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Personal Hygiene Habits: Child-School-Family Relationship

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Abstract

Personal hygiene is a fundamental way of protecting oneself from infectious diseases. Hand hygiene, which plays a major role in transmission, is especially crucial in this respect. Schoolage children, who have immature immune systems, are more vulnerable to infections. Moreover, their low level of hygiene awareness makes schools conducive to the spread of infectious diseases and poses a serious public health challenge. One of the essential steps that can be taken to prevent and reduce the incidence of infectious diseases is to ensure hygiene standards in schools as well as hygiene education. Many studies have reported positive outcomes of hygiene education given to both students and academic-administrative staff. In our country, since the early years of the Republic, health services in schools have been implemented and regulated in this context. Besides this education and regulations, it is essential to provide children with an environment where they can practice these skills at school. Nowadays, it is acknowledged that efforts are made to ensure and maintain hygiene standards in schools. However, it is also recognized that there are gaps in these efforts, and it is necessary to increase the inspections of authorized units to address these shortcomings. During the recent COVID-19 pandemic period, efforts in this context continued to grow and the awareness and attitudes of school administrations towards hygiene practices were positively influenced.

Keywords: COVID-19, Personal hygiene, Hygiene in schools, Children



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Introduction

All cleaning measures and practices taken to protect against the environments that may be detrimental to health are termed as "hygiene". Hygiene can be classified under various headings such as food hygiene, work hygiene, environmental hygiene, school hygiene, surface hygiene and personal hygiene, depending on the type of application. Personal hygiene can be described as all cleaning practices that involve skin, hair, foot, nail and hand cleaning and care. Personal hygiene has a significant role in the prevention of infectious diseases. Hygiene of hands, which have high contact with the environment, is one of the foremost personal hygiene practices (1,2,3).

Hands are a significant factor in the transmission of infectious diseases, especially for school-age children (4). School is one of the communal living spaces. Therefore, hygiene in public areas such as schools is as crucial as hand hygiene in the dissemination of infectious diseases. When the health reports obtained in Turkey are analyzed, it is observed that the most prevalent diseases among children in the basic education age group are infection-related diseases. The World Health Organization (WHO) states that providing individuals with the habit of cleanliness and hygiene is effective in preventing diseases such as diarrhea, typhoid, dysentery, and Hepatitis A and reducing mortality rates. Studies also indicate that the frequency of infection and hygiene habits are related (5,6,7). To establish a healthier society, it is one of the most essential practices to convey health information to children in the right way and to enable them to adopt the right behaviors. As a result of the combination of hygiene information acquired from the family since childhood and the education given at school, aware individuals will be raised and this will lead to a healthy society. It is easier for personal hygiene habits acquired especially at a young age to become lifelong behaviors. The education to be provided on this topic at primary school age is very important. The importance of these trainings has once again emerged during the COVID-19 pandemic. In this study, it was aimed to reveal the roles of school hygiene and personal hygiene in protecting school-age children against infectious diseases. Additionally, the roles of family, school and public authorities in the acquisition of hygiene habits were discussed and compiled.

Personal Hygiene Habits-Hand Hygiene

Personal Hygiene in Children

Personal hygiene habits are rooted in the family. Although they have received education on this topic from their families, studies on children have shown that their knowledge and skills in both personal and hand hygiene are insufficient. Indeed, in a study conducted by Güler and Kubilay (2004) on 65 primary school students in Sivas province, shortcomings were found in children's general body hygiene practices. It was observed that 15.4% of the students in the study had inadequate hair hygiene, 73.8% had inadequate ear hygiene and 92.3% had inadequate dental hygiene. Moreover, it was stated that 67.7% of the students had dirty hands



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and 21.5% had dirty and long nails (8). In another study conducted to determine the personal hygiene status of primary school students in an urban area in western Turkey, it was found that 27.7% of the students had inadequate personal hygiene. Furthermore, it was found that the number of students with hygiene problems increased as the mother's education level and household income level decreased and the rate of hygiene deficiency was higher in male students than in female students (9). In a study conducted in schools affiliated with the National Directorate of Education in Cankaya District of Ankara province, it was found that students did not have the desired level of knowledge about personal hygiene and had low levels of hand washing skills (10). In a study conducted by Klar et al. (2022) to determine the awareness of primary school children in Germany about hand hygiene and related infectious diseases, it was revealed that hand hygiene after going to the toilet is an important measure for primary school children. However, the importance school children attach to hand hygiene varies according to the purpose of going to the toilet. The study also revealed that although primary school children know the term "bacteria", they generally cannot distinguish between beneficial ("good") and pathogenic ("bad") bacteria (11). The results of studies conducted in Turkey and in the world show that children's knowledge and habits related to personal hygiene are insufficient and this situation is influenced by various parameters such as socioeconomic level and geography. Moreover, it can be said that children do not have the notion that personal hygiene habits are an effective factor in the occurrence and transmission of infectious diseases, and their knowledge and awareness on this issue are inadequate. The transformation of the right acquisitions regarding cleanliness and hygiene into habits is of vital importance for the protection of the health of individuals and thus the society. In this context, it is important that all sectors work together to protect public health (12). Providing individuals with cleanliness and personal hygiene habits should be a part of the health education program in schools. The hygiene gains that school-age children receive from their families should be supported by the education they will receive at schools.

The Importance of Hand Hygiene Education in Children

Although the size of microorganisms is small, their role in human life is just as significant. In addition to pathogenic microorganisms that cause infectious diseases, the existence of beneficial microorganisms that enable us to fulfill our metabolic and physiological functions is also known. A large number of beneficial microorganisms of different species live in different parts of the human body. The benefits of these microorganisms, called microbiota, on human health are quite high (13). Hand microbiota, which has a unique microbial diversity, is divided into two as permanent microbiota and transient microbiota. The permanent microbiota consists of microorganisms such as Propionibacterium, Corynebacterium, coagulase-negative staphylococci and gram-negative bacilli with low pathogenicity that are constantly present in the skin. The transient microbiota consists of microorganisms such as *Escherichia coli*,



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Pseudomonas and gram-negative bacilli acquired after contact with the environment. While microorganisms in the permanent microbiota are generally not causative agents of infection, microorganisms in the temporary flora are known to cause various infections. Hand washing aims to achieve minimal changes in the permanent microbiota and to eliminate the temporary microbiota. Hand hygiene, which is one of the foremost personal hygiene practices, can be achieved by washing hands regularly and in accordance with the technique. Hand hygiene provided in this way prevents the transmission of infectious diseases to a great extent (14,15,16,17).

Schools are conducive environments for the transmission of infectious diseases. Young children with immature immune systems are more susceptible to infectious diseases than adults. Therefore, they are exposed to more diverse infections in schools where they interact with many people. For this reason, it is very important to organize hand hygiene education programs in schools. There are various studies on the effects of hygiene education programs in our country. In the study conducted by Ertürk (2020), it was determined that there was a significant positive relationship between the hygiene and hand washing program applied to primary school 4thgrade students and students' personal hygiene status and student health. The study emphasizes the importance of providing personal hygiene education to students during primary school (18). In a study conducted to evaluate the effectiveness of hand hygiene and nutrition education for primary school students in semi-urban and rural areas in Sanliurfa province, it was found that the pieces of training increased the knowledge and skills of the students. It is thought that factors such as the content of the trainings being compatible with the ages of the students, ensuring active participation of the students in the pieces of training, and the trainings being given by health professionals who are experts in the field contribute to the success of the trainings (19). Yumru and Koç (2021) conducted a study to examine the impact of hand hygiene training using the Role-Play method on children's knowledge and skills. They compared the hand hygiene knowledge and skills of the students before and after the training and found a statistically significant difference (p<.001) and a positive increase in the student's knowledge and skills after the hand washing training. The Role-Play method used in this study offered enjoyable learning to children and was employed as a supportive education method (20). Implementing hand hygiene education in schools is extremely vital for both public health and the national economy as it will reduce the frequency of infectious diseases, decrease treatment costs due to infectious diseases, and lower school absenteeism.

Hygiene in Education Programs

A review of the school-based education programmes reveals a scarcity of achievements concerning health and hygiene matters. It is suggested that curricula should be revised and enhanced on this topic. Indeed, Özkal (2020) analysed the learning outcomes pertaining to cleaning and hygiene in the 2019/2020 preschool, primary, secondary and high school curricula



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in Turkey. The study found that 35 learning outcomes, 17 directly and 18 indirectly, related to cleaning and hygiene were incorporated into the curricula. These learning outcomes were most prevalent in the primary school Life Science course curriculum, followed by high school, secondary school, and preschool curricula, respectively. Based on these findings, it is recommended that rather than short-term pieces of training, learning outcomes concerning cleaning and hygiene should be integrated with the curricula of all formal education institutions starting from preschool. The Health Knowledge and Traffic Culture course, which encompasses these topics, is only offered in the 9th grade of secondary education in Turkey. The presence of merely two outcomes pertaining to cleaning and hygiene in the curriculum of this course suggests that cleaning and hygiene matters are addressed insufficiently and superficially. In this regard, it has been proposed that the Health Knowledge and Traffic Culture course should be delivered at all levels of education starting from primary school in a manner that equips students with skills (12). It is considered that health and hygiene matters should be incorporated in the curriculum to foster students who are aware of hygiene, especially from primary school age. The significance of undertaking necessary studies on this topic is quite evident.

Hygiene in Schools: Control of Hygiene Conditions

A review of the history of school health services in Turkey reveals that the Ministry of National Education and the Ministry of Health have implemented various policies related to the preservation of students' health since the early years of the Republic. With the enactment of Article 3 of the Hıfzısıhha (Hygiene and Sanitation) Law in 1930, efforts to prevent epidemics and infectious diseases and to ensure the safeguarding of school health started to be placed on a legal basis (21). In the 12th National Turkish Medical Congress held in 1951, "hygiene in schools" was the main theme, while in the 5th National Education Council held in 1953, a draft law was prepared to establish a "school hygiene" organization at pre-school and primary school levels. In 1962, the 7th National Education Council decided to train school physicians and nurses. In 1984, the "Health Services Implementation Guide" published by the Department of Health Affairs stipulated the definition and form of services concerning school health in our country. The guide was revised in 1992 (22). Within the framework of school health services, which have been developed with many changes until today, the "School Health Cooperation Protocol" was signed on 25.09.2006; with this protocol, it was indicated that school health services would be conducted jointly by the health centre staff in the immediate vicinity and school teaching and management staff (23). With the protocol signed between the Ministry of Health and the Ministry of National Education for the "White Flag Project" in 2006, it was aimed to motivate formal and non-formal education institutions affiliated to the Ministry of National Education in terms of cleanliness and hygiene, to enhance school health, to increase the quality of life and to raise healthy generations with adequate education. The expired protocol was re-signed and implemented on 10.11.2010 and 05.06.2015. Within the framework



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of this protocol, various parts of schools are inspected for hygiene during the academic year. As a result of the evaluation, "White Flag, White Flag Certificate, Brass Plate" is given to schools that are encouraged and strived to improve school health and score 90 and above out of 100 points according to the evaluation result; approved by the Provincial Health Director and Provincial Director of National Education for three years (24). In the study conducted by Şimşek et al. (2019), in which the characteristics of the schools inspected in the 2017-2018 academic year within the framework of the "White Flag Cooperation Protocol" in Ankara province were assessed, it was found that the hygienic equipment and environmental conditions were enhanced with the increase in the applications of the schools (25). The results of the study indicate that such projects are motivating in terms of improving hygiene conditions in schools.

On the other hand, studies on canteens and canteen products, which are a part of schools and closely related to children's health, have highlighted the importance of hygiene training for employees serving in the canteen and throughout the school. In the studies on the assessment of school canteens conducted in different provinces, it was found that it is essential for employees to receive repeated trainings in certain periods in order to rectify situations that are not suitable in terms of hygiene. Moreover, it has been revealed that there is a need for standardisation of the inspection of school canteens, multisectoral and increased frequency of inspections (26,27). In another study, it was found that the canteens examined according to the "Regulation on Special Hygiene Rules for School Canteens" and the "Circular on Inspection of School Canteens and Hygiene Rules to be Followed" did not fully comply with the criteria determined in terms of physical conditions, food and personnel hygiene. In canteens, it was observed that employees with primary school graduates attach more importance to food hygiene than employees with higher education levels. Based on the hygiene trainings received by the employees, it was found that the food hygiene score of the canteens increased as the number of hygiene trainings increased. This situation showed that the hygiene training received by the personnel working in school canteens is important, not the high level of education (28).

In a study conducted to assess the hygienic use of toilets by primary school students, it was another striking finding that cleaning and consumables were largely lacking in the schools in the sample, and students did not receive any training on hygienic toilet use (29). It is considered that toilet hygiene in schools should be emphasised and both staff and students should be informed about toilet use and hygiene in trainings. As a result, it is observed that there are shortcomings in ensuring hygiene conditions in schools and some of these shortcomings are due to the lack of training of the personnel. When the results of projects such as "White Flag" and "My School is Clean" are analysed, it is observed that they have a motivating feature for enhancing hygiene conditions in schools. It is important to increase the number of such projects and to conduct regular inspections to ensure that the necessary hygiene trainings given to administrators, academic and administrative staff in schools will have a positive effect in terms of improving conditions.



