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Review paper

Nail Biting among Children: Paediatric Onychophagia

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ABSTRACT

In psychiatry, psychology, medicine, and dentistry, nail biting (NB) is a frequent yet unsolvable condition. While it may appear that NB is a simple behaviour that can be easily stopped, most children having NB have previously tried and failed. Others, such as siblings and parents, are frustrated as a result of the failed endeavour. The purpose of this review is to give an overview of NB prevalence, consequences, counselling services, and management. Overall, the examined existing literature reveal that psychiatric disorders and other stereotypic behaviours are present in more than 80% of clinical samples of children with NB, and maximum of the parents had psychiatric illnesses, primarily sadness. However, treating NB is not as straightforward as it may look. The management of NB is significantly more complicated than focusing just on its abolition. It's impossible to predict nail-biting without considering its co-morbidities, triggers, and consequences. Children with NB, their family members, siblings, and instructors, according to the reviewed study, should be educated what to do and what not to do about the illness. Sentencing does not work. Furthermore, evidence-based behavioral and pharmacologic therapy procedures must be made available through clinical randomized controlled trials. Nail-biting and lip biting habits develop as a consequence of stress management among children. Such habits help cope with emotional and physical stresses. As a result, this study is critical in raising awareness about such oral habits and the necessary interventions to effectively stop them. This provides a holistic approach to endodontic care and helps prevent future debilitating problems to the oral cavity and the associated structures.

1. Introduction

Oral habits are most typically formed during the infantile age. Oral habits have a natural beginning and termination. Thumb sucking, nail-biting, lip biting, and mouth breathing are some of the most prevalent oral behaviors (Scaglioni et al. 2018). Habits are actions that are performed automatically and repeat-

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-edly. Emotional pacifiers are used to create oral habits in infants and toddlers. Oral habits can stay the same throughout childhood or alter over time to cope with different emotional pressures, such as thumb sucking or nail-biting.

Nail-biting is one of the most common oral habits. Onychophagia is another name for this condition. It usually starts around the age of 3-4 years and can last throughout adolescence. It typically starts around the age of 3-4 years and can last throughout adolescence. Nail-biting can develop as a modified oral habit if thumb sucking begins later in childhood. Another oral habit seen in infants as a pacifier to cope with an increasingly stressful existence is lip biting (Abarca-Gómez et al., 2017; Baghchechi et al., 2021).

Nail-biting is most common in children aged 7 to 10. Nail biting, like other behaviors, causes emotional distress in youngsters. If oral habits are not broken, they are known to create orthodontic problems later in life. bacterial infection and alveolar damage, intestinal infections (Abarca-Gómez et al., 2017), malocclusion, and attrition of the anterior teeth are some of the effects of nail-biting. Nail-biting can also create a change in the appearance of the nails (Amin, 2022). Changes in the oral enterobacteria can also be mediated by nail-biting (Amin, 2017a).

Temporomandibular pain and dysfunction, as well as the exhaustion of the masticatory muscles, are more immediate consequences of nail-biting (Williams et al., 2007). It is suggested that you control your habit and eventually discontinue it. There is no sure-fire way to get rid of any of the oral habits. Parents may try to stop their children from biting their nails by force, but this may only be a temporary solution. The long-term benefits of forcing oral habits to stop are negligible. Individuals may experience social and emotional insecurity as a result of it. After consulting with a dentist, a careful and gradual quitting plan must be devised (Odenrick & Brattström, 1985). Chewing gums are an appropriate alternative to nail-biting (Odenrick & Brattström, 1985; Bs et al., 2021a). Most people disregard nail-biting because they are unaware of the root causes or the potential for mental health issues later in life. Nail-biting is a symptom of deeper emotional problems. When compared to girls, males who bite their nails are more likely to be diagnosed with psychological problems (Baydaş et al., 2007). Apart from being an oral habit, nail-biting is also a prevalent behavioral issue. Attention Deficit Hyperactivity Disorder (ADHD) and Tourette syndrome are two psychiatric illnesses that are frequently linked (Ghanizadeh, 2008).

2. Definition

NB refers to the passing of any finger from just a person's lips. "Placing one or more digits in the mouth and nibbling on nails with dentures" is how NB is defined (Yassaei & Aghihi, 2007). Nail-biting is also known as onychophagia. The behaviour of nail biting is usually restricted to nails, and persons who have it have no preference for any of their fingers. Both children and adults have been seen to have this behavioural disorder (Silva et al., 2019).

