

**The Relationship between Hygienic Practices and Occurrence of Asymptomatic Bacteriuria in Female Freshmen Students of Riverside College, Bacolod City**

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**Abstract:** *This study was conducted to determine whether a significant association exists between hygienic practices and occurrence of Asymptomatic Bacteriuria among female freshmen students. The study revealed that the students have limited knowledge about UTI, but they have good hygienic practices. One in five of the students tested positive for UTI. No significant relationship was found between the students' hygienic practices and occurrence of Asymptomatic Bacteriuria in female freshmen students. No significant association was also found between students' level of knowledge about UTI and their hygienic practices.*

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**Introduction**

*Background of the Study*

Millions of Filipinos are affected by urinary tract infection (UTI). In Bacolod City, the Department of Health reported that in 1998 the mortality rate of urinary tract and kidney related diseases ranked seventh (7<sup>th</sup>) in the top ten list. In the mid 1950's UTI was already considered to be an important contributor to chronic renal failure, hypertension and toxemia of pregnancy. Thus, asymptomatic bacteriuria was considered potentially harmful. (New England Journal of Medicine, 2000).

Visible and invisible physiological changes take place during puberty. Among these are hormonal changes. These changes make this group age a risk for UTI. This is the period where sexual changes occur and sexual activity starts.

To prevent UTI, hygiene is important due to hormonal changes that cause the increase of discharges. Early detection of UTI can prevent kidney damage and further complications. If diagnosed early, treatment

could be instituted, but if asymptomatic, it cannot be treated, unless determined by laboratory examinations.

One of the precautionary measures recommended to prevent UTI is proper hygiene. It is believed that when one practices proper hygiene, she will be less exposed to bacteria and less prone to infection. Data supporting this assumption, however, are still limited, thus this study.

### ***Objectives of the Study***

This study was conducted to determine the relationship between the knowledge about UTI and hygienic practices, and between hygienic practices and occurrence of asymptomatic bacteriuria among female freshmen at Riverside College, Bacolod City of school year 1998-1999.

Specifically, the study aims to determine:

1. the students' level of knowledge about Urinary Tract Infection (UTI) and asymptomatic bacteriuria, their medical history related to UTI, their hygienic practices in terms of bathing, clothing, grooming and toileting and their experience with asymptomatic bacteriuria,
2. whether there is a significant relationship between the students' level of knowledge about UTI and their hygienic practices,
3. whether there is a relationship between the students' past experience with UTI and their hygienic practices, and
4. whether there is a significant relationship between hygienic practices and experience with asymptomatic bacteriuria.

### ***Hypotheses***

1. There is a significant relationship between students' knowledge about UTI and their hygienic practices,

2. There is a significant relationship between past medical history and the students' hygienic practices,

3. There is a significant relationship between hygienic practices and occurrence of asymptomatic bacteriuria.

### ***Methodology***

This descriptive-correlational study made use of the survey method and microscopic analysis of the urine specimen submitted by the respondents. A questionnaire was administered to 133 randomly selected female freshmen students of Riverside College, Bacolod City to collect information on the students' hygienic practices and their experiences with asymptomatic bacteriuria.

Permission to conduct the study was obtained from the President of the College. The questionnaires were administered simultaneously. The students were assured of the confidentiality of the information they provided.

For the urine analysis, each of the sample student was given a vial for their urine specimen collection. They were instructed to obtain a midstream clean catch specimen of their urine and fill the vial with the specimen. The vial must be at least three fourths (3/4) full and must be submitted to the school laboratory for analysis within the hour of collection of the urine sample.

### **Findings and Discussions**

#### *Students' Knowledge about Causes of UTI.*

The majority of the 133 first year studied knew that "burning sensation during urination is one sign of UTI" (80.5 percent), "UTI is curable by medication" (75.2 percent), "drinking water can help cure UTI" (66.9 percent), and "that UTI occur more among female than among male individuals" (60.0 percent). Less than half of the respondents, however, knew that "organism causing UTI comes from the digestive

system" (21.8 percent), "cloudy urine means UTI", (29.3 percent), "UTI occurs more in pregnant women and those sexually active. (31.6 percent), and "wearing pantyhose and tight fitting jeans predisposes one to UTI" (32.3 percent). The data indicate that even the nursing student still lack information about some causes of UTI.

