotion for children with autism

No	Reference	Year	Study design	Population	Media	Method	Country
1.	Doichinova et al [4]	2019	Before-after study	30 autistic children aged 6-11 years old	Picture cards	PECS Tell-show-do	Bulgaria
2.	Al-Batayneh et al [9]	2020	Longitudinal study	75 autistic children aged 4-18 years old	Picture cards	PECS	Saudi Arabia
3.	Zhou et al (10)	2020	Before-after study	87 autistic children	Social story	Self-modelling	China
4.	Ramassamy et al [11]	2019	Comparative study	72 children with autism (medium severity category) aged 7-15 years old	Pictures Video	Visual pedagogy Video-modelling Yoga	India
5.	Ramassamy et al [12]	2019	Comparative study	72 children with autism (medium severity category) aged 7-15 years old	Pictures Video	Visual pedagogy Video-modelling Yoga	India
6.	Smutkeeree et al [13]	2020	Longitudinal quasi experimental study	31 autistic children (mild-moderate severity category) aged 5-17 years old	Pictures	Visual pedagogy	Thailand
7.	Du et al [14]	2020	Longitudinal study	122 autistic children aged 2,5 – 7 years old	Flip chart	Visual pedagogy	Hongkong
8.	Lopez Cazaux et al [15]	2019	Longitudinal study	55 autistic children aged 3 -19 years old	Picture based softwere application on iPad (cATED)	Visual pedagogy	France
9.	Cahyani & Chamidah [16]	2017	Quasi experimental	1 autistic child 4th grade elementary school student	Pictures	TEACCH	Indonesia
10	Kusumasari et al [17]	2016	Single subject quantitative	3 autistic children aged 8, 10 and 14 years old	Photograph	-	Indonesia

DISCUSSION

Most children with autism have problems brushing their teeth and require supervision. This is because it is related to their behavior in the form of behavioral limitation, limited interests and activities, limited manual dexterity, and sensory problems [18]. Training in the maintenance of oral and dental hygiene in autistic children goes through some serious obstacles. The reason is that the characteristics of autistic children are having limited communication skills; short-term concentration or not being able to pay attention to something with a focus for a long time; inability to understand information and, get bored quickly [4].

The study of Al-Batayneh et al explained that the visual media of picture cards in the PECS method was effective in practicing the ability to brush teeth and changing to better periodontal index, gingival index, and DMF-T. Another study by Doichinova et al also explained that the picture card media in the PECS method can train the ability to brush the teeth of autistic children and change the OHI-S index of autistic children for the better. This is in line with the research of [19] that picture cards in the PECS method can train autistic children's independence in brushing their teeth and change the periodontal index and OHI for the better.

PECS is a method that uses drawing aids, which uses a board or book and a selection of pictures as media for everyone to deliver messages. PECS makes it possible for those with "autistic" barriers to communicate with others without verbal letters. Previous studies and experiments have shown that PECS can improve expression on communication. The use of the PECS (Picture Exchange Communication System) method can be used as an

alternative in training autistic children's communication because this method adapts to the communication characteristics and uniqueness of autistic children [20,21]. In addition, in Doichinova et al's research, apart from using the PECS method, the research also uses the tell-show-do method, the reason is autistic children tend to learn well by imitating what others do. Doichinova et al also explained that the visual method is an appropriate non-verbal communication method to educate about dental health in children with autism where they have difficulty in social interaction, verbal and non-verbal communication. This is also in line with research by [22] which explains that the use of picture cards enables researchers to communicate information and instructions more effectively to autistic children.

In 6 other studies, it was explained that visual media images or photos were also effective in training the ability to brush teeth in autistic children. When compared with the practice of brushing teeth at the first visit, there was a statistically significant increase in the ability to brush teeth after the use of visual media in visual pedagogy for 2 weeks, 4 weeks, 3 months, and 6 months [13]. Another study by Du et al described a significant improvement in clinical oral and dental health (oral hygiene status and gingival health) after using visual media in the form of flip charts on visual pedagogy for 6 months.

The visual pedagogy method was found in 6 reviewed articles. Smutkeeree et al explained that there was a statistically significant increase in the ability to brush teeth after using visual pedagogy for 2 weeks, 4 weeks, 3 months, and 6 months. This is in line with a literature study that explains that the use of visual pedagogy improves dental and oral hygiene skills and increases cooperation in dental care in children with ASD [23]. The definition of visual pedagogy in education using images that demonstrate specificity and consistency in scientific terms [24]. In other words, visual pedagogy is education or training by utilizing visual media.

