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Awareness of Food and Hand Hygiene Practice Among Primary School Children During Covid 19

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Abstract

Hygiene is the name given to all activities or measures taken for a healthy life. All the practices to be done and the cleaning measures to be protected from the environments that will harm health are defined as hygiene. Viral respiratory infections pose a particular risk for the urban population. The aim of this study is to determine the habits, behaviors, food and hand hygiene practice awareness in primary school children during the Covid 19 epidemic. The study design was a cross-sectional survey. The study questionnaire was designed based on a review of the literature and expert consultation. The questionnaire included the knowledge about preventing parasite, microbe and viruses through food washing. In this study, it is important that the behaviors of the students who are trained in elementary classes are permanent and long-term. For this reason, it was observed that when these acquired behaviors were followed three months and continuity was achieved, the education offered provided positive behavior change. After the education, the students' food washing practices are shown in the school corridors of the school management, researchers' and teachers' sensitivity on the subject and the posters prepared. The quality of evidence, which can be found in sources related to food washing and acute respiratory infections, is very low. Randomized controlled trials are urgently needed to rigorously investigate the effect of food washing on morbidity and mortality in public traveled, lived, and studied areas.

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Introduction

Hygiene is the name given to all activities or measures taken for a healthy life. All the practices to be done and the cleaning measures to be protected from the environments that will harm health are defined as hygiene. Every person is responsible for their own cleaning. Cleaning practices, which are taught by parents and teachers should be done by the individual after childhood. For example, washing foods before eating should be a habit (1,2,3).

In the side of this topic is not sufficient to clean only when there is visible contamination. For example; washing the face when awakening from sleep, changing the laundry, daily cleaning practices. It is not possible to talk about cleaning without water and soap. In advanced societies, water and soap are the primary materials used in personal cleaning. In addition, bath sponges, fibers, toothbrushes, food and foot cleaning and body cleaning brushes, nail scissors are the first tools that come to mind. These are all personal cleaning tools that should not be shared with others. The most important means of protecting the health of others, especially one's own health, is cleaning. Not only body cleaning, but also keeping everything used and every environment clean is necessary for being clean (4,5).

Food washing habit starts at a young age in a family environment. A child who has not received food-washing training in the family can only receive this training in primary school. A health education campaign has been launched in primary schools by a foundation university health science academics. Within the scope of this social project, regular trainings were held every week in order to gain hygiene and practical food washing training habits in schools. Food washing activity commenced by a foundation university school of health puts food hygiene as effective agent against many communicable diseases especially Covid 19, diarrhea, many upper tract respiratory infections and pandemic (5).

The foundation university is located in Istanbul which is one of the most populous and cosmopolitan city of Turkey with a population of sixteen million. Viral respiratory infections pose a particular risk for the urban population. The reason for this is the high population density in the cities; people is gathering in crowded places like markets, public transport or places of worship more often. Those who live in poor urban neighborhoods, one of the worst forms of irregular settlement, are particularly at risk. In this case, food washing becomes more important. For this reason, all districts where in every each social class of the society resides have been reached (5,6,7).

The research was carried out in the districts where the foundation university is close to the education area and where permission can be obtained from the district's national education directorates. Schools were identified randomly. The study was carried out in the first, second, third, fourth classes and kindergarten of primary schools. In addition, applied training was carried out randomly in kindergartens in the region. There are hopeful results of correct food washing for diminution many kinds of severe communicable diseases such as Covid 19. Access of high level of food washing in primary school of children of poor quarter area is not easy. Therefore, this study was undertaken to improve food washing knowledge and practice among primary school children across health education efforts. This research was conducted in the educational year of 2021–2022.

Material and Methods

The study design was a cross-sectional survey. The survey consisted of a one-time paper and pencil questionnaire to be completed by the students and was conducted in the Bakırköy, Büyükçekmece, Avcılar, Çatalca, Esenyurt, Silivri. Those of the poorest, middle and upper class areas in Istanbul. In 2019-2020 a multistage random cluster sampling method was applied to select the research sample. Firstly, we randomly selected six district and six school. We purposively invited all students from the second to fourth grades to participate in our study; in order to assure the students' literacy level and language ability were adequate to understand and answer the questionnaire.

The study questionnaire was designed based on a review of the literature and expert consultation. The questionnaire included the knowledge about preventing parasite, microbe and viruses through foodwashing (8,9,10).