**On the whole, the respondents obtained a mean score of 5.2 which is equivalent to "average knowledge." This indicates that the students are only fairly knowledgeable about UTI, which means that they still have a lot to learn about the causes and symptoms of UTI.**

Table 1. Distribution of Respondents According to Knowledge About UTI

Information they knew about UTI	f	%
UTI occurs more in females than in males.	80	60.1
Burning sensation during urination is one sign of UTI.	107	80.5
Causative organism of UTI comes from our digestive system.	29	21.8
Cloudy urine specimen does not necessarily mean UTI.	39	29.3
Sitting on hot benches does not predisposes one to UTI.	71	53.4
Drinking lots of fluids can cure UTI.	89	66.9
Once you had UTI, you can have it again	86	64.7
UTI is curable by medication.	100	75.2
UTI occurs more in pregnant women and those sexually active.	42	31.6
Wearing pantyhose and tight fitting jeans may lead to UTI.	43	32.3
Level of Knowledge about UTI (based on Correct Answers)		
Low (0 – 2)	11	8.3
Average (3 – 5)	57	42.9
Above Average (6 – 8)	61	45.9
High (9 – 10)	4	3.0
TOTAL	133	100.0
Mean knowledge score = 5.1729		

*Previous Experience with UTI*

Eleven of the 133 respondents had experienced signs and symptoms of UTI, the most common of which was frequency of urination, followed by difficulty in initiating urination (6). Five reported experiencing pain during urination, while three reported pain after urination.

One of five students (20 %) of the 133 students had visited a physician for UTI consultation. The rest did not. It will be noted that the proportion of students who visited a physician for UTI consultation is greater than the proportion of those who reported that they had experienced UTI. It appears that some of those who consulted a doctor for UTI treatment experienced had findings other than those mentioned earlier. This is possible because, some symptoms of UTI are similar to symptoms of other related illnesses.

Table 2. Distribution of Respondents According to Previous Experience of Signs and Symptoms of UTI

Experienced with Signs & Symptoms of UTI	f (n=133)	%
<b>Experienced Symptoms</b>	<b>11</b>	<b>8.3</b>
<b>Symptoms Experienced (Multiple Response)</b>		
<b>Difficulty in initiating urination</b>	<b>6</b>	
<b>Pain during urination</b>	<b>3</b>	
<b>Pain after urination</b>	<b>5</b>	
<b>Increased frequency of urination</b>	<b>11</b>	
<b>Visited doctor for UTI consultation</b>	<b>27</b>	<b>20.0</b>

*Hygienic Practices*

The students' level of hygienic practices is represented by the mean score from the scores for bathing, toileting, grooming and clothing

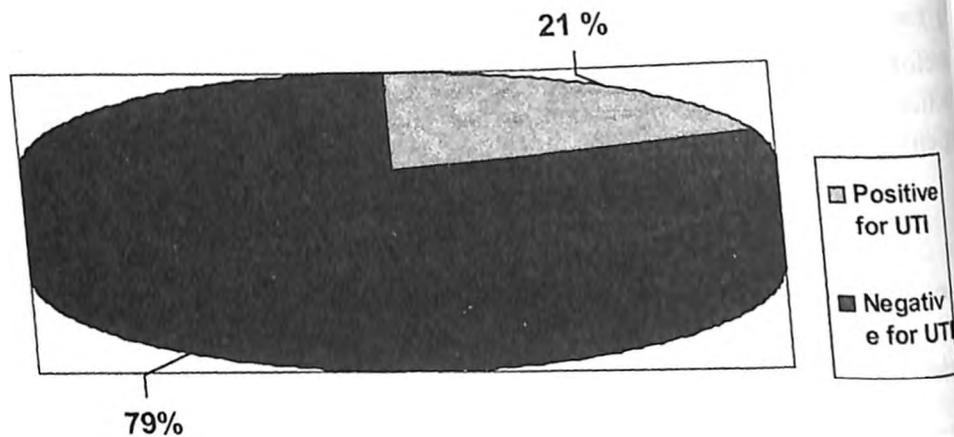
practices of the respondents. Their overall mean scores were categorized into “very good”, “good”, “fair”, and “poor.” The results show that most of the respondents had “good” practices in bathing (81.2 %), toileting (82.7 %), clothing (57.9 %) and grooming (50.4 %). On the whole, therefore, the students had “good hygienic practices. Except in clothing practices, less than 20 % percent of the students had “very good” hygienic practices.