Another method that has proven effective is TEACCH (Treatment Education of Autistic and Related Communication and Handicapped Children) which is one of the educational therapies for autistic children which can also be used as an appropriate method of health promotion for autistic children in practicing brushing skills. The TEACCH method is a teaching method specifically designed for people with autism. Therefore, this TEACCH method has principles that are adapted to the characteristics of autistic children. The principles in the TEACCH method include environmental management, information is provided visually, children's interests are used as reinforcement and meaningful communication. In the study, it was explained that the use of the TEACCH method was able to improve self-development skills in brushing the teeth of autistic children [16].

In Zhou et al's study, social stories can improve the ability to brush teeth in groups of children with special needs, both autistic and non-autistic. Social stories can also change OHI-S status and gingival status for the better. Apart from using social stories, the research also uses a self-modeling method, where children with autism follow the steps on how to brush their teeth on social stories and practice them while looking at the mirror. If a child incorrectly practices a certain step that has been illustrated in the social story, the dental assistant will help hold his hand, and show how to brush their teeth properly. Children can see their appearance in the mirror. This is consistent with other studies that explain that dental stories can serve as a relatively simple, low-cost, and effective tool that can help families of autistic children prepare them to visit the dentist [25].

In addition to printed visual media, the use of digital visual media using a software application called cATED on the iPad® in a tooth brushing training program also enables the improvement of the ability to brush teeth in children with autism. Brushing teeth which is a preventive measure for dental and oral health care can be done better, along with increased compliance and autonomy of autistic children [15]. This is in line with the statement from [26] that the application for autistic children increases the ability to brush their teeth which also contributes as a preventive measure in autistic children. The use of the iPad as a medium for maintaining oral and dental hygiene, especially for learning to brush teeth, is a simple and effective medium.

The use of other media, namely audio-visual media in the form of videos, described in both studies belonging to [12,11], namely video modeling is a 3-minute video that demonstrates the steps of brushing teeth which are played once a day at school by the teacher to children with autism. It is also proven effective in increasing the ability to brush the teeth of autistic children although it is slower than the group using the same method but accompanied by the yoga method. However, the use of video media also needs to pay attention to the sound or audio used, considering that autistic children have characteristics that are sensitive to loud sounds or voices. They will experience changes in behavior when listening to sounds that are too loud [27].

In the development of research, additional methods or effective companions were also found to support the formation of a comfortable situation for autistic children, namely the yoga method. Yoga training is given to help increase flexibility, create awareness, and increase energy circulation throughout the body of autistic children [11]. The literature reviewed shows that yoga improves children's emotional balance, cognitive strength, and attention and reduces negative thought patterns, negative behavior, emotional and physical arousal, anxiety, and reactivity. Thus, participation in yoga programs helps as a protective and curative factor for children with neurodevelopmental disorders or children with autism [28]. In addition, yoga can also reduce the severity of autistic children [29].

Autistic children who undergo training with visual pedagogy (VP) and video modeling (VM) along with yoga training can learn brushing skills more effectively and quickly when compared to children who are only trained with the VP and VM methods. In another study, it was explained that autistic children who underwent training with visual pedagogy (VP) and video modeling (VM) along with yoga training also had better oral hygiene than children who were trained only by the VP and VM methods [11,12].

Several articles explain that the media applied in health promotion has proven to be effective in training autistic children in terms of oral health maintenance behavior. With the trained behavior of maintaining oral health, the oral health status of children with autism also changes for the better, which is confirmed in another study by Zhou et al that an increase in the ability to brush teeth, followed by a decrease in scores on dental health status so that it is appropriate to support the role of media interventions in oral health promotion. Besides media, the use of the method also supports the success of oral health promotion [7]. It is proven from several articles, in children with autism who have had an intervention, experience an increase in their ability to brush their teeth and maintain oral hygiene behavior. This change in health behavior also has an impact on the better dental and oral health status of children with autism.

CONCLUSION

Media and methods are very important in promoting health in children with autism. Some of the media reviewed are visual media, visual media are media that are often used in the education of children with autism. Visual media is an appropriate non-verbal communication method to educate about dental health in children with autism where they have difficulty in social interaction, verbal and non-verbal communication. In addition, there are print media in the form of social stories, electronic or digital media in the form of software applications on the iPad, and audio-visual media in the form of videos. Several oral health promotion methods were also found that were combined with educational therapies for autistic children, namely PECS, tell show do, visual pedagogy, self-modeling, and TEACCH. Visual pedagogy and PECS are the most widely used methods in several articles. The review also found an additional or companion method in promoting dental health in autistic children, namely the yoga method. This method can be applied with a view to creating a comfortable situation so that children with autism can receive the information well.

