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Oral Hygiene Instructions and Shortcomings in Child Laborers

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Objectives Child labor is an important phenomenon affecting global health. However, studies concerning the oral and dental health of child laborers are limited. The present study aimed to assess the effectiveness of oral hygiene instructions in a group of child laborers under the protection of a charity.
Method In this cross-sectional interventional study, the sociodemographic information and the Oral Hygiene Index-Simplified (OHI-S) scores of a group of working children were collected. Oral hygiene tools were provided for the children, and proper instructions were given to them. After three months, the plaque index and the reasons for its non-reduction were gathered. Descriptive indices were calculated for data presentation.
Results A total of 79 child laborers (mean age, 11.8±1.29 years), including 30 females and 49 males, were evaluated in this study. Based on the results, 51 (64.6%) children had used a toothbrush at least once before the study. Three months after giving the oral health instructions and providing the oral hygiene tools, 12 children were removed from the study due to a lack of follow-up. Of the remaining 67 children, 34 had brushed their teeth at least once (64.7%) or twice (35.2%) a day. The OHI-S score reduction was statistically significant (P=0.013).
Conclusion According to the results, instructing working children on oral health and providing them with proper oral hygiene tools, such as toothbrush, toothpaste, and dental floss, could be effective in improving their oral health and could enhance their cooperation significantly.
Keywords Child labor; Oral hygiene; Toothbrushing

Introduction

Child labor is defined as any type of work that may harm children's physical and mental development and deprive them of their childhood, education, and dignity. The age of 18 years is considered the minimum age for hazardous work. [1] Nonetheless, engagement of children and adolescents in work that does not negatively affect their health and development and does not interfere with their schooling is accepted as positive. [2] Despite many attempts to terminate this social problem, child labor remains a common issue, especially in developing countries. [3] The association between child labor and adverse health outcomes, such as infectious diseases, skin diseases, malnutrition, and mental or behavioral disorders, has been established in the literature. [4, 5]

Oral health affects an individual's systemic well-being and quality of life and plays a significant role in their overall health. [6, 7] Dental caries and periodontal diseases are the most common oral problems caused by dental plaque. They are largely preventable by using daily oral hygiene measures, including tooth brushing and dental flossing. Overall, giving oral hygiene instructions and motivating individuals can positively affect their oral health habits. [6] Working children face many health shortcomings and require special attention concerning their oral health care, as their oral health is commonly neglected. Information about the oral health and hygiene of these children can help governments and organizations devise better health plans. [3, 4, 6] With this background in mind, the present study aimed to evaluate the outcomes of providing oral hygiene instructions and dental plaque control measures to a group of working children under the protection of a charity.

Methods and Materials

This study was conducted according to the Declaration of Helsinki [8] and approved by the Ethics Committee of Shahid Beheshti University of Medical Sciences (IR.SBMU.DCR.REC.1398.142). The research process was explained to the children and their parents or guardians. The participants were enrolled in the study after obtaining signed informed consent forms from the parents or guardians and verbal consent from the children themselves. The sociodemographic data were collected in the first visit. The Oral Hygiene Index-Simplified (OHI-S) [9] was applied using dental mirrors and dental explorers under sufficient light. A package, containing a dental brush, a dentifrice, and dental floss, was then offered to children. Each child was instructed on how to use the tools and was motivated to follow dental hygiene instructions in a 20-minute individual conversation with a practitioner. The instructions included brushing the teeth twice a day and flossing once daily. [10] Three months later, the frequency of tooth brushing, dental flossing, and OHI-S scores were recorded. It should be noted that a single trained examiner performed all the examinations.

Statistical analysis

Descriptive indices were measured for data presentation. Wilcoxon signed-rank test and logistic regression model were used for hypothesis testing and assessment of possible correlations between variables. The statistical significance level was set at 0.05, and all analyses were performed in SPSS Version 20.

Results

In this study, 79 child laborers, including 30 females and 49 males in the age range of 9-16 years (mean age, 11.8±1.9 years), were enrolled (Figure 1). The majority of children were Afghans (63.3%), while the others were Iranians. Nearly 37.97% of the children worked at home. The participants' education distribution is presented in Figure 2.

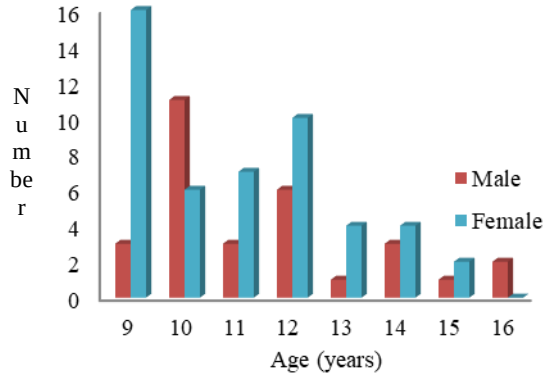

Figure 1: Age and sex distribution of participants in the study

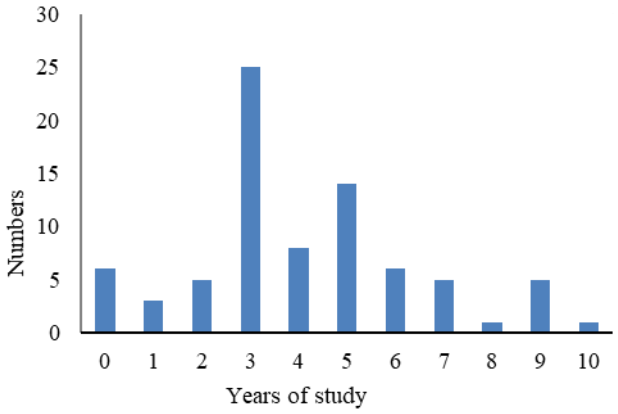

Figure 2: Education distribution of participants in the study

Considering the children's familiarity with the oral hygiene tools, 64.6% of them had at least one toothbrush, and 13.9% had at least one dental floss. Three months after the oral hygiene instructions, 67 children returned for the second visit, 34 (50.74%) of whom still kept and used their toothbrushes, 12 used them twice a day, and 22 used them once a day. On the other hand, 11 (16.41%) children did not use their toothbrushes for different reasons, such as their inability to take the toothbrush to work, being tired, use of the toothbrush by other family members, being exposed to insects, or use of the toothbrush for other purposes, such as cleaning the household appliances. Overall, 21 (31.34%) children lost their toothbrushes. One of the children tried to brush his teeth with his finger after losing the toothbrush, and another purchased a new toothbrush with his wage. About 50.7% of children brushed their teeth once (64.7%) or twice (35.2%) daily. Almost none of the participants used dental floss, and they forgot how to use it.

The debris index and the total OHI-S scores improved significantly after three months (P=0.024 and 0.013, respectively); however, the calculus index did not change (Table 1). Based on the logistic regression model, there was no significant correlation between the toothbrushing habit and age (P=0.12). Although girls kept their toothbrushes more than boys, the difference was not significant (P=0.88).

Table 1- The Oral Hygiene Index-Simplified (OHI-S) scores of child laborers before and after oral hygiene instructions

Plaque index	Mean		Standard deviation		P-value
	Before	After	Before	After	
Debris index	0.876	0.716	0.614	0.774	0.024*
Calculus index	0.248	0.250	0.493	0.467	0.715
OHI-S	1.137	0.956	0.987	1.153	0.013*

*Means statistically significant

Discussion

Despite increasing attempts to end child labor around the world, neither has child labor been eliminated, nor has it become safer. Child labor can negatively affect the physiopsychological health of children. [4] Oral health is also neglected in lower socioeconomic groups, such as child laborers, which may be related to the long hours of work in an unhealthy environment. [11] It has been shown that oral hygiene instructions and accessibility of oral hygiene tools, such as toothbrushes and toothpaste, can help children with plaque control. [12, 13]

In the present study, 35.4%, 36.7%, and 86.1% of children never owned a toothbrush, toothpaste, or dental floss, respectively before participation in this study. The oral hygiene instructions were given to the children, and a toothbrush, fluoride toothpaste, and dental floss were provided for them. On the second visit, 50.74% of children still used their toothbrushes (64.70% once a day and 35.29% twice). Eleven children did not use their toothbrushes because of tiredness, lack of time, or inability to use them in the workplace. Besides, 21 children had lost their toothbrushes. Surprisingly, a child tried to brush his teeth with his fingers after losing the toothbrush, and another child bought a new toothbrush with his wage. These findings suggest that oral hygiene instructions and familiarity with oral hygiene tools improved the children's oral hygiene practice. In this regard, Pudentiana et al. [14] found a significant relationship between oral health knowledge and oral hygiene index in primary school children. Moreover, Gangwar et al. [11] showed that 81.5% of child laborers brushed their teeth with a toothbrush and toothpaste once a day.

In the present study, children generally paid less attention to flossing, and almost all of them had forgotten how to floss. In the second visit, they were again instructed on how

to floss correctly. Although plaque removal from interdental surfaces is highly effective in gingival disease control and prevention, even the cooperation of adults is low. Due to children's greater limitations in hand mobility, they are less desired to use dental floss. It seems that flossing holders may be beneficial for helping and encouraging children to floss. [15] In this regard, Mattos-Silveira et al. [16] reported a positive association between daily flossing negligence and lack of previous instructions, laziness, and lack of agility as other associated factors; they suggested encouraging children to floss. [15]

In this study, the debris index was significantly reduced after oral hygiene instructions; however, the calculus index did not differ significantly. Based on the results, the OHI-S score decreased significantly in the second visit. This finding indicates that children, especially working children, need oral hygiene education and must be provided with oral hygiene tools; therefore, access to oral hygiene tools and instructions can motivate them to follow oral hygiene care. In this regard, in a study by Gangwar et al. [11], the mean score of OHI-S was 2.15±0.93 among child laborers, which was significantly higher than that of school children. The possible reasons for the poor oral hygiene of child laborer were brushing the teeth only once a day, lack of mouth rinsing, chewing betel quid, and smoking. [11]

Conclusion

The current study showed that oral hygiene instructions and access to oral hygiene tools, such as toothbrushes, could improve oral hygiene in child laborers. Overall, these children, as community members, need to pay more attention to their oral hygiene and health. However, health research, especially oral health assessments, is limited in child labor, and further investigations and practices are vital.

Acknowledgments

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Conflict of Interest

No Conflict of Interest Declared ■

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