

An Assessment of Menstrual and Genital Hygiene Behaviours among Adolescent Females at Gazimağusa, Northern Cyprus

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ABSTRACT

Objective: Inadequate menstrual and genital hygiene behaviours are common and important problems for adolescent health. This study aims to determine menstrual and genital hygiene behaviours and the affecting factors among female students enrolled in high schools located in Gazimağusa, Northern Cyprus.

Methods: This school-based, cross-sectional, and descriptive study was conducted in three high schools in the Gazimağusa town borders in Northern Cyprus with 379 students. Data were collected through the Socio-demographic Form and the Genital Hygiene Behaviours Scale.

Results: The scale mean score was found 79,28±6,80 (min:47 / max: 112). The factors affecting menstrual and genital hygiene behaviours were found to be the type of schools the students were enrolled (X²: 14,771 / P: 0,001), the education level of the mothers (X²: 9,806 / P: 0,020), and the education level of the fathers (X²: 15,879 / P:0,001).

Conclusions: The participants of this study had an above-average level of right genital hygiene behaviours. Genital hygiene behaviours were found to be affected by the type of school, the education level of the mothers, and the education level of the fathers.

Keywords: Adolescents, behaviour, female, hygiene, menstruation

1. INTRODUCTION

Puberty is a key process of human development into adulthood, involving the most rapid physical growth the human undergoes except for prenatal and neonatal growth (1). Therefore, it is necessary to carefully investigate adolescents' reproductive health specific to adolescence and to organize services for these (2). These services become even more important when it is considered that adolescents consist of approximately one-fifth of the world population (1.2 billion) (3, 4). Reproductive health problems that require particular attention include anaemia, dysmenorrhea, urinary tract infections (such as bacterial vaginosis), sexually transmitted diseases (STD) and HIV, unwanted pregnancies, unhealthy miscarriages, birth-related injuries and death, and female genital mutilation (2,5,6). Another important health problem concerning the adolescence period is poor perineal and menstrual hygiene behaviours (1,3,6,7) because it is known that genital hygiene behaviours (GHB) and incorrect and inadequate hygiene practices in women disrupt the vaginal flora and cause many health problems (8).

Besides, the development of menstrual and GHB at a young age through accurate information becomes an important attitude and behaviour for protecting women's health in the long term (9)

Factors that have effects on the formation of menstrual and GHB are reported to be gender perception, cultural norms, taboos, level of access to resources, parent effect, personal preferences, socio-economic factors, and education (1,3,6,10). On the other hand, the beginning of menstruation causes extra difficulty in terms of perineal hygiene for adolescents who tend to accept less support from their parents (3). The most frequently encountered inadequate menstrual and GHB include cleaning the genital area wrongly (from back to front), leaving the genital area moist after cleaning, using nonhygienic clothes in the menstrual period, wearing nylon textile fabric underwear, having a bath and washing hands in inadequate frequency, etc. (11-14). Genito-urinary infections threatening woman's health and becoming a silent epidemic every day are also closely associated

with inadequate genital hygiene practices (15-17). Some girls' trying new practices disrupting the natural flora such as genital sprays, wet wipes, vaginal shower, powder, bath foam, etc. could cause vulvar contact dermatitis (3). When it is considered that practices about genital hygiene are learned at a young age, the identification of risk behaviours among young women is important in terms of taking precautions to improve genital hygiene. In this way, it could be possible to prevent many negative consequences that could emerge in the further life periods (7).

Teaching correct GHB is important in terms of preventing health problems; it also contributes to the early diagnosis and treatment by increasing individual awareness about potential changes (19). Despite this, current studies conducted in different countries of the world indicate that adolescent females have different levels of inadequate menstrual and GHB (12,14,20-25). In fact, in all periods of their life, all women have the right to learn menstrual and GHB and to access the necessary materials that could affect their genito-urinary health. Therefore, although it is not explicitly mentioned, menstrual and GHB are associated with the 3rd, 4th, 5th, 6th, and 8th goals of the Millennium Development Goals (17). In this regard, the GHB of adolescents should be investigated as a women's and children's health right, and support should be provided in light of the knowledge gained. The cultural and socio-economic environment where women live have effects on shaping genital hygiene behaviours (1,3,6,10). Therefore, researchers tried to report the current situation of genital hygiene behaviours in their own society (12,14,20-25). On the other hand, no studies in the literature were found to define genital hygiene behaviours of adolescent females in Northern Cyprus. This study aims to contribute to the literature about genital hygiene behaviours of adolescent females in Northern Cyprus.

Research Questions

- What are the genital hygiene behaviours of female students enrolled in schools located in Gazimağusa?
- Do genital hygiene behaviours of female students enrolled in schools located in Gazimağusa demonstrate differences according to their socio-demographic characteristics?

2. METHODS

2.1. Research Design and Sample

This school-based, cross-sectional and descriptive study was conducted between 02.12.2019 and 01.04.2020 in three high schools located in Gazimağusa, Northern Cyprus. The types of schools were public college, public (general) high school, and vocational high school. Public college students were accepted through an exam conducted nationwide. Unlike the other two schools, the education system of the school aimed to prepare students for universities in other countries, primarily England. As to public (general) high schools, they accepted students without exams, using point averages, and

the majority of these students aimed at national universities and universities in Turkey. Vocational high schools did not require any prerequisites and accepted students who wanted to acquire a profession after high school. The reason for conducting the study in these schools was due to factors such as the recommendation of the Ministry of National Education, cooperation of the school administration for the study, and crowded classrooms. The universe of the study included a total of 482 female students who were enrolled in these schools when the study was conducted (Public college: 157/ public (general) high school 182/ vocational high school:143). No sampling was performed; the study aimed to access all the target population. However, 103 students who did not have parent's consent, who did not want to fill in the questionnaire despite having parent's consent, and who did not complete the questionnaire and/or who were not at school during the time data were collected were excluded from the study, and the study was completed with 379 participants who met the sampling criteria. Hence, approximately 78,6% of the target population (482) was accessed. The inclusion criteria were being enrolled in any one of the schools selected when the study was conducted, being a female, and having both parent and personal consent to participate in the study.

2.2. Data Collection Tools

Data were collected through the Socio-demographic Form and the Genital Hygiene Behaviours Scale. The Socio-demographic Form was developed by the researchers in line with the literature to collect data about the socio-demographic characteristics that might have effects on perineal hygiene (7,13,14,19). The form included 14 questions regarding the participants' demographic characteristics such as the type of school they were enrolled in, grade level, age, family structure, economic condition, etc. as well as support and source of knowledge about genital hygiene.

The Genital Hygiene Behaviours Scale (GHBS) is a measurement tool that aims to identify women's genital hygiene practices. Reliability and validity of the scale, which was developed by Karahan in Turkish in 2017, were performed with high school students. The scale is composed of 23 items and three sub-scales. The sub-scales include "General Hygiene Habits (first 12 items)", "Menstrual Hygiene" (13th to 20th items)", and "Abnormal Finding Awareness" (21st to 23rd items). The items are responded on a 5-point Likert Scale that ranged from "I strongly agree" to "I strongly disagree". Items 7, 14, 19, 20, and 23 are scored reversely. The scores to be obtained from the scale range between 23 and 115; higher scores indicate positive genital hygiene practices. The scale is a self-report scale, and it can be responded by students themselves in 10 to 15 minutes. Cronbach's Alpha value of the whole scale was found 0,80 (7). This study found Cronbach's alpha value of the whole scale as 0,76.

2.3. Data Collection Process

Collaboration was made with school administrations in the data collection phase. One week before the data were collected, the school administrations sent information and consent forms to parents and students. Data were obtained by self-report from students who gave informed consent to participate in the study during the time and place indicated by the psychological counseling unit of the schools.

2.4. Statistical Analyses

Data were analysed using Statistical Package for Social Sciences 24 software. The participating students' demographic characteristics were identified using frequency analysis. Descriptive statistics were utilized for the scores obtained from the GHBS. Normality distribution of the students' GHBS scores was analysed using the Kolmogorov-Smirnov test, and since the data did not distribute normally, the study used nonparametric hypotheses tests. Hence, the Mann-Whitney U test was utilized when the independent variable was composed of two groups and the Kruskal-Wallis H test was utilized when it was composed of more than two groups.

2.5. Ethical Considerations

Before the study was conducted, ethics committee approval was obtained from the Eastern Mediterranean University ethics committee (Date: 21.10.2019 – ETK2019/23-12). Written permission was obtained from the Ministry of National Education (Date: 26.11.2019 – GOÖ.0.00-223/02-19/E.10085), and verbal approval was obtained from the school administrations. In addition, parents and students filled in the consent forms prepared in line with the Declarations of Helsinki.

3. RESULTS

Of all the participants, 68% were aged 14-16, 41,6% were enrolled in public (general) high schools, 81,0% had a nuclear family, 63,8% lived in a village or town, and 72,3% perceived their income equal to expenses. Besides, mothers of 40,1% and fathers of 42,4% were high school graduates.

This study investigated students' support factors and sources of knowledge about genital hygiene behaviours. The analyses showed that 90,2% of the students (n= 342) received support for genital hygiene practices. Support sources were indicated as their mother by 84,2 % (n=319), other female relatives by 22,2% (n= 84), friends by 9,2% (n=35), and nurses or teachers by 1,1 % (n=4) respectively. The ratio of the students who reportedly searched about genital hygiene was 98,9% (n=375), and the sources of research were indicated as their mother and other female relatives by 82,8% (n=314), internet by 56.5 % (n=214), friends by 15.8% (n=60), and lastly teachers or nurses by 1.8% (n=7).

Table 2 demonstrates students' GHBS total and sub-scale mean scores. The GHBS total mean score was found 79.28 ± 6.80 in this study.

Table 1. Socio-demographic characteristics of the students (n=379)

	(n)	(%)
Type of School		
Vocational High School	114	30,08
Public Collage	107	28,23
Public (General) High School	158	41,69
Grade Level		
9 th Grade	97	25,59
10 th Grade	101	26,65
11 th Grade	102	26,91
12 th Grade	79	20,84
Age Group ($\bar{x}=15,83\pm 1,20$)		
14-16	261	68,87
17-19	118	31,13
Place of Living		
Village/Town	242	63,85
City	137	36,15
Education Level of the Mother		
Primary School	83	21,90
Secondary School	63	16,62
High School	152	40,11
University	81	21,37
Education Level of the Father		
Primary School	70	18,47
Secondary School	76	20,05
High School	161	42,48
University	72	19,00
Economic Condition of the Family		
Income less than expenses	19	5,01
Income equal to expenses	274	72,30
Income more than expenses	86	22,69
Family Type		
Nuclear Family	307	81,00
Extended Family	28	7,39
With one parent only	44	11,61

Comparison of the total mean scores of the GHBS according to the socio-demographic characteristics of the students are demonstrated in Table 3. It was determined that the type of school, education level of the mother and the father were effective on students' genital hygiene behaviours ($p<0,05$), but age, grade level, place of living, economic status of the family, and family type were not effective ($p>0,05$).

Table 2. Students' Genital Hygiene Behaviors Scale scores

	n	\bar{x}	s	Min	Max
General Hygiene Habits	379	43,99	4,75	23	60
Menstrual Hygiene Habits	379	27,08	2,92	17	40
Abnormal Finding Awareness	379	8,66	2,20	3	15
Genital Hygiene Behaviours Scale	379	79,28	6,80	47	112

Table 3. Comparison of the Total Mean Scores of the Genital Hygiene Behavior Scale According to the Socio-Demographic Characteristics of the Students

Variables		General Hygiene Habits Subdimension Score X ± SD	Menstrual Hygiene Habits Subdimension Score X ± SD	Abnormal Finding Awareness Subdimension Score X ± SD	Genital Hygiene Behaviours Scale Total Points X ± SD
Age Group	14-16	43,90±4,95	27,01±2,96	8,64±2,22	79,08±7,01
	17-19	44,18±4,31	27,22±2,83	8,73±2,15	79,74±6,32
		Z: -0,1280 p: 898	Z: -0,417 p: 0,676	Z: -0,331 P: 0,741	Z: -0,170 p: 0,865
Type of School	Vocational High School ¹	42,56 ±5,32	27,03±3,48	8,89±2,52	78,01±8,22
	Public College ²	44,72±4,20	26,72±2,11	8,75±2,11	79,89±5,93
	Public High School ³	44,53±4,47	27,35±2,94	8,45±1,99	79,80±6,11
		X ² :14,771 P: 0,001* Diff:1-2,1-3	X ² :1,611 p: 0,447	X ² :4,530 p:0,104	X ² :5,823 p: 0,054
Grade Level	9 th Grade	43,54±4,81	26,99±3,12	8,49±2,14	78,44±6,90
	10 th Grade	43,26±5,42	26,57±2,90	8,81±2,26	78,08±7,54
	11 th Grade	44,62±4,76	27,48±2,68	8,65±2,10	80,54±6,41
	12 th Grade	44,67±3,47	27,30±2,95	8,71±2,34	80,24±5,82
		X ² : 4,285 p:0,232	X ² : 3,325 p:0,344	X ² : 1,187 p: 0,756	X ² : 5,637 p: 0,131
Place of Living	Village/Town	44,09±4,57	27,16±2,93	8,60±2,09	79,45±6,60
	City	43,81±5,08	26,93±2,91	8,77±2,38	78,99±7,17
		Z:-0,497 p: 0,620	Z: -0,473 P: 0,636	Z: -0,936 p: 0,349	Z: -0,998 p: 0,318
Education Level of the Mother	Primary School ¹	42,82±4,62	27,17±2,87	8,53±2,37	78,60±6,00
	Secondary School ²	44,21±4,00	27,16±3,21	8,32±2,35	78,84±6,62
	High School ³	44,30±4,83	26,91±2,80	8,95±2,05	79,62±6,79
	University ⁴	44,44±5,16	27,22±3,01	8,54±2,14	79,70±7,74
		X ² : 9,806 p: 0,020* Diff:1-3,1-4	X ² : 1,312 p:0,726	X ² : 4,805 p:0,187	X ² : 7,214 p:0,065
Education Level of the Father	Primary School ¹	42,29±4,59	26,63±2,62	8,43±2,40	77,04±6,09
	Secondary School ²	44,18±4,26	27,97±3,12	8,70±2,26	79,72±5,84
	High School ³	44,39±4,55	27,07±2,92	8,84±1,96	80,01±6,57
	University ⁴	44,54±5,52	26,57±2,83	8,47±2,44	79,39±8,42
		X ² : 15,879 p: 0,001* Diff:1-2, 1-3,1-4	X ² : 8,818 p: 0,032* Diff: 1-2,2-4	X ² : 1,536 p:0,674	X ² : 16,364 p: 0,001* Diff:1-2,1-3,1-4
Economic Status of the Family	Income less than expenses	43,95±3,03	27,53±2,41	8,63±2,17	79,84±5,15
	Income equal to expenses	43,88±4,60	27,12±2,92	8,64±2,13	79,30±6,51
	Income more than expenses	44,34±5,51	26,84±3,04	8,77±2,43	79,10±8,00
		X ² : 1,688 p: 0,430	X ² : 1,331 p: 0,514	X ² : 0,861 p: 0,650	X ² : 0,282 p: 0,869
Family Type	Nuclear Family	44,17±4,66	26,85±2,85	8,67±2,24	79,36±6,83
	Extended Family	44,04±4,58	28,04±3,74	8,54±2,13	79,50±7,02
	With one parent only	42,68±5,37	28,05±2,59	8,68±1,93	78,64±6,58
		X ² : 1,688 p: 0,430	X ² : 1,331 p: 0,514	X ² : 0,861 p: 0,650	X ² : 0,282 p:0,869

Z: Mann-Whitney U test, X²: Kruskal-Wallis H, Diff: Difference, *p<0,05

4. DISCUSSION

The majority of adolescents' sources of knowledge about genital hygiene included parents (16, 20, 21, 24, 26,27), close friends, and media (28). In line with the literature, this study also found that students mostly consulted a woman in their family, particularly their mother, about menstrual and GHB. Receiving no support from fathers is considered to result from the traditional view, which indicates that generally parents having the same gender with their children deal with gender-specific care. The finding indicating low ratios of receiving information and consultation from health professionals is also parallel to the related literature (20,21, 23, 27, 29,30). This finding is considered to be the indicator of the lack of school nursing practices in the country as well as the failure of protective health services in accessing adolescents.

This study found the participating students' GHBS general mean score as 79.28. When it is considered that the scores to be obtained from the scale range between 23 and 115 and higher scores indicate right genital hygiene behaviours, the participants in this study are considered to have right hygiene behaviours. In their similar study, Göger and Tuncay (2021) reported the GHBS total mean score of female high school students staying in a hostel as 85.3 (31). In their study conducted with midwifery department students, Kartal et al. (2020) found the GHBS total score as 95.2 (32).. Another study conducted with women who received education in the field of health sciences reported the GHBS total scores of the first – and second-year students 93.77 and 95.16 respectively (33). A study conducted with female high school students in Ethiopia reported the hygiene behaviours ratio as 53.6%; another study conducted in the same country reported it 46.1% (34,35). This ratio was reported to be 63.3% in Indonesia (36). The findings obtained from this study are similar to the findings in the study conducted with high school students in Turkey, which might result from the fact that the two societies have a common culture and similar socio-demographic characteristics. On the other hand, students who received education in the health sciences, due to their age and education, received the highest scores in this study, which was an expected finding. When compared to the studies in Ethiopia and Indonesia, despite not being at the desired level, genital hygiene behaviours of female adolescents in Northern Cyprus were higher.

This study also investigated whether students' genital hygiene behaviours were affected by socio-demographic characteristics or not. Adaptation to menstrual periods and perineal hygiene are reported to be insufficient in the early periods of adolescence, but healthy menstrual and genital hygiene habits are reported to increase with the increase in age and experience (9,26,33,34,35). On the other hand, Göger and Tuncay (2021), like in this study, reported no difference between high school female students' age and genital hygiene behaviours (31). This might result from the fact that the students' age was close to each other.

Education and health are the primary development and improvement components of societies, and the relationship

between them is known, continuous, and positively strong (37). The majority of the studies on GHB conducted with adolescents indicated that the students' hygiene behaviours were affected by the education level of mothers positively or negatively (25, 28, 31, 32, 34,38). On the other hand, some studies reported that the education level of the mother did not affect students' GHB (33,39). In line with the general literature knowledge, this study found that students with low mother education level had worse general hygiene habits. The most remarkable finding of this study is that the education level of fathers was low among students who had low scores in the GHBS general and general hygiene and menstrual hygiene sub-scales. A study conducted in Lebanon also reported a similar finding (38). Based on this study and literature examples, both parents' education levels were found to be the most important variable that affects students' GHB.

Education institutions have a fundamental purpose of producing and disseminating culture at different levels and transmitting the cultural heritage of society from generation to generation (40). Therefore, schools, where adolescents spend most of their time, affect students' health and behaviours (41). The literature includes contradictory results on the effects of students' menstrual hygiene behaviours (34, 38). This study found that the type of school affected students' genital hygiene behaviours. Hence, general hygiene behaviours of adolescents in technical high schools were poorer than other schools. There are no specific regulations and education on this issue in the schools where the study was conducted, and since no school nursing service was provided, this difference was considered to result from the profile of students who applied to these schools. The reason was that while students were accepted to the schools at public college status with exams, they were accepted to the general high schools with point averages. There was no prerequisite for being accepted to the technical high school; students who did not have a university plan and had low achievement scores applied to these schools to acquire a profession.

The difference between these student profiles is considered to affect the study results. The literature includes studies showing that healthy GHB increased with the increase in grade level as well as other studies showing no differences (31,34,38,42). This study found that, like in the age factor, the grade level did not affect genital hygiene behaviours.

Just like in education, income level and family structure are among factors affecting women's health status. Studies investigating adolescent females' GHB showed that adolescent females who had a nuclear family (43) and those who had high income had better GHB (9, 25, 44). However, this study found that both factors did not affect GHB.

The distance of women's place of living to service centres such as schools and hospitals and communication sources affect their social status and health (45). Some studies reported that genital hygiene behaviours of young women were poorer because they had low economic income and

education level, and they had problems about access to health institutions and hygiene products (9, 42). However, like in this study, there are some other studies that showed that the place of living did not affect women's genital hygiene habits (34, 43). As for Northern Cyprus, the biggest places of living are towns, and villages are close to town centres and are quite developed. Therefore, this study assumed that students who lived in villages or towns and those who lived in city centres had similar resources and thus had similar GHB.

This study contributed to the literature about GHB of females living in a region where the issue was not investigated much so far. Adolescent females' above-average knowledge on the issue indicates their vulnerability. The identification of high-risk groups is one of the most important responsibilities of protective health services. This aspect of the study contributed to protective health services. On the other hand, health professionals were found to have almost no contribution to the education and consultancy needs of adolescents about GHB, and education was found to be the most important factor affecting GHB. This finding indicates the need to integrate health services into education services through implementations like school nursing.

5. CONCLUSION

This study showed that the participants had above-average knowledge of right genital behaviours. Factors affecting GHB were found to be the type of school, education level of the mother, and education level of the father. Due to the clear effect of education on GHB, health professionals working in the field of community health are recommended to be included in the programs specific to the issue and then they should be provided with structured trainings for students, parents, and teachers. Researchers interested in the issue are recommended to conduct studies that evaluate students' urogenital symptoms and genital hygiene behaviours in tandem and randomized controlled studies that could assess the effect of structured training for parents, teachers and students.

Informed Consent

Written informed consent was obtained from the students and their parents.

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Statement of Conflict of interests

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