

Hygiene behaviour in university students in Turkey

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Abstract

Objective: To identify university students' hygiene behaviour using a hygiene behaviour inventory in a Turkish sample.

Methods: The cross-sectional study was conducted with 353 randomly selected university students aged 17-24 years in Kocaeli, Turkey. Data were collected in December 2009 using a socio-demographic form and the Turkish version of the Hygiene Behaviour Inventory-23. SPSS 15 was used for statistical analysis.

Results: The mean score was 3.08 ± 0.94 ; ranging from 1.91 ± 0.85 to 3.77 ± 0.52 . Of the students, 290 (82.2%) always washed their hands when soap was available; 266 (75.4%) had cleaned their toilets three times or more in the preceding month; 260 (73.7%) always washed their hands after touching a pet or some animal; 260 (73.7%) always washed their hand before preparing food; 256 (72.5%) always washed fruits and vegetables before eating them; 227 (64.3%) always covered the seat with paper while using a public toilet; 244 (69.1%) had always cleaned their bathroom at home three times or more in the preceding month; and 183 (51.8%) of the students always washed their hands before eating food with their hands.

Conclusions: Community-based awareness and education plans must initiated to improve regular hygiene practices at the level of university students in Turkey.

Keywords: Hygiene inventory, Hygiene behaviour, Hygiene practices, University students, Healthcare. (JPMA 63: 585; 2013)

Introduction

Hygiene is generally discussed in the context of preventing the transmission of infection.¹ Hygiene behaviour is the regular practices and behaviours associated with the preservation of health and healthy living. Such a behaviour protects individuals against exposure to bacterial and viral infections.^{2,3} Good hygienic behaviour is the most effective way to prevent the spread of communicable disease.⁴ The maintenance of good hygiene is essential for population's health and well-being. Good hygiene can reduce the risk of infection and improve the quality of life. Poor hygiene is a risk to public health. Poor hygiene is one of the important behavioural risk factors contributing to the global burden of diseases.⁵ Good hygiene practices are not well described, and facilities are often inadequate. Only a few studies have empirically examined how hygiene knowledge, hygiene practice, and knowledge about hygiene practice impact quality.^{6,7} Therefore good hygiene behaviour must be acknowledged.⁴

Hygiene behaviour includes general hygiene,

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household hygiene, food-related hygiene, hand hygiene and personal hygiene.⁶ These are primary practices which can reduce the risk and spread of infection. There are safe, effective and cost-effective methods of reducing and preventing the spread of communicable diseases.⁶

The aim of the current study was to examine the hygiene behaviour among university students. The results could then be used by educators as a guide to adopting and promoting appropriate measures to improve the hygiene behaviour of university students.

Subjects and Method

The cross-sectional, anonymous, self-administered survey on a simple random sample was carried out among university students in the state of Kocaeli, Turkey, in December 2009. The study population initially comprised 1306 students from the Engineering Faculty receiving education at a university in the city centre, a computer engineering department, a civil engineering department, and a chemical engineering department. Of the total, 353 (27%) students were selected through simple random sampling.

Following informed consent, the data were collected through a survey. Students were informed about the nature of the study, that completion of the survey was voluntary, and that participation or non-participation

would not affect their course evaluation. The co-investigator, who had no formal affiliation with the students, presented the study, answered any queries, and requested that the students should return the completed survey in the envelope, provided they chose to participate. Willingness to complete and return the survey implied consent.

A questionnaire was developed to obtain information on socio-demographical variables, such as the respondent's age, gender, and in addition to the hygiene inventory (HI23). These scales have been used to identify populations' hygiene behaviour.⁶ The HI23 was developed in response to the lack of a consistent measurement of populations' hygiene behaviours which highlight the phobic practices and significantly increase the burden of caring for an unhygienic person in populations.⁶ Use of this tool assist health professionals to assess the necessary practice populations place on themselves in preventing the spread of healthcare-associated infections. It acts as a platform for discussions about the evidence-based hygiene care of populations.⁷ The original HI23 was developed by Stevenson et al. (2009) in Australian and tested by Altun et al (2010) for validity and reliability in a Turkish population.⁷ The coefficient alpha was 0.79 for the HI23.⁷ This made for a 23-item instrument with

a possible range of 23 to 115, with higher scores indicating higher levels of these practice. In the Australian study,⁶ the mean item score for the HI23 was 2.90 ± 0.42 . In the Turkish study,⁷ the mean item score for the HI23 was 3.10 ± 0.30 . Findings indicate that the HI23 is a valid and reliable tool for measuring hygiene management practices in both Turkish and Australian populations.^{6,7} HI23 comprised 5 sub-scales: general, household, food-related, hand-washing technique, and personal hygiene.⁶ The HI23 scale consist of 23 items assessed in 5-point Likert scale (scored as 1, 2, 2.5, 3, 4) (Tables), with a potential range of 23 to 92, with higher scores indicating more frequent or higher levels of these practices and representing a higher hygiene behaviour.

SPSS 15.0 was used for statistical analysis. The median and the interquartile range were used to describe the sample. For comparison between two groups, t-test were used.

Results

The mean age of the 353 students was 19.70 ± 1.43 years (range: 17-25 years), and 66.6% (n = 235) of the students were female. Responses were collected and collated for all the five sub-scales of HI23 (Tables-1-5).

All the responses were compared along gender lives.

Table-1: The Median score for the General Hygiene.

General hygiene Questions	Score 'never' 1 N(%)	Score '1 to 5' 2 N(%)	Score '6 to 10' 3 N(%)	Score '11 ↑' 4 N(%)		Median	Range
1. On an average day, approximately how many times do you wash your hands?	2 (0.6) Score 'never' (1) N(%)	114 (32.3) Score 'occasionally' (2) N(%)	197(55.8) Score 'usually' (3) N(%)	40 (11.3) Score 'always' (4) N(%)	Score 'unsure' (ie,2.5) N(%)	3 Median	3 Range
2. Upon getting home, do you wash your hands?	6 (1.7)	71 (20.1)	131(37.1)	145 (41.1)		3	3
3. After touching a pet or other animal, do you wash your hands?	5 (1.4)	2 (6.2)	66 (18.7)	260 (73.7)	0 (0)	4	3
4. Before eating food with your hands, do you wash your hands?	3 (0.8)	4 (13.3)	123 (34.8)	183 (51.8)	0 (0)	4	3
5. Before preparing food, do you wash your hands?	1(0.3)	22 (6.2)	61 (17.3)	260 (73.7)	9 (2.5)	4	3
6. If you need to touch your face or body (eg, to scratch) while preparing food, do you wash your hands?	15 (4.2)	131 (37.1)	91 (25.8)	108 (30.6)	8 (2.3)	3	3
7. Do you wash fruit and vegetables before you eat them?	4 (1.1)	24 (6.8)	69 (19.5)	256 (72.5)		4	4
8. When you use a public toilet, do you cover the seat with paper?	11 (3.1)	37 (10.5)	78 (22.1)	227 (64.3)	0 (0)	4	3

Table-2: The Median score for Household Hygiene.

Household hygiene Questions	Score 'never' (1) N(%)	Score 'once' (2) N(%)	Score 'twice' (3) N(%)	Score 'three times or more' (4) N(%)	Score 'unsure' (ie, 2.5). N(%)	Median	Range
9. How often, in the last month, has your bathroom at home been cleaned?	6 (1.7)	28 (7.9)	89 (25.2)	230 (65.2)	(0)	4	3
10. How often, in the last month, has your toilet at home been cleaned?	6 (1.7)	23 (6.5)	58 (16.4)	266 (75.4)		4	3
11. How often, in the last month, has your kitchen at home been cleaned?	2 (0.6)	23 (6.5)	84 (23.8)	244 (69.1)		4	3

Table-3: The Median score for Food-related Hygiene.

Food-related hygiene Questions	Score 'never' (1) N(%)	Score 'occasionally' (2) N(%)	Score 'usually' (3) N(%)	Score 'always' (4) N(%)	Score 'unsure' (ie, 2.5). N(%)	Median	Range
12. After handling raw foods and before handling cooked foods, do you wash your hands?	14 (4.0)	84 (23.8)	133 (37.7)	116 (32.9)	6 (1.7)	3	3
13. After handling raw foods and before handling cooked foods, do you wash the utensils used?	12 (3.4)	65 (18.4)	129 (36.5)	142 (40.2)	5 (1.4)	3	3
14. Do you use separate chopping boards for raw and cooked foods?	51 (14.4)	115 (32.6)	93 (26.3)	80 (22.7)	14 (4.0)	3	3

Table-4: The Median score for Hand Hygiene.

Hand hygiene technique Questions	Score 'never' (1) N(%)	Score 'occasionally' (2) N(%)	Score 'usually' (3) N(%)	Score 'always' (4) N(%)	Score 'unsure' (ie, 2.5). N(%)	Median	Range
15. When warm water is available, do you wash your hands with warm water?	4 (1.1)	63 (17.8)	124 (35.1)	162 (45.9)		3	3
16. After washing your hands, do you dry your hands completely?	3 (0.8)	29 (8.2)	153 (43.3)	168 (47.6)		3	3
17. When soap is available, do you wash your hands with soap?	2 (0.6)	12 (3.4)	49 (13.9)	290 (82.2)		4	3
	Score 'under 5 seconds' (1) N(%)	Score '6 to 10 seconds' (2) N(%)	Score '11 to 20 seconds' (3) N(%)	Score '21 seconds or more' (4) N(%)		Median	Range
18. When you wash your hands, approximately how long do you wash them for?	11 (3.1)	94 (26.6)	191 (54.1)	57 (16.1)		3	3
	Score 'often' (4) N(%)	Score 'sometimes' (3) N(%)	Score 'rarely' (2) N(%)	Score 'never' (1) N(%)		Median	Range
19. Do you use antibacterial gel or wipes to clean your hands?	33 (9.3)	131 (37.1)	124 (35.1)	65 (18.4)		3	3

Table-5: The Median score for Personal Hygiene.

Personal hygiene Questions	Score 'never' (4) N(%)	Score 'rarely' (3) N(%)	Score 'sometimes' (2) N(%)	Score 'often' (1) N(%)	Median	Range
20. Do you wear the same top or shirt two days in a row?	83 (23.5)	133 (37.7)	110 (31.2)	27 (7.6)	2	3
21. Do you wear the same skirt or pants two days in a row?	134 (38.0)	127 (36.0)	80 (22.7)	12 (3.4)	2	3
22. Do you wear the same underclothes two days in a row?	58 (16.4)	138 (39.1)	92 (26.1)	65 (18.4)	2	3
23. Do you go without a wash, shower or bath two days in a row?	73 (20.7)	143 (40.5)	90 (25.5)	47 (13.3)	2	3

Table-6: Gender differences.

	Gender	N	Mean±SD	t	P
General hygiene	Male	118	3.45±0.32	4.013	0.000
	Female	235	3.27±0.42		
Household hygiene	Male	118	3.75±0.41	3.529	0.000
	Female	235	3.52±0.62		
Food-related hygiene	Male	118	2.94±0.61	0.562	0.574
	Female	235	2.89±0.68		
Hand hygiene technique	Male	118	3.21±0.32	1.349	0.178
	Female	235	3.15±0.42		
Personal hygiene	Male	118	2.50±0.65	4.712	0.000
	Female	235	2.13±0.70		
Total	Male	118	3.02±0.33	4.863	0.000
	Female	235	3.45±0.32		

Female hygiene-related behaviour score was lower than the males [$t= 4.863$; $p < 0.001$]. Significant differences also were obtained for 3 subscales: general hygiene [$t= 4.013$; $p < 0.001$], household hygiene [$t= 3.529$; $p < 0.001$] and personal hygiene [$t= 4.712$; $p < 0.001$] (Table-6).

Discussion

The mean item score for the HI23 was 3.08 ± 0.94 , which was higher than that reported by Stevenson et al.⁶ The higher mean HI23 in the Turkish sample could indicate that the Turkish population surveyed was concerned about hygiene. Good hygiene is the most effective measure for interrupting the transmission of micro-organisms which cause infection both in the community and in healthcare settings. Hygiene promotion empowers people to prevent disease.^{8,9} Little is known about hygiene behaviour among Turkish populations despite the fact that hygiene behaviour management is receiving increasing attention regarding its prominent role in healthcare.^{6,10,11} In Altun study¹² the mean item score for the father scale was 2.88 ± 0.33 . The mean item score for the students scale was 3.03 ± 0.32 . There were differences in practice related to the hygiene behaviours between male university students and their fathers ($p > 0.05$). In another Altun study,¹³ the mean item score for the mother scale was 3.55 ± 0.49 . The mean item score for the daughters scale was 3.26 ± 0.42 . The mothers' general hygiene and food-related hygiene behaviours were significantly higher than their daughters ($P < 0.05$). There were differences in practice related to total hygiene behaviours between female students and their mothers ($p > 0.05$).

In terms of hygiene behaviour profiles of students,

items 3,4,5,7,8,9,10,11,17 recorded a median of 4 (range ≤ 3), which was significantly good than items 20,21,22,23, which recorded a median of 2 (range ≤ 3). An important finding was that Australian populations were more likely to focus on items 20,21,22,23 than Turkish students (3.37 ± 0.36 ; median 2; range = 3). Median scores and range for individual items were low. Personal hygiene may be described as the principle of maintaining cleanliness and grooming of the external body. It is in general looking after yourself. Personal hygiene can be controlled by sustaining high standards of personal care and humans have been aware of the importance of hygiene for thousands of years. Maintaining a high level of personal hygiene will help to increase self-esteem and confidence whilst minimising the chances of developing imperfections.

In our study, higher scores came against questions related to Hand Hygiene. These results were similar to those of other studies in Turkey.^{7,10,11}

In our study, median scores and range for Personal Hygiene items were low. This result is not similar to those of Stevenson et al.⁶ studies in Australian populations. We investigated hygiene behaviour in a young age group in December. The weather conditions in the cold mountainous region might have been behind the difference. Though the sample was small, the findings of the study indicate the need for further exploration in Turkish population.

Conclusions

The hygiene behaviour was less than ideal in the study population, indicating the need of proper training and health education through teachers, family members, health educators and media. Health professionals

should also refresh their knowledge on the issue and share it with their patients continuously.

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