Table 3. Distribution of Respondents According to their Hygienic Practices

Level of Practices	Category of Hygienic Practices							
	Toileting		Bathing		Clothing		Grooming	
	f	%	f	%	f	%	f	%
Poor	0	0	0	0	1	0.8	14	10.5
Fair	6	4.5	7	5.3	22	16.5	46	34.6
Good	110	82.7	108	81.2	77	57.9	67	50.4
Very Good	17	12.9	18	13.5	33	24.8	6	4.5
<b>TOTAL</b>	<b>133</b>	<b>100.0</b>	<b>133</b>	<b>100.0</b>	<b>133</b>	<b>100</b>	<b>133</b>	<b>100.0</b>

#### *Incidence of Asymptomatic Bacteriuria*

Students' experience with asymptomatic bacteriuria was determined by urine examination. The urinalysis results revealed that of the 133 respondents who submitted urine samples one in five (21 %) were positive of asymptomatic bacteriuria.



**Fig. 1 Incidence of Asymptomatic Bacteriuria Based on Urinalysis Results**

#### *Students' Knowledge about UTI and Hygienic Practices*

The results of the analysis for relationship between students' knowledge about UTI and their hygienic practices show that, irrespective of the students' level of knowledge about UTI, the majority have "good" overall hygienic practices (Low=81.8 %, average = 84.2 % and above average = 86.9 % and high =100 percent). The distribution indicates no pattern of association between the two variables. This is affirmed by a Gamma coefficient of 0.177, which is not significant at the 5 percent level. The data do not support the hypothesis therefore that knowledge about UTI is significantly associated with hygienic practices. This means that knowledge about UTI has no significant bearing on hygienic practices.

Table 4. Distribution of Respondents According to Knowledge About Urinary Tract Infection and Overall Hygienic Practices

Overall Hygienic Practices	Knowledge							
	Low		Average		Above Average		High	
	f	%	f	%	f	%	F	%
Fair	0	0	1	1.8	1	1.6	0	0
Good	9	81.8	48	84.2	53	86.9	4	100.0
Very Good	2	18.2	8	14.0	7	11.5	0	0
Total	11	100.0	57	100.0	61	100.0	4	100.0

Gamma = -0.17773 not significant at 0.05 level

In relation to the specific indicators of hygienic practices, the students' level of knowledge about UTI was found to be associated in various degrees. The highest degree of association was registered in relations to bathing practices ( $G=.484$ ), followed by clothing practices ( $G=.359$ ), then grooming practices (.204). The extent of relationship between knowledge and toileting practices ( $G=.070$ ) is almost nil. A significant result was registered only between knowledge and clothing practices and between level of knowledge and bathing practices. The data imply that the more the students know about UTI, the better their clothing and bathing practices. However, irrespective of how much they know about UTI, the students' toileting and grooming practices are still "good."

Table 3. Relationship Between Knowledge about UTI and Hygienic Practices

Hygienic Practices	Gamma Coefficient	Significance
Clothing	0.359	Significant
Toileting	0.070	Not significant
Bathing	0.484	Significant
Grooming	0.204	Not significant

### *Past Experience With UTI and Hygienic Practices*

Someone with a history of UTI is expected to be more careful and conscious with her hygienic practices because she does not want to get infected again. This assumption, however is not supported by the results of the survey. Table 3 shows that there is no significant association between past experience with UTI and each of the indicators of hygienic practice. The Cramers' V values were 0.0878 for toileting, 0.1077 for grooming, 0.2374 for bathing, to 0.3708 for clothing. The values indicate low but significant association between past experience with UTI and clothing practices and bathing practices.

Table 3. Relationship Between Past Experience with UTI and Hygienic Practices

Hygienic Practices	Cramers' V	Significance
Clothing	0.3708	Significant
Toileting	0.0878	Not significant
Bathing	0.2374	Significant
Grooming	0.1077	Not significant

### *Hygienic Practices and Occurrence of Asymptomatic Bacteriuria*

On the whole, the majority of the students, irrespective of their hygienic practices tested negative of asymptomatic bacteriuria. Although higher percentage of positive results was noted for those who had fair hygienic practices (50 %) than those with "good" (21.1 %) and "very good" (17.7 %), practices, the variation in proportions was negligible. The Cramers' V test of association, likewise did not yield a significant result (.007). This means that among the first year students, hygienic practices is not associated with occurrence of asymptomatic bacteriuria. The absence of relationship between the two variables may be explained by the fact that in general the students had "good" hygienic practices.

Table 6. Distribution of Respondents According to Overall Hygienic Practices and Occurrence of Asymptomatic Bacteriuria

Occurrence of Asymptomatic Bacteriuria	OVERALL HYGIENIC PRACTICES							
	Fair		Good		Very Good		Total	
	f	%	f	%	f	%	F	%
Positive	1	50.00	24	21.05	3	17.65	28	21.05
Negative	1	50.00	90	78.95	14	82.35	105	78.95
Total	2	100	114	100	17	100	133	100

Cramer's V = 0.09205, not significant at 0.05 level

The absence of association between overall hygienic practice and occurrence of asymptomatic bacteriuria is also reflected in the results of analysis for association between each of the four indicators of hygienic practices and occurrence of asymptomatic bacteriuria. Table shows that a small degree of association between clothing practices and occurrence of Asymptomatic Bacteriuria was present, however the Cramers' V tests for association between the two variables did not yield statistically significant values. This means that clothing practices do not have a significant bearing on occurrence of Asymptomatic Bacteriuria. Between each of the three other indicators of hygienic practices and the dependent variable, the degree of association is almost nil.

Table 3. Cramers' V Values for Test of Association Between Hygienic Practices and Occurrence of Asymptomatic Bacteriuria

Hygienic Practices	Cramers' V Value	Significance
Clothing	0.3221	Not significant
Toileting	0.0633	Not significant
Bathing	0.1049	Not significant
Grooming	0.1217	Not significant

### Conclusions

In general the female college freshmen students of Riverside College have "good hygienic practices, despite the fact that they have limited knowledge about urinary tract infection and asymptomatic bacteriuria. Although the data show that an increase in knowledge about UTI tended to improve practices, the relationship between the variables did not reach a significant level. It could not be concluded, therefore, that knowledge about UTI can lead to improved hygienic practices

The hygienic practices in terms of bathing, toileting, clothing and grooming of the female freshmen students were good, however, the students have specific hygienic practices that must still be corrected, such as the wearing of tight pants, wearing of stockings inside pants and the use of scented panty shield and sanitary napkins. The student apparently need further educational enrichment and updating in personal hygiene and UTI.

The small degree but statistically insignificant relationship between hygienic practices and occurrence of Asymptomatic Bacteriuria among the female freshmen students of Riverside College indicate that UTI infection is slightly influenced by hygienic practices, however, there may be other more important factors than hygienic practices of students which may have caused the infection.

The fact that one in five of the female students tested positive of UTI indicates that female adolescents are prone to this type of infection. The fact, however, that they did not manifest symptoms of infection imply that they may not have been able to seek treatment for their infection. If their condition is not treated, they could be exposed to more risk of further infection and possible other health complications.

### Recommendations

The hygienic practices of the female students and their knowledge about urinary tract infection still need a lot of improvement. The school can be an effective venue for further health education. Topics on this concern can be incorporated in health related courses, not only in college, but as early as elementary level, because at this stage some girls

already experience onset of menarche. The training need to be reinforced in high school because this is the period when most girls enter adolescence and they experience many physiological changes than can affect their health and behavior.

The students should be encouraged to attend lectures, and participate in activities, such as updates, seminars and other enriching Related Learning Experience (RLE) to equip them with knowledge to educate their own clients in the future.

The Department of Health (DOH) must put emphasis on the importance of hygiene in health promotion and disease prevention, especially among young women. DOH must include in their information dissemination campaign and in their UTI Prevention Program adequate information about proper hygiene and its important role in UTI prevention.

For accurate and conclusive results or the presence of asymptomatic bacteriuria, a urine culture for specific identification of the causative organism is recommended. Future studies on hygienic practices must use improved measures and instrument to obtain a more accurate information.

Future studies on hygienic practices and UTI must include other groups of women, such as working and home-based women. Stratification of the research participants can be done to find out whether practices and incidence and degree of infection vary across different specific groups of women.

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