CODEN [USA]: IAJPBB ISSN : 2349-7750

INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES
SJIF Impact Factor: 7.187
http://doi.org/10.5281/zenodo.4316431

Avalable online at: http://www.iajps.com *Research Article*

PREVALENCE OF NAIL-BITING IN CHILDREN AND ITS ASSOCIATION WITH MENTAL HEALTH IN PAKISTAN

Dr Misbah Arshad[1], Dr Iqra Khan[2], Dr Kashif Javed[3]

[1]DHQ Hospital Faisalabad, [2]University Medical and Dental College Faisalabad, [3]DHQ Teaching Hospital Sargodha.

Article Received: October 2020 **Accepted:** November 2020 **Published:** December 2020

Abstract:

Introduction: *The crossing of digit from an individual's mouth known as onychophagia. Nail-biting is not a life-threatening condition. However, the border between its healthy and unhealthy associations still need conclusive establishment.*

Objectives: *To determine the prevalence of nail-biting among children in Pakistan and its association with pediatric mental health.*

Methodology: *Sample size was parents of 171 children between the ages 4-10 selected by convenience sampling. Data collection was conducted with a use of questionnaire in DHQ hospital, Faisalabad. All participants of the study were explained the purpose of the study and written consent was obtained.*

Results: *The overall prevalence of nail-biting in the sample was 39.2%. The prevalence in boys and girls was not statistically significant (P = 0.06). The mean total SDQ score was 15.3 (SD = 5.3) and the mean prosocial score was 6.8 (SD = 2.2). The comparison of the effect of a child's schooling neither showed any significant effect on nail-biting frequency (P = 0.093) nor on SDQ score (P = 0.845).*

Conclusion: *To conclude more research should be done on the importance of nail biting in children, parents and pediatricians alike should pay special attention to children that bite their nails.*

Corresponding author:

Dr Misbah Arshad

DHQ Hospital Faisalabad.

QR code

Please cite this article in press Misbah Arshad et al, ***Prevalence Of Nail-Biting In Children And Its Association With Mental Health In Pakistan.,*** *Indo Am. J. P. Sci, 2020; 07(12).*

INTRODUCTION:

The crossing of digit from an individual's mouth is called nail-biting and is also referred to as onychophagia [1] Nail-biting is not a life-threatening condition. However, the border between its healthy and unhealthy associations still need conclusive establishment. When this habit becomes problematic, they interfere with the person's wellbeing. As onychophagia crosses this line, it is then classified as Impulse Control Disorder.[2] The fundamental factor underlying nail-biting is the difficulty resisting the compulsion to perform certain conduct that causes a degree of liberation .[2] This behavioural aspect has been observed both in adults and in children. It is a common behaviour in both genders.[3] Nail-biting often does not begin until the age of three or four years.[4]

A study from Wroclaw, Poland suggests onychophagia to be present in 46.9% of its citizens (27.7% past nail biters and 19.2% active).[5] Another study from Mangalore, India concludes the habit to be present in 12.7% of its school-going population .[6] Very limited literature and no prevalence estimates regarding onychophagia in children below the age of 10 years could be found from Pakistan.

While onycophagia is more common in adolescents, it has been suggested that the habit actually begins in childhood between the ages of 4-6 years and increases as they reach adolescence. [4,7,8] Since limited literature from Karachi and the other cities is available on nail-biting and its effects on children under the age of 10, it is important to determine the frequency of the said habit among the highlighted population. Due to the fact that the habit of onycophagia starts during the childhood period, the frequency will aid in determining the causes, effects, prevention and treatment of the behavioural aspect in question. By determining factors influencing this habit in a younger population which correlate to behavioural disorders, new therapeutic strategies can be planned targeted specifically towards younger patients.

METHODOLOGY:

The study made use of participants who were parents of 171 children between the ages 4-10, selected by convenience sampling. The sample size was calculated using OpenEpi version 3. [11] Shetty et al. calculated the prevalence of nail-biting to be 12.7% among a community sample of schoolchildren. The parents filled out a questionnaire after an informed consent of their voluntary participation in the study to objectively describe their children's emotional-behavioral problems and their nail-biting habits. Research design was a cross-sectional study. The inclusion criteria was both gender children coming to the outpatient pediatric department with parents, having children with ages between 4-10 year of age, while parents of chronically ill, mentally retarded and children younger than 4 years or older than 10 years of age, and children visiting OPD without parents were excluded.