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Hygiene Practices in Schools during COVID-19

During the COVID-19 pandemic, many countries opted to close schools for a while. However, after a certain period of time, schools were reopened by taking various health and safety measures to prevent the outbreak in schools. In our country, schools were closed as of March 2020 and reopened in September 2021. A guide was prepared by the Ministry of National Education on what to do in case of a positive case while continuing face-to-face education in schools (30,31). In addition, the Ministry of National Education prepared a guide titled "Measures to be taken in schools during the COVID-19 pandemic"; Use of masks against the COVID-19 outbreak, washing hands with soap for at least 20 seconds, social distancing rules, 14-day quarantine, use of disinfectants, optional vaccination of young people over the age of 12 and in the risk group, 15 people in classes if that is possible, symptom and fever monitoring, shortening class times if that is possible, questioning student parents about the HES (Life Fits Into Home system helps you safely share your Covid-19 risk status with individuals and institutions) at school entry, Public health measures have been taken including rules such as positive and contact tracing, coordination with provincial/district health directorates, hanging informative posters in schools, obtaining a "Letter of Commitment" from parents not to bring the student to school if a family member or student is diagnosed with COVID-19 or shows symptoms, wearing masks in canteens and sports halls, and maintaining social distance. As part of this process, all schools received information leaflets for parents, teachers and pupils regarding the precautions to be taken and the rules to be observed. These leaflets contained detailed instructions on cleaning and hygiene and how to implement them (32,33).

Furthermore, under the auspices of the "Cooperation Protocol for the Improvement of Hygiene Conditions in Educational Institutions and Prevention of Infection" prepared by the Turkish Standards Institute (TSE) and the Ministry of National Education (MoNE) in accordance with national and international standards, "My School is Clean" certification services commenced in order to enhance the cleaning, hygiene and sanitation conditions in all public/private schools and other institutions in our country and to establish and enforce control measures; "My School is Clean" certification services commenced to facilitate the creation of the necessary infrastructure to effectively combat infectious and epidemic diseases, and this protocol superseded the protocol involving the "White Flag" project (34). This project is a successor of the "White Flag" project. It was devised during the COVID-19 pandemic and is a more advanced and comprehensive project. The main objective is to create safe, pandemic-resistant and hygienic institutions. If no nonconformity is found in the audits conducted after the application, the school receives the "My School is Clean Certificate" (35).

A study that explored the problems encountered by school administrators during the COVID-19 pandemic and the lessons learnt from these problems revealed that hygiene in schools should receive more attention (36). The study that examined the adherence of school administrators to the Ministry of National Education Hygiene Control Guide during the





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COVID-19 pandemic found that teachers and administrators who had received hygiene training had a higher level of adherence to the guide. Moreover, it reported that these adherence levels differed significantly according to the geographical region and settlement unit (city centre, town, district, etc.) where the school was situated (37). In light of these studies, the importance of hygiene training for academic and administrative staff and the need to disseminate this training has emerged anew.

Conclusion

Personal hygiene habits, which play a crucial role in the formation and control of infectious diseases, are established in childhood. Until children start school, families have great responsibilities in the acquisition of hygiene habits, and then schools where educational processes continue. The hygiene education that children receive from their families and the education they receive at school will combine to raise healthy individuals in the future. In this regard, the hygiene knowledge and habits of family members, where education begins, also become important. Therefore, it is thought that experts should organize training for parents or increase existing training. However, even if children have acquired personal hygiene habits through necessary training on hygiene, they cannot implement these habits unless adequate physical conditions are provided. Hence, ensuring and maintaining school hygiene conditions is particularly important. It is necessary to conduct inspections in schools in this regard and to eliminate and sustain the continuity of the lack of cleaning supplies due to economic conditions. One of the causes of hygiene deficiencies in schools is the lack of training of staff on hygiene. Therefore, it is thought that all staff responsible for ensuring hygiene in schools should receive periodic training and audits should ensure that they apply what they have learned. As a result, in the fight against infectious diseases, which have occurred from past to present and will probably occur in the future, it is of great importance that individuals develop personal hygiene awareness from childhood and make it a habit in society. To initiate this awareness, it is essential to instil individuals with the correct cleaning and hygiene habits in formal educational institutions.

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