The structured questionnaire was internally consistent (Cronbach's alpha = 0.95), and the construct validity was demonstrated by the accumulated variance contribution rate of 65.2%. The questionnaires were completed in the classrooms, allowing enough privacy for each students; researcher were present in each class to answer any question asked by the students.

Measure/measurement of knowledge of foodwashing

Five items measured the knowledge of foodwashing. For instance, one item asked "can people be infected with viruses if they don't wash their foods before eating or after using the toilet?" A five-point Likert scale ranging from 1 (totally impossible) to 5 (totally possible) was utilized to measure participants' responses to such knowledge based questions (11).

Measure of Attitudes

Attitude towards foodwashing was measured by three items such as "do you agree you should wash your foods before eating and after using the toilet?" A five-point Likert scale ranging from 1(totally disagree) to 5 (totally agree) was utilized to measure these items. The higher the score, the more positive the attitude towards conscious food washing information (11,12).

Measure of Subjective Norms

The subjective norms were measured by the degree to which individuals were likely to comply with advice from two frequently believed referent individuals: family and teacher. Four pairs of items were included, such as “did your family ever tell you to wash foods before eating and after using the toilet?” followed by “to what extent are you likely to follow your family when they tell you to wash foods before eating and after using the toilet?” The first item on normative belief was measured by 0 (never told) and 1 (told). The second item on motivation to comply was measured by a five-point Likert scale ranging from 1 (totally impossible) to 5 (totally possible). The higher the total score, the more positive the subjective norm one perceived (11,12,13).

Measure of Foodwashing Behavior

The outcome variable is actual behavior since it is still unclear whether behavior intention could lead to actual behavior in the theory of reasoned action. Four questions on foodwashing behavior in daily life were included, such as “do you wash your foods before eating at home?” A five-point Likert scale ranging from 1 (never) to 5 (every time) was utilized to measure these items (14,15,16).

Data Analysis

Socio demografic and descriptive statistics was to find the characteristics of the respondents. Reliability and confirmatory factor analysis of the scale was assessed whether observed variables were adequate indicators of latent variables The association between categorical variables was examined with x^2 test or Fisher’s exact test. Independent t-test or one-way ANOVA was used to determine the group differences in the knowledge score on food washing questionnaire. SPSS version 22.0 (IBM Corporation, Armonk, NY, USA) was used for all statistical analyses. All statistical tests were two-sided, with significance level set as $p < 0.05$.

Ethical consideration

Permission was obtained from the foundation university Social Sciences Ethics Committees before data collection (29072019/14). The regional directorates of the schools were informed with a permission letter obtained from the District Directorate. Informed consent was obtained from parents of the school children, stating clearly the

objectives of the study. Verbal consent was obtained from the school children and they were assured of confidentiality.

Results

Table 1. shows the demographic characteristics of 3462 students. The average age was 8.8 years (SD = 1.1); 52 % of respondents were female. Of the students in the study population, 25,6 % were in class 2, 27,9% in grade 3, and 46,5% in grade 4.

Table 1. Demographic characteristics of the study population (N = 3462)

Demografic Variables		n	(%)
Age	8.81(1.13) (Mean±SD)		
Gender	Male	1663	48
	Female	1799	52
One Child		1231	35.6
Two Child		2231	64.4
Class	2	886	25.6
	3	965	27.9
	4	1611	46.5
Mother‘s education	primary	1589	(45.9)
	secondary	981	(28.3)
	higher	448	(12.9)
	MBA or Phd	444	(12.8)
Father ‘s education	primary	1806	(52.2)
	secondary	913	(26.4)
	higher	245	(7.1)
	MBA or Phd	498	(14.4)

The study was conducted from November to March 2021-2022. 3500 questionnaires were collected face to face, self-administered paper-and-pen format with assistance. The completion rate of the questionnaire was 93.25 % (n=3462/3500: 98,9%) and the estimated time to complete was 15 min. 1663 of them was boy. 1799 of them was girl. When the reasons of the students who did not answer were investigated, a significant portion (5%) were children who migrated from Syria and tried to learn Turkish, while the remaining (1.75%) were psychologically restless and unstable children.

Only 35% of the students were washing foods involving coughing, sneezing, for at least 20 seconds before and after meals. Table 2. shows the operational definitions and descriptive statistics of the following variables.