A structured and standardized questionnaire was used to collect the data. The questionnaire consisted of two parts; the first part asked about the regularity of nail-biting in their children which was recorded in days per week. Parents were asked if there is anyone else in their family with nail-biting comportment. The sociodemographic characteristics of the family were considered such as the parent's employment status, education level and whether their child went to a private school or community school. The second part of the questionnaire consisted of the Strengths and Difficulties (SDQ) questionnaire. The SDQ is a valid and reliable tool that can be used for research. [9, 10] It is comprised of 25 attributes separated into five medical scales: hyperactivity/inattention, peer relationship problems, conduct problems, emotional symptoms and prosocial behaviour. Each clinical scale consists of 5 items. The range of each response is recorded between 0 and 2. Zero corresponds to "not true", 1 and 2 correspond to "partially true" and "certainly true" respectively. All positive items except for prosocial are reverse coded. Each clinical scale can have a score that ranges between 0 and 10. Tallying the scores from each of the 5 scales yields a total difficulties score. Hence, the final score can be anywhere between 0 and 40. Hence, in order to obtain a total score, the prosocial scale is excluded. This study used the original version of SDQ as well as an Urdu translated version was distributed when necessary as Urdu is the local language. Completion of SDQ takes around 10 minutes and its scoring system is easy to comprehend.

Statistical Analysis:

IBM SPSS v.23.0 was used for statistical analysis. Mean and Standard deviation was calculated for all quantitative variables while frequency was calculated for all qualitative variables. Statistical tests including t-test was used to calculate the mean SDQ score. Continuous variables were analyzed using non-parametric tests while Chi-squared analysis was used for categorical data. P-value of less than 0.05 was considered significant for all cases.

RESULTS:

The mean age of the children under observation was 6.4 (SD = 2.1) years old. No difference was observed

in the mean age among boys and girls (t = -0.62, df = 169 P = 0.37). The sample included 58.5% of boys while 41.5% were girls. In the sample, 83.6% of the children were enrolled in a school while 16.4% were not being schooled.

The overall prevalence of nail-biting in the sample was 39.2%. The prevalence in boys and girls was 45% and 31% respectively which was not statistically significant (P = 0.06). 9.4% of parents reported that their child bites his/her nails more than 6 times per day (Table 1). 18.7% of children in the sample bit their nails once or twice per day while the percentage of children biting their nails 3-6 times per day was 11.1%. No significant difference was observed in the frequency of nailbiting per day among girls and boys (P = 0.47). Majority of family members did not have a habit of nailbiting and 1/3rd of the families had atleast 1 child in the habit of nailbiting (Table 2).

Table 1: Frequency of nail biting per day

Nail biting times per day	Frequency	Percentage
0	101	59.1
1-2	35	20.5
3-4	11	6.4
5-6	8	4.7
>6	16	9.4

Table 2: Prevalence of nail biting habit in other family members

Family members	Frequency	percentage
1 member	53	31
More than 1 member	6	3.5
None	112	65.5

The mean total SDQ score was 15.3 (SD = 5.3) which was slightly higher than the normal expected value among children aged between 4-10. The mean prosocial score was 6.8 (SD = 2.2). 45.1% of children had a total SDQ score of ≥ 17 which fell in the "high" category. However, no significant difference was observed in the total SDQ score of children who bit their nails with the children who did not (P = 0.9).

