

# Survey on Knowledge attitudes and practices of Haematuria among patients who attend a tertiary referral center in Central Sri Lanka

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**Abstract-** Haematuria is a common finding in urine full reports. The source of haematuria can be anywhere along the urinary tract. The study was a cross sectional descriptive type study. It was carried out in the general surgical clinics at the Teaching Hospital Peradeniya. The study was based on a closed ended self-administered questionnaire. Altogether 425 participants comprised of 258 (60.7% of the total population) female participants and 167 (39.3% of the total population) male participants. They were between 18 years and 75 years of age. Mean age of the population was 47.75 years. The mean average knowledge score of the population is 45.11% (SD=21.10). However the participants had good attitudes regarding haematuria. The majority believes that blood in the urine can be the presentation of a serious medical condition and it is essential to further investigate blood passing with urine. This attitude is very important as it can reduce the patient delay in presenting to a doctor. Though the attitude regarding haematuