

Assess Knowledge and Practice of Preparatory Student About Personal Hygiene in Riyadh City

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Abstract: Adolescence is the stage of human life, which transition from childhood to adulthood. Personality accentuated and where knowledge and habits that can last a lifetime acquired. In what concerns to health education, adolescence is the most difficult period in accepting health education, because it is characterized by non-accepting information advice provided by parents or teachers. There are many risks to health during adolescence, mainly because young people are not care in risks and believe they are not at risk or vulnerable to disease. Personal hygiene is the basic concept of cleaning and it is the first step to good health, it consider as one of the most important part of our daily lives at everywhere (home and workplace) and which help us to avoid disease and protect our health. Appropriate knowledge and practices of personal hygiene plays an important role in prevent communicable diseases. The aim of this study was to assess knowledge of personal hygiene in preparatory student in Riyadh City. About 246 female students were participated in this study through Google forms –create and analyze surveys, selected by convenience sample. Questionnaire included four parts, first part consist of demographic data, health history (personal and menstrual), 2nd part was regarding menstruation hygiene, third part was about personal hygiene, fourth part was about hand hygiene, shower, mouth hygiene. The data collected, tabulated and analyzed by using SPSS V.25, descriptive and inferential statistics employed. There is a definite need for intense personal hygiene education programs in Riyadh City based on preparatory students' needs.

Keywords: Personal Hygiene, Knowledge, Adolescent, Preparatory Student

1. Introduction

Adolescence is the stage of human life, which transition from childhood to adulthood [1, 2]. Personality accentuated, so knowledge and habits that can last a lifetime acquired. Adolescence is the most difficult period in accepting health education, because it characterized by not accepting information advice provided by parents or teachers. There may be many risks to health during adolescence, mainly because young people not care in risks and believe they are not at risk or vulnerable to disease [2].

According to World Health Organization (WHO) defined the adolescence as the age group of 10-19 years [1].

According to WHO hygiene refers to conditions and

practices that help to maintain health and prevent the spread of diseases [3]. Appropriate knowledge and practices of personal hygiene plays important role in prevent communicable diseases [4].

There is different habits for personal hygiene i.e., washing hands and brushing teeth, which keep organisms far away from our bodies. These habits will help us to protect good health and activity [5].

Most commonly disease related to poor personal hygiene are Diarrheal diseases, skin diseases, worm infestations and dental diseases [6].

Hygiene-related practices of women during menstruation are of considerable importance, as it has a health impact in terms of increased vulnerability to reproductive tract infections (RTI). Good hygienic practices such as the use of

sanitary pads and adequate washing of the genital area are essential during menstruation [7-10].

According to Leveille T. [7], Nurses should engage in teaching parents, children and adolescents about measures that can help prevent vaginitis. This include perineal hygiene such as wipe perineal area from front to back, wash hands before washing or touching genital area, avoid fingering and inserting objects in the perineal area, and keep the genital area dry and clean, avoid tight fitting clothing, wear cotton underwear.

Various gynecological problems in the reproductive can happen with Lack of knowledge and poor personal hygienic practices during menstruation. Water and sanitation it is important to manage menstruation hygiene [8]. The aim of this study is to assess knowledge and practice of preparatory student about personal hygiene in Riyadh, Saudi Arabia.

2. Methodology

2.1. Research Design

Descriptive cross -sectional design conductive in Riyadh city for preparatory school student.

2.2. Sample Type

Using convenience sample method, the data was collected through Google forms. The sample size equal 264 preparatory students. Questionnaire was send to 400 intermediate female student through the previous web site. Only 264 students answer on questionnaire.

2.3. Tool for Data Collection

A structured questionnaire used as a tool for data collection it included:

1st section include 7 question regarding Demographic profile & Health History and 3 question regarding Medical and menstrual history and Source of personal hygiene

2nd section include 13 question regarding menstruation knowledge

3rd section include 10 question regarding knowledge about general personal hygiene

4th section include 8 question regarding hand hygiene, 4 question regarding shower and 2 question regarding mouth hygiene

The content validity of the questionnaire items was ensured based on an expert opinion of four consultant, obstetric and gynaecologist, 3 faculty staff at KSU.

2.4. Scoring System

Scoring were used to evaluate participants' awareness and practice about personal hygiene and menstrual hygiene.

The knowledge section consists of 47 questions and the correct answers were pre- determined from the literature.

A score = zero corresponded to incorrect answer; and a score = one, to correct answer. Therefore, overall, the maximum and minimum possible scores were 35 and 0,

respectively. Poor score was considered to be a score < 18 (i.e. < 50%), and other scores categorized were good score 18-25 (i.e. 50-75%) and very good score 27-35 (i.e. 75-100%).

2.5. Pilot Study

It was carried on 10 student not included in real sample for the purpose of modification and clarification and to estimate the time required to fell in the questionnaire. Unclear items were clarified unnecessary items were omitted and new variable were added.

2.6. Subject Criteria

-Inclusion Criteria: Preparatory schools, Saudi and non-Saudi student in Riyadh city

-Exclusion Criteria: Others city in Saudi Arabia

2.7. Data Analysis

The collected data from the filled questionnaire were analysed using SPSS. Data has been categorized, coded and analysed according to appropriate Statistical method by using Statistical Package for Social Sciences, SPSS v. 25 (SPSS Inc. IBM). Descriptive statistics have been used to describe the sample variables frequencies, means and STD deviations, tables and figure have been made. Nomograms with confidence intervals (95%) were established for parameters of the study; P-value was significant at <0.05. Chi-squared test used to examine the distribution of the data, T test and ANOVA to compare between variables.

3. Results

Table 1. Frequency distribution of the study sample according to student characteristics (N =264).

Items	N	%
Students' Characteristics		
Age		
11 less than 12 years	55	20.8
12 to 14 years	79	29.9
More than 14 years	130	49.2
Total	264	100.0
Educational level		
First grade intermediate	64	24.2
Second grade intermediate	66	25.0
Third grade intermediate	134	50.8
Total	264	100.0
Arrange of the student among her family members		
First	75	28.4
Second to fourth	82	31.1
Fifth or more	107	40.5
Total	264	100.0

Table 1. Shows percentage distribution of the students according to their demographic characteristic, approximately half (49.2%) of students their age more than 14 years, while

one third (29.9%) were between 12 to below 15 years, and (20.8) were under 12 years. Regarding the students' Educational level, 24.2%, 25% and 50.8 % were in the first, second, and third-grade intermediate consecutively. In addition, arrangement of the students among their family members was (28.4%) for first, (31.1%) for Second to fourth, the majority were Fifth or more (40.5%).

Table 2. Frequency distribution of the study sample according to parent characteristics (N =264).

Items	N	%
B- Parents' Characteristics		
Mother's education level		
Uneducated	68	25.8
Primary school	30	11.4
Intermediate school	39	14.8
Secondary school	57	21.6
University	65	24.6
Other	5	1.9
Total	264	100.0
Mother's employment status		
Work	78	29.5
Do not work	185	70.1
Other	1	.4
Total	264	100.0
Father's education level		
Uneducated	10	3.8
Primary school	53	20.1
Intermediate school	38	14.4
Secondary school	68	25.8
University	91	34.5
Other	4	1.5
Total	264	100.0
Family income per month		
Less than 3000 SAR	21	8.0
3000 less than 7000 SAR	155	58.7
More than 7000 SAR	88	33.3
Total	264	100.0

Table 2 Illustrates percentage distribution of students' parents' according to their demographic characteristic. One quarter (25.8%) of their mothers were Uneducated, in the other hand nearly quarter (24.6%) completed university level. Regarding Mother's employment status, the majority of the mothers (70.1%) of mothers were did not work, while (29.5%) work. Father's education levels ranged between different educational categories, but the major percentage was for university graduates (34.5%), then secondary school (25.8%) and primary school (20.1%), the lowest percentage was for uneducated only (3.8%). Furthermore, family income per month has been shown, 3000 less than 7000 SAR category was the majority (58.7%), followed by More than 7000 SAR (33.3), and less than 3000 SAR only (8%).

Table 3. Frequency distribution of the study sample according to Medical and menstrual history characteristics (N =264).

Items	NO.	%
C. Medical and menstrual history		
Medical history		
Heart disease	4	1.5
Renal disease	5	1.9
Anaemia	14	5.3
Endocrine disease	7	2.7
All mentioned	2	.8
I did not get any disease	223	84.5
Others	9	3.4
Total	264	100.0
Age at menarche (years)		
Less than 9 years	23	8.7
9 less than 15 years	181	68.6
More than 15 years	47	17.8
Not yet	13	4.9
Total	264	100.0

Table 3 shows The Percent distribution of students according to their medical history, the majority (84.5%) never diagnosed with chronic disease, (5.3%) diagnosed with Anaemia, (2.7%) Endocrine disease, (1.9 %) Renal disease, (1.5%) Heart disease, and only (0.8%) of students diagnosed with all mentioned diseases, while (3.4%) diagnosed with other diseases such as respiratory tract infections. Regarding distribution of students according to their age at menarche. The majority (68.6%) of students menstruated between ages of nine to less than 15 years, while (4.9%) were not yet got menarche.

Table 4. Distribution of sample according to the General correct knowledge about personal hygiene.

Items	Correct Answers		P value
	NO	%	
The definition of personal hygiene	253	95.8	0.000
components of personal hygiene	8	3.0	0.004
Personal hygiene is important	253	95.8	0.000
If the appearance of the person is clean and elegant it means the person healthy	242	91.7	0.000
Should cotton underwear be used?	232	87.9	0.000
Should underwear be dried in the sun?	215	81.4	0.000
Your face must be clean	254	96.2	0.000
Are there any secretions in the eye?	192	72.7	0.000
Your hair must be clean	256	97.0	0.000
Should your clothes be clean	258	97.7	0.000

Table 4 shows general information about personal hygiene items with extremely significant value ($P < 0.000$) for all items except the item component of personal hygiene includes ($P = 0.004$). The highest percentages of correct answers were belonged to cleanness of clothes (97.7%) and cleanness of hair (97%) respectively.

Table 5. Distribution of sample according to correct knowledge of Practicing of personal hygiene.

Items	Correct Answers		P value
	NO	%	
Hand hygiene			
Washing your hands using soap and water is better than just using water	249	94.3	0.000
Biting the nails by teeth is unhealthy behavior	249	94.3	0.000
Do you wash your hands?	205	77.7	0.000
Do you use soap when washing your hands	175	66.3	0.000
Should your nails be clean	262	99.2	0.000
Shower			
You must take a shower every day to keep clean	231	87.5	0.000
How many times do you take shower	29	11.0	0.000
Do you take a shower on your own	243	92.0	0.000
Lack of hygiene during the menstrual cycle leads to complications	241	91.3	0.000
Mouth hygiene			
Are you brushing your teeth	215	81.4	0.000
When should you clean your teeth?	51	19.3	0.000

Table 5 shows practice of hygiene items with extremely significant value ($P < 0.000$) for all items which were divided into three main categories Hand hygiene, Shower and Mouth hygiene. The highest percentage of correct answer regarding Hand hygiene (99.2%) which was regarding cleanness of nails. About shower, the highest percentage of correct answer (92%) which was regarding 'Do you take a shower on your own'. Moreover, mouth hygiene highest percentage of correct answer (81.4%) which was regarding 'Are you brushing your teeth'.

Table 6. Distribution of sample according to their correct answer about menstrual hygiene practice.

Items	Correct Answers		P value
	NO	%	
The cleaning of genital area	129	48.9	0.000
Bathing during the menstrual days	249	94.3	0.000
Times of changing sanitary pads per day	15	5.7	0.000
Is bathing harmful during menstrual period	121	45.8	0.000
Should you wash your hands before entering the toilet?	205	77.7	0.000
It is best to wear cotton underwear	202	76.5	0.000
It is necessary to remove pubic hair	214	81.1	0.000
The genital area must be dried after going to the toilet	196	74.2	0.000
Changing a sanitary towel does not have to be constantly	161	61.0	0.000
Abundance of menstrual blood is normal	63	23.9	0.000
It is normal to have mild colic before the menstrual cycle by a day or two	196	74.2	0.000
Wearing cotton clothing prevents infections	167	63.3	0.000
Drying the genital area after using the bath will be from front to back	194	73.5	0.000

Table 6 show practice towered menstrual hygiene items with extremely significant value ($P < 0.000$) for all items. The highest percentages of correct answer (94.3%) and (81.1%) where regarding bathing during the menstrual days and necessity to remove pubic hair respectively.

Table 7. Distribution of the sample according to level of knowledge about menstrual and personal hygiene.

Score	Frequency	Percent
Poor knowledge	9	3.4
good knowledge	94	35.6
Very Good knowledge	161	61.0
Total	264	100.0

Table 7 It was found that 161 (61%) of students have very good level of knowledge, 94 (35.6%) good level of knowledge, and only 9 (3.4%) Poor level of knowledge.

Table 8. Correlation between sociodemographic characteristic and level of knowledge for daughters.

		Score			Total	Chi ² Value (P)
		Poor knowledge	Good knowledge	Very good knowledge		
Age						
11 less than 12 years	Count	4	32	19	55	33.149*
	% of Total	1.5%	12.1%	7.2%	20.8%	
12 to 14 years	Count	2	35	42	79	(0.000)
	% of Total	0.8%	13.3%	15.9%	29.9%	

		Score			Total	Chi ² Value (P)
		Poor knowledge	Good knowledge	Very good knowledge		
More than 14 years	Count	3	27	100	130	
	% of Total	1.1%	10.2%	37.9%	49.2%	
Total	Count	9	94	161	264	
	% of Total	3.4%	35.6%	61.0%	100.0%	
Educational level						
First grade intermediate	Count	4	26	34	64	
	% of Total	1.5%	9.8%	12.9%	24.2%	
Second grade intermediate	Count	2	32	32	66	
	% of Total	0.8%	12.1%	12.1%	25.0%	12.981*
Third grade intermediate	Count	3	36	95	134	(0.011)
	% of Total	1.1%	13.6%	36.0%	50.8%	
Total	Count	9	94	161	264	
	% of Total	3.4%	35.6%	61.0%	100.0%	
Arrange of the student among her family members						
First	Count	4	39	32	75	
	% of Total	1.5%	14.8%	12.1%	28.4%	
Second to fourth	Count	3	28	51	82	
	% of Total	1.1%	10.6%	19.3%	31.1%	17.153*
Fifth or more	Count	2	27	78	107	(0.002)
	% of Total	0.8%	10.2%	29.5%	40.5%	
Total	Count	9	94	161	264	
	% of Total	3.4%	35.6%	61.0%	100.0%	

* Statistically Significant (Correlation is significant at the 0.05 level).

Table 8: Regarding relationship between Demographic data and Knowledge score, Students' data represented by three items (Age, Educational level and Arrange of the student among her family members), all of them showed significant correlation with Knowledge score (P=0.000, 0.011 and 0.002 respectively). Correlation Coefficient for Age vs Knowledge score is (0.345 when Sig. = 0.000). In addition, Correlation Coefficient for Educational level vs Knowledge

score is (0.188 when Sig. = 0.002). Furthermore, Correlation Coefficient for Arrange of the student among her family members vs Knowledge score is (0.248 when Sig. = 0.000). Herein Age, Educational level and Arrange of the student among her family members correlate positively with Students' Knowledge score, beer in mind age has the best correlation followed by students' arrange and educational level respectively.

Table 9. Correlation between sociodemographic characteristic of the parents and level of knowledge.

		Score			Total	Chi ² Value (P)
		Poor knowledge	Good knowledge	Very good knowledge		
Mother's education level						
Uneducated	Count	2	14	52	68	
	% of Total	0.8%	5.3%	19.7%	25.8%	
Primary school	Count	1	13	16	30	
	% of Total	0.4%	4.9%	6.1%	11.4%	
Intermediate school	Count	4	21	14	39	
	% of Total	1.5%	8.0%	5.3%	14.8%	
Secondary school	Count	1	21	35	57	
	% of Total	0.4%	8.0%	13.3%	21.6%	22.844* (0.011)
University	Count	1	24	40	65	
	% of Total	0.4%	9.1%	15.2%	24.6%	
Other	Count	0	1	4	5	
	% of Total	0.0%	0.4%	1.5%	1.9%	
Total	Count	9	94	161	264	
	% of Total	3.4%	35.6%	61.0%	100.0%	
Mother's employment status						
Work	Count	Count	4	33	41	
	% of Total	% of Total	1.5%	12.5%	15.5%	
Do not work	Count	Count	5	61	119	
	% of Total	% of Total	1.9%	23.1%	45.1%	4.176 (0.383)
Other	Count	Count	0	0	1	
	% of Total	% of Total	0.0%	0.0%	0.4%	
Total	Count	Count	9	94	161	
	% of Total	% of Total	3.4%	35.6%	61.0%	

		Score			Total	Chi ² Value (P)
		Poor knowledge	Good knowledge	Very good knowledge		
Father's education level						
Uneducated	Count	1	2	7	10	38.684 *(0.000)
	% of Total	0.4%	0.8%	2.7%	3.8%	
Primary school	Count	0	6	47	53	
	% of Total	0.0%	2.3%	17.8%	20.1%	
Intermediate school	Count	2	9	27	38	
	% of Total	0.8%	3.4%	10.2%	14.4%	
Secondary school	Count	5	27	36	68	
	% of Total	1.9%	10.2%	13.6%	25.8%	
University	Count	1	48	42	91	
	% of Total	0.4%	18.2%	15.9%	34.5%	
Other	Count	0	2	2	4	
	% of Total	0.0%	0.8%	0.8%	1.5%	
Total	Count	9	94	161	264	
	% of Total	3.4%	35.6%	61.0%	100.0%	
Family income per month						
Less than 3000 SAR	Count	5	8	8	21	30.086*(0.000)
	% of Total	1.9%	3.0%	3.0%	8.0%	
3000 less than 7000 SAR	Count	2	56	97	155	
	% of Total	0.8%	21.2%	36.7%	58.7%	
More than 7000 SAR	Count	2	30	56	88	
	% of Total	0.8%	11.4%	21.2%	33.3%	
Total	Count	9	94	161	264	
	% of Total	3.4%	35.6%	61.0%	100.0%	

* Statistically Significant (Correlation is significant at the 0.05 level.)

Table 9: Regarding relationship between Demographic data and Knowledge score, Parents' Data represented by four items (Mother's education level, Mother's employment status, Father's education level and Family income per month). Mother's education level, Father's education level and Family income per month showed significant correlation with Knowledge score (P=0.011, 0.000 and 0.000 respectively). Mother's employment status do not appear to correlate with

Knowledge score statistically (P=0.383). In addition, Correlation Coefficient for Father's education level vs Knowledge score is (-0.287 when Sig. = 0.000), which represent weak negative correlation. Furthermore, Correlation Coefficient for Family income per month vs Knowledge score is (0.101 when Sig. = 0.100), this result suggest that the relationship between the variable do not follow linear model.

Table 10. Correlation between Medical and menstrual history and level of knowledge.

		Score			Total	Chi ² Value (P)
		Poor knowledge	Good knowledge	Very good knowledge		
Medical history						
Heart disease	Count	0	2	2	4	29.400* (0.003)
	% of Total	0.0%	0.8%	0.8%	1.5%	
Renal disease	Count	1	3	1	5	
	% of Total	0.4%	1.1%	0.4%	1.9%	
Anaemia	Count	1	7	6	14	
	% of Total	0.4%	2.7%	2.3%	5.3%	
Endocrine disease	Count	2	1	4	7	
	% of Total	0.8%	0.4%	1.5%	2.7%	
All mentioned	Count	0	0	2	2	
	% of Total	0.0%	0.0%	0.8%	0.8%	
I did not get any disease	Count	5	75	143	223	
	% of Total	1.9%	28.4%	54.2%	84.5%	
Other	Count	0	6	3	9	
	% of Total	0.0%	2.3%	1.1%	3.4%	
Total	Count	9	94	161	264	
	% of Total	3.4%	35.6%	61.0%	100.0%	
Age at menarche (years)						
Less than 9 years	Count	1	11	11	23	13.972 * (0.030)
	% of Total	0.4%	4.2%	4.2%	8.7%	
9 less than 15 years	Count	4	70	107	181	
	% of Total	1.5%	26.5%	40.5%	68.6%	
More than 15 years	Count	2	12	33	47	
	% of Total	0.8%	4.5%	12.5%	17.8%	
Not yet	Count	2	1	10	13	
	% of Total	0.8%	0.4%	3.8%	4.9%	

		Score			Total	Chi ² Value (P)
		Poor knowledge	Good knowledge	Very good knowledge		
Total	Count	9	94	161	264	
	% of Total	3.4%	35.6%	61.0%	100.0%	

* Statistically Significant (Correlation is significant at the 0.05 level).

Table 10: Regarding relationship between Demographic data and Knowledge score, Medical history showed significant correlation with Knowledge score ($P=0.003$); Correlation Coefficient for Medical history vs Knowledge score is (0.074 when Sig. = 0.282) this result suggest that the relationship between the variable do not follow linear mode. In addition, relationship Age at menarche and level of Knowledge score showed significant correlation ($P=0.030$). Correlation Coefficient for Medical history vs Knowledge score is (0.119 when Sig. = 0.053) this result suggest that the relationship between the variable do not follow linear mode.

Table 11: shows the sources of personal hygiene. The majority (75%) of students, their source of knowledge about personal hygiene was from their parents, followed by

teachers (12.5%), textbooks (4.9%), other sources such as internet, magazines, friends and other family members (4.5%), (1.9%) from TV, while (1.1%) of the students extend their knowledge from all mentioned sources.

Table 11. Frequency distribution of the study sample according to Source of information about personal hygiene.

Items	NO.	%
Parents	198	75.0
Teacher	33	12.5
TV	5	1.9
Books	13	4.9
Other	12	4.5
All mentioned	3	1.1
Total	264	100.0

Table 12. Correlation between Source of knowledge about personal hygiene and level of knowledge.

source of personal hygiene		Score			Total	Chi ² Value (P)
		Poor knowledge	Good knowledge	Very good knowledge		
Parents	Count	3	60	135	198	
	% of Total	1.1%	22.7%	51.1%	75.0%	
Teacher	Count	2	20	11	33	
	% of Total	0.8%	7.6%	4.2%	12.5%	
TV	Count	3	2	0	5	
	% of Total	1.1%	0.8%	0.0%	1.9%	
Books	Count	1	6	6	13	
	% of Total	0.4%	2.3%	2.3%	4.9%	68.230* (0.000)
Other	Count	0	5	7	12	
	% of Total	0.0%	1.9%	2.7%	4.5%	
All mentioned	Count	0	1	2	3	
	% of Total	0.0%	0.4%	0.8%	1.1%	
Total	Count	9	94	161	264	
	% of Total	3.4%	35.6%	61.0%	100.0%	

* Statistically Significant (Correlation is significant at the 0.05 level.)

Table 12: Regarding relationship between Demographic data and Knowledge score, Source of knowledge about personal hygiene showed significant correlation with Knowledge score ($P=0.000$); to find out the direction of the function between variables, Spearman's rho test was performed. Correlation Coefficient for Medical history vs Knowledge score is (-0.251 when Sig. = 0.000) this result suggest that the variables having negative correlation.

4. Discussion

According to the 2015 UNICEF / WHO JMP Access to basic facilities for menstrual hygiene is critically important for female health, safety and dignity. Further, women and girls need access to basic information from the personal, menstrual cycle how to manage it with dignity [11]. In the present study nearly fifty percent their age 14 years, at third grade intermediate School and 41% were third born child,

the result is consistent with finding conducted in Harray 2016 and in Boston 2017.

Regards to general knowledge about personal hygiene is very good but only 3% Know the component of personal hygiene and 11% they Don't know how many times they took shower these observation may be due to lack of proper health education programs in the school, which focused on menstrual health and hygiene among girls.

Most of the participant of all age and level of education hand wash hygiene, clean of the hair, shower and mouth care. Overall finding consistent with previous studies that have documented knowledge and practices of hygiene among schoolchildren in developing country [10].

On the other hand, there a significant relationship between educational level of the student and her ranked within her sister and the level of knowledge; also level of mother and father education and family income has significant relationship and level of knowledge ($P=0.001$) similar result

was reported in Ethiopia , Lebanon, India and Nigeria [12-15].

This result May explain that educated mother may have awareness and practice of menstrual and personal hygiene and they may have provided material for their daughters to pay more attention to self-care.

5. Conclusion

The study concluded that more student had experience healthy knowledge about personal, menstrual hygiene except in few element. A well-informed continuous school education programme should be imparted to the student. Further emphasis also need to be conducted via workshop and seminar on reproductive health, and provide verbal and written instruction about personal and menstrual hygiene.

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