Table 2. Descriptive statistics for the variables utilized in the questionnaire

Latent Variables		N (%) / Mean±SD	
		n	(%)
Knowledge	Have you heard about microbes and parasites (Yes)	3129	(90.4)
	Do you heard about viruses(Yes)	2991	(86.4)
	Do you know Microbes, parasites, viruses can be prevented (yes)	3132	(90.5)
	Do you know about Covid in China(yes)	471	(13.6)
		Likert scale (1-5) Mean±SD	
	Do you know that you can prevent viruses, parasites, microbes by frequent food washing (1-5)	3.2 (1.31)	
Attitude	Washing foods before eating and after toilet (1–5)	3.2 (1.3)	
	Washing foods after touching animals and soil (1–5)	2.9 (1.2)	
	Washing foods for preventing microbes,parasites, viruses (1–5)	2.3 (1.2)	
Subjective norm	Following family's suggestion to wash foods before meal and after toilet (0–5)	2.5 (1.5)	
	Following family's suggestion to wash foods after touching animals and soil (1–5)	2.0 (1.4)	
	Following teachers' suggestion to wash foods before meal and after toilet (1–5)	2.5 (1.3)	
	Following teachers' suggestion to wash foods after touching animals and soil (1–5)	2.5 (1.4)	

The questionnaire contains three parts: knowledge, attitude, subjective norms. Most of the primary school students (90.4%) had heard of microbes and (86.4%) had heard about viruses, but only 13.6% knew Covid19 has been detected and damaged in China (17,18).

The susceptibility score of without washing foods was 3.2 (SD = 1.3). 46% of the participants knew Covid 19 could be prevented by washing foods frequently. The mean score of the attitudes towards 'washing foods before eating and after toilet' was 2.9 (SD = 1.2); the mean score of the attitude towards 'washing foods after touching animals and soil' was 4.29 (SD = 1.05); and the mean score of 'Washing foods for preventing microbes, parasites, virüses' was 2.3 (SD = 1.2).

When it is questioned whether care is taken to wash the foods before eating or after using the toilet and after touching the animals and soil; It was observed that there was no difference between parents 'influence on students and teachers' influence. The food washing rates of the students were found to be 22.9% frequently and every time.

Discussion and Conclusion

Attitude is one of the key elements that influence food safety and the practice and lessen the recurrence of food-related illnesses (19). A study in Ghana showed that most of street-cooked food handlers had a good attitude toward food safety (20). It means they understood their roles in food safety which was transmitted into attitude because they possibly serve as a vector for infectious pathogens which lead to food contamination. This agrees with studies conducted in Ghana and Haiti (21, 22), but differs from a study done in Malaysia (23), where the majority of street-cooked food handlers had a poor attitude toward food safety. Possibly these could be due to the variances in socio-demographic characteristics, study population, and the study settings. These attitudinal variations could also be due to public reputation preference. Preservation of good sanitary behaviours is one of the goals for any food establishment, thereby its observance is vital to ensure safe meals for consumers (24, 25).

In our study, it is important that the behaviors of the students who are trained in elementary classes are permanent and long-term. For this reason, it was observed that when these acquired behaviors were followed three months and continuity was achieved, the education offered provided positive behavior change.

Several researches have shown that barriers to food safety can vary in different regions which could affect direction of policymaking and stakeholder decisions (26–28). However, the main barrier identified was lack of training as it had 63.1% of total responses. Education and regular training of food service personnel are highly needed for improving food safety knowledge and practices (29). In view of this, structures such as organization of practically and technically oriented courses/programs will be

helpful to equip food vendors and handlers with best food safety practices in the hospitality industry. This suggestion was similarly revealed in (30).

In our study, after the education, the students' food washing practices are shown in the school corridors of the school management, researchers' and teachers' sensitivity on the subject and the posters prepared. In addition, the school administration has placed food-washing posters in every sink in every toilet, which the students visually benefit from. As in the foundation university's campus region, the continuity of academic consultancy practices started in schools has been ensured.

The quality of evidence, which can be found in sources related to food washing and acute respiratory infections, is very low. Randomized controlled trials are urgently needed to rigorously investigate the effect of food washing on morbidity and mortality in public traveled, lived, and studied areas. The media, civil society organizations, youth, students, and health organizations should be actively involved in creating awareness of food safety (31).

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