3. Causes

Both physiological and environmental factors play a role in the development and maintenance of repeated behaviours. Repetitive actions in neonates have been discovered to be a practically universal phenomenon that follows a particular developmental pattern (Dufrene et al., 2008).

3.1 Anxiety and Stress

When a child is worried, anxious, or stressed, he or she may bite his or her nails for temporary relief.

3.2 Frustration, Impatience, and Boredom

When a child is bored or impatient, he or she bites their nails to keep themselves engaged.

3.3 Concentration

The child may be distracted and unaware that he or she is biting the nail.

3.4 Emotional or Psychological Issues

Nail biting has been linked to mental health issues such Obsessive-Compulsive Disorder, oppositional defiant, attention deficit hyperactivity disorder, Major Depressive Disorder, disorder, separation anxiety disorder, and others (Ghanizadeh, 2008; Amin, 2017b; Shahraki et al., 2012).

3.5 There are **Four Unique Postures** in the process of nail biting;

- The hands are put next to the lips and remain there for a short period of time (up to 30 seconds).
- The front teeth are rapidly touched with the fingertips.
- Thereafter, the fingernails are forced firmly on the biting edge of the teeth during a series of fast, spasmodic bites.

The finger is taken out of the mouth (Sachan & Chaturvedi, 2012).

4. Management

Nail-biting if not controlled can cause attrition and permanent damage to the incisal edges of the anterior teeth and also cause problems to the temporomandibular joint. Lip biting or lip sucking can cause localized trauma, especially to the lower lip. This can rupture minor ducts and cause cyst formation. Excessive biting of the lip over a long duration of time can also be a risk factor for oral cancer. Nail biting is a habit that must be addressed in conjunction with other elements such as co-morbidities, precedence, and the consequences of the conduct. Some studies concluded that children with moderate NB should not be treated (Ghanizadeh, 2008; Scaglioni et al., 2018; Ricotti et al., 2021). Any therapy should be accompanied with education for the afflicted children, as well as their families, siblings, and teachers. In this case, they should be taught what to do and what not to do (Sachan & Chaturvedi, 2012; Shahraki et al., 2012). For example, parents should be mindful that disciplining, threatening, or laughing at children who use NB to draw others' attention may intensify this conduct. Parents may feel responsible for their children's NB behaviors. These emotions must be recognized and addressed. As a result, people must be integrated and trained in the management process (Bates et al., 2018; Sachan & Chaturvedi, 2012).

Many parents have tried coating or covering their children's nails with unpleasant materials, but it has proven futile. Others should not condemn NB-addicted children, since this would simply increase to their difficulties; instead, they should encourage and support them (August et al., 2008; Kansra et al., 2021). It takes time to develop NB behavior; it is a long process. All of these clinical data point to the fact that controlling NB is significantly more difficult than merely preventing it. The treatment isn't as straightforward as it looks. Some of the management strategies are depicetd in Fig. 1.

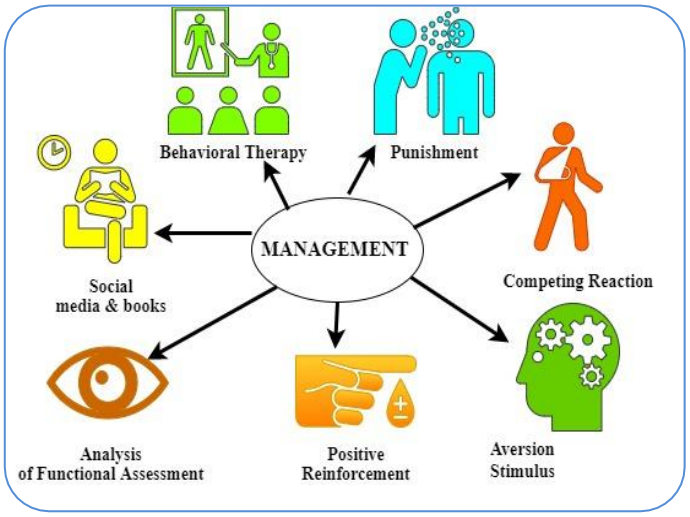

Fig. 1 Management of nail biting

4.1 Behavioral Therapy

- Practice Reversal Training (HRT) is the initial element of nail biting therapy, and it aims to "unlearn" the habit of nail biting and maybe replace it with a more constructive habit.
- Avoid pressurizing the child to stop nail biting (Shahraki et al., 2012; Amin, 2017c).

4.2 Maintaining Proper Nail Hygiene

Nail hygiene is vital, which includes trim and file nails on regular bases. Allowing girls to have professionally trimmed nails, for example, may deter adolescents from chewing their nails due to the favourable visual appeal (Amin, 2022; Ghanizadeh, 2011).

4.3 Analysis of Functional Assessment

According to a cognitive model, nail-biting is a taught behavior. So, our behaviors serve a purpose. By identifying the scenarios in which NB is far more likely to occur, a therapist might form a hypothesis regarding its purpose. This theory is the basis for NB behavioural analysis and treatment planning. Some case reports on the efficacy of functional analysis and NB therapy are available (Teng et al., 2002). Nail-biting is more prevalent among undergraduate students at moments of dullness or displeasure than during periods of reliant or non-contingent interest (Baydaş et al., 2007). Some people get NB due to environmental influences. However, various people's environmental determinants of NB may differ. As a result, NB functional analysis is a way of determining

the nature of precedent and its repercussions (Amin, 2017a; Amin et al., 2022). It works well and maintains its effects over time.

4.4 Punishment

In the therapy of NB, punishment is ineffective. Punishment has no more than a placebo effect (Amin et al., 2022; Sachan & Chaturvedi, 2012).

4.5 Chewing Gum

When other coping methods are unavailable, gum chewing sometimes is an excellent option to control the urge to bite nails in socially uncomfortable settings for an older youngster. This leads to improved oral hygiene (Amin, 2017b). Caries can be prevented by using sorbitol-based gum rather than sugared gum (Sachan & Chaturvedi, 2012).

4.6 Social Media and Books

Books and social media can provide support and strategies. 'What to Do When Bad Habits Take Hold' by Dr. Huebner, is a fantastic resource for addressing with a child's nail-biting. This book provides a unique and interesting look into diagnosing detrimental behaviours, such as nail-biting, in order to develop self-awareness, as well as suggestions and techniques for stopping the habit (Dufrene et al., 2008; Amin, 2022). A complimentary edition of the Bernstein Bears discusses nail-biting in a fun and instructive episode for kids who prefer a more visual approach (Garver et al., 2013; Amin et al., 2022).

4.7 Positive Reinforcement

To avoid nail-biting, parents can use the reward and compensation strategy. Designing a poster plan for children and attaching a star every day the child keeps their nails free of biting damage keeps them motivated since they know there will be a prize after a string of good days (e.g., two weeks at first). Enuresis in children has been effectively treated with a similar approach (Williams et al., 2007; Amin, 2017b; Ly et al., 2008).

4.8 Meditation and Relaxation Exercises

Bringing the behaviour to light can help with self-awareness and the search for socially acceptable methods to deal with stressful situations. To improve confidence, focus, and reduce discomfort, cognitive therapy proposes that clients participate in other activities to divert themselves from repeated impulsions, such as artworks, games, and musical equipment (Amin, 2022; Amin et al., 2022). Furthermore, nail-biting has been linked to the spread of viruses and germs (e.g., touching a communal water fountain spigot and then transferring fingers to the mouth) (Shahraki et al., 2012). The coronavirus that caused the 2019 coronavirus infection was found to last up to three days on surfaces (Odenrick & Brattström, 1985; Amin et al., 2022). As a reason, strong advice to avoid contacting one's face would equally apply to the suggestion to avoid biting one's nails.

4.9 Competing Reaction

When a subject has the temptation to bite his or her nails biting, he or she must perform a competing response. A behavior to prohibit or resist raising upper limbs towards the face or lips, for example, or behavior to stop or prohibit putting fingers into the mouth is used. It has been proven that employing this strategy is much more efficient than not using it (Baydaş et al., 2007; Amin et al., 2022).

4.10 Aversive Stimulus

Unpleasant stimuli is a treatment for NB that involves painting an undesired behavior or an unpleasant material into the individual nails. Although aversive stimulus therapy improves NB, it is not as effective as the competitive response technique (Amin, 2022; Amin et al., 2022; Bs et al., 2021b).

5. Conclusion

The failure of interventions such as wearing fingernails, covering nails with undesirable materials, or continually pressuring children to stop NB appears to be due to a lack of identification of NB as a symptom of a more serious condition. The symptom of nail-biting isn't the only one. It might be a single symptom or a group of symptoms, all of which should be investigated, evaluated, and treated, as well as the reason for NB. Randomized controlled clinical trials are necessary to make evidence-based pharmaceutical methods for the management of nail biting behaviour available.

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