REFERENCES

1. Center for Disease Control and Prevention. Data & Statistics on Autism Spectrum Disorder [Internet]. 2016. Available from: https://www.cdc.gov/ncbddd/autism/data.html
2. Hariyani N, Soebekti RH, Setyowati D, Bramantoro T, Palupi LS, Oktarina, et al. Factors influencing the severity of dental caries among indonesian children with autism spectrum disorder – A pilot study. Clin Cosmet Investig Dent [Internet]. 2019 [cited 2020 Nov 9];11:227–33. Available from: ncbi.nlm.nih.gov/pmc/articles/PMC6677381/
3. Sengkey MM, Pangemanan DHC, Mintjelungan CN. Status Kebersihan Gigi Dan Mulut Pada Anak Autis Di Kota Manado. e-GIGI [Internet]. 2015;3(2). Available from: https://doi.org/10.35790/eg.3.2.2015.8760
4. Doichinova L, Gateva N, Hristov K. Oral hygiene education of special needs children. Part 1: children with autism spectrum disorder. Biotechnol Biotechnol Equip [Internet]. 2019 Jan 1 [cited 2020 Nov 10];33(1):748–55. Available from: https://www.tandfonline.com/doi/full/10.1080/13102818.2019.1615846
5. Chan DFY, Chan SHY, So HK, Li AM, Ng RCM, Tsang N. Dental health of preschool children with autism spectrum disorder in Hong Kong. Hong Kong J Paediatr. 2014;19(3):161–8.
6. Radovic I, Juloski J, Josic U, Beloica M, Kosanovic D. Oral health difficulties in children and adolescents with autism spectrum disorder: Parental perception. Srp Arh Celok Lek. 2018;146(11–12):624–8.
7. Notoatmodjo S. Promosi Kesehatan dan Perilaku Kesehatan. Jakarta: Rineke Cipta; 2012.
8. Pratiwi DA, Yuniar N, Erawan PEM. Pengaruh Penyuluhan Metode Permainan Edukatif Dan Metode Ceramah Terhadap Pengetahuan, Sikap Dan Tindakan Tentang Pencegahan Penyakit Diare Pada Murid Sd Di Kecamatan Poasia Kota Kendari Tahun 2015. 2015; Available from: http://ojs.uho.ac.id/index.php/JIMKESMAS/article/view/664
9. Al-Batayneh OB, Nazer TS, Khader YS, Owais AI. Effectiveness of a tooth-brushing programme using the picture exchange communication system (PECS) on gingival health of children with autism spectrum disorders. Eur Arch Paediatr Dent [Internet]. 2020;21(2):277–83. Available from: https://doi.org/10.1007/s40368-019-00485-x
10. Zhou N, Wong HM, McGrath C. Efficacy of Social Story Intervention in Training Toothbrushing Skills Among Special-Care Children With and Without Autism. Autism Res [Internet]. 2020;13(4):666–74. Available from: https://doi.org/10.1002/aur.2256
11. Eswari R, Prathima GS, Sanguida A, Ramanathan M, Bhavanani AB, Harikrishnan E. Integrated yoga therapy for teaching toothbrushing skills to children with autism spectrum disorder: A qualitative study of parents' perceptions. Yoga Mimamsa [Internet]. 2019 [cited 2020 Nov 16];51(2):43. Available from: http://www.ym-kdham.in/article.asp?issn=0044-0507;year=2019;volume=51;issue=2;spage=43;epage=47;aulast=Eswari
12. Eswari R, Prathima GS, Sanguida A, Ramanathan M, Harikrishnan E, Ezhumalai G. Yoga therapy as an adjunct to traditional tooth brushing training methods in children with autism spectrum disorder. Spec Care Dent [Internet]. 2019

Nov 1 [cited 2020 Nov 9];39(6):551–6. Available from: https://doi.org/10.1111/scd.12422
13. Smutkeeree A, Khrautieo T, Thamseupsilp S, Srimaneekarn N, Rirattanapong P, Wanpen W. The effectiveness of visual pedagogy for toothbrushing in children with autism spectrum disorder. J Int Soc Prev Community Dent [Internet]. 2020 [cited 2020 Nov 16];10(4):415–23. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7523928/
14. 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 [Internet]. 2020 [cited 2020 Nov 9]; Available from: https://onlinelibrary.wiley.com/doi/epdf/10.1111/ipd.12688#:~:text=Visual pedagogy (VP) is a,VP when applied to dentistry.
15. Lopez Cazaux S, Lefer G, Rouches A, Bourdon P. Toothbrushing training programme using an iPad® for children and adolescents with autism. Eur Arch Paediatr Dent [Internet]. 2019 Jun 1 [cited 2020 Nov 16];20(3):277–84. Available from: http://dx.doi.org/10.1007/s40368-018-0396-y
16. Cahyani LA, Chamidah AN. EFEKTIVITAS PEMBELAJARAN BINA DIRI BERDASARKAN METODE TEACCH TERHADAP PENINGKATAN KEMAMPUAN MENGGOSOK GIGI SISWA AUTIS. JPK (Jurnal Pendidik Khusus) [Internet]. 2017;Vol 13(1). Available from: https://doi.org/10.21831/jpk.v13i1.27499
17. Kusumasari AP, Allenidekania A, Syahreni E. Increasing the Ability of Children with Autism in Performing Oral Hygiene through Photographs: A Single Subject Study in Indonesia. Makara J Heal Res [Internet]. 2016;19(3):104–10. Available from: 10.7454/msk.v19i3.5562
18. AbdAllah EA, Metwalli NE, Badran AS. Effectiveness of a one year oral health educational and preventive program in improving oral health knowledge and oral hygiene practices of a group of Autistic Egyptian children and their caregivers. Futur Dent J [Internet]. 2018;4(1):23–9. Available from: https://doi.org/10.1016/j.fdj.2018.02.001
19. Nameeda KS, Anagha S, Fathimath N, Richa L, Keshav B, Priya N. Effectiveness of Picture Exchange Communication System (PECS) on dental plaque and oral health of children with autism. 2020;07(10):3351–7. Available from: https://asnanportal.com/images/Tarik_Nazers_Thesis.pdf
20. Futuhat N, Rusdiyani, M.Pd DHI, Pratama, M.Pd TY. Penggunaan Metode Pecs (Picture Exchange Communication System) Untuk Meningkatkan Kemampuan Komunikasi Anak Autis Di Skh Negeri 01 Kota Serang. UNIK (Jurnal Ilm Pendidik Luar Biasa) [Internet]. 2018;3(2). Available from: https://jurnal.untirta.ac.id/index.php/UNIK/article/view/5307
21. Heryati E, Ratnengsih E. Penggunaan Metode PECS (Picture Exchange Communication System) Untuk Meningkatkan Kemampuan Komunikasi Anak Autis. Pedagogia [Internet]. 2017;15(1):30. Available from: https://doi.org/10.17509/pedagogia.v15i1.6558
22. Melati F, Indriyanti R, Setiawan AS. Effectiveness of Applied Behavior Analysis (ABA) with regard to tooth brushing in autistic children. Dent J (Majalah Kedokt Gigi) [Internet]. 2019 [cited 2020 Nov 16];52(3):117. Available from: http://e-journal.unair.ac.id/index.php/MKG
23. Balian A, Cirio S, Salerno C, Wolf TG, Campus G, Cagetti MG. Is visual pedagogy effective in improving cooperation towards oral hygiene and dental care in children with autism spectrum disorder? A systematic review and meta-analysis. Int J Environ Res Public Health [Internet]. 2021;18(2):1–22. Available from: https://www.mdpi.com/1660-4601/18/2/789
24. Farné R. Pedagogia Visuale/Visual Pedagogy. Proceedings [Internet]. 2017;1(10):872. Available from: https://www.mdpi.com/2504-3900/1/9/872
25. Marion IW, Nelson TM, Sheller B, McKinney CM, Scott JAM. Dental stories for children with autism. Spec Care Dent [Internet]. 2016;36(4):181–6. Available from: https://doi.org/10.1111/scd.12167
26. Lefer G, Rouches A, Bourdon P, Lopez Cazaux S. Training children with autism spectrum disorder to undergo oral assessment using a digital iPad ® application. Eur Arch Paediatr Dent. 2019;20(2):113–21.
27. Barry S, O'Sullivan EA, Toumba KJ. Barriers to dental care for children with autism spectrum disorder. Eur Arch Paediatr Dent [Internet]. 2014;15(2):127–34. Available from: https://link.springer.com/article/10.1007%2Fs40368-013-0075-y
28. Artchoudane S, Bhavanani A, Ramanathan M, Mariangela A. Yoga as a therapeutic tool in autism: A detailed review. Yoga Mimamsa [Internet]. 2019;51(1):3. Available from: https://www.ym-kdham.in/article.asp?issn=0044-0507;year=2019;volume=51;issue=1;spage=3;epage=16;aulast=Artchoudane
29. Sotoodeh MS, Arabameri E, Panahibakhsh M, Kheiroddin F, Mirdoozandeh H, Ghanizadeh A. Effectiveness of yoga training program on the severity of autism. Complement Ther Clin Pract [Internet]. 2017;28(May):47–53. Available from: https://doi.org/10.1016/j.ctcp.2017.05.001