Table 3: Level of education of parents

Level of Education	Frequency		Percentage	
	Mother	Father	Mother	Father
Uneducated	81	71	47.4	41.5
Primary education	72	76	42.1	44.4
Secondary education	8	13	4.7	7.6
Undergraduate	3	7	1.8	4.1
Graduate	7	4	4.1	2.3
Total	**171**	**171**	**100**	**100**

Table 4: Effect of parent's education on nailbiting and SDQ score

		significance
Mother's education	Nail-biting Frequency	0.028
	Nail-biting per day	0.045
	Nail-biting in family	0.170
	SDQ status	0.057
Father's education	Nail-biting Frequency	0.366
	Nail-biting per day	0.414
	Nail-biting in family	0.032
	SDQ status	0.032

DISCUSSION:

There was no difference in the mean age between boys and girls, and there was a lower prevalence of nail-biting in girls compared to boys however, not statistically significant. The present study supports the findings of previous studies that the prevalence of parent-reported NB is not gender-associated.[12]

The mean total SDQ score was higher than expected for the age group of 4-10. The mother's education had a significant impact on the child's nail-biting frequency, and if a father was more educated there was a decreased number of children nail-biting in the family giving a significant difference in the SDQ scores. A mother's employment status also had an effect on the nail-biting frequency.

By biting their nails, children can alleviate feelings of stress, anxiety, loneliness and lack of affection and safety.[12] However, the association between NB and anxiety has remained controversial.[12, 13] Furthermore, possible cause and effect of anxiety and NB have not yet been reported. Moreover, many psychiatric disorders feature NB as a common concurrent problem.[14,16] The presence of such conditions might account for the increased presence of emotional issues in children who bite their nails.

In conclusion, nail-biting is a very common, age-dependent, but not gender-related behavior in school-going children. NB is associated with lower prosocial skills in the community sample of children.

REFERENCES:

1. Massler, M., & Malone, A. (1950). Nailbiting—A review. J Pediatr., *36;*4: 523-531. Available from: doi: 10.1016/s0022-3476(50)80299-8
2. Siddiqui EU, Naeem SS, Naqvi H, Ahmed B. Prevalence of body-focused repetitive behaviors in three large medical colleges of Karachi: a cross-sectional study. BMC Res Notes. 2012 1;5:614. Available from: doi: 10.1186/1756-0500-5-614.
3. Ghanizadeh A, Shekoohi H. Prevalence of nail biting and its association with mental health in a community sample of children. BMC Res Notes. 2011;4:116. Available from: doi: 10.1186/1756-0500-4-116.
4. Wechsler D. The Incidence and Significance of Fingernail Biting in Children. Psychoanal Rev [Internet]. 1931 [cited 6 February 2020];18(2):201-209. Available from: https://www.pep-web.org/document.php?id=psar.018.0201a
5. Pacan P, Grzesiak M, Reich A, Kantorska-Janiec M, Szepietowski JC. Onychophagia and onychotillomania: prevalence, clinical picture and comorbidities. Acta Derm Venereol. 2014 ;94(1):67-71. Available from: doi: 10.2340/00015555-1616.
6. Shetty SR, Munshi AK. Oral habits in children--a prevalence study. J Indian Soc Pedod Prev Dent. 1998;16(2):61-6.
7. Ballinger BR. The prevalence of nail-biting in normal and abnormal populations. Br J Psychiatry. 1970t;117(539):445-6. Available from: doi: 10.1192/bjp.117.539.445.
8. BARLTROP, D. The Prevalence of Pica. *ARCH PEDIAT ADOL MED*. 1966; 112(2):116. Available from: doi: 10.1001/archpedi.1966.02090110060004
9. Goodman R, Ford T, Simmons H, Gatward R, Meltzer H. Using the strengths and difficulties questionnaire (SDQ) to screen for child psychiatric disorders in a community sample. Br J Psychiatry. 2000;177:534-9. Available from: doi: 10.1192/bjp.177.6.534.
10. Stone LL, Janssens JM, Vermulst AA, Van Der Maten M, Engels RC, Otten R. The strengths and difficulties questionnaire: psychometric properties of the parent and teacher version in children aged 4-7. BMC Psychol. 2015;3(1):4. Available from: doi: 10.1186/s40359-015-0061-8.
11. Sullivan KM, Dean A, Soe MM. OpenEpi: a web-based epidemiologic and statistical calculator for public health. Public Health Rep. 2009;124(3):471-4. Available from: doi: 10.1177/003335490912400320.
12. Tanaka OM, Vitral RW, Tanaka GY, Guerrero AP, Camargo ES. Nailbiting, or onychophagia: a special habit. Am J Orthod Dentofacial Orthop. 2008;134(2):305-8. Available from: doi: 10.1016/j.ajodo.2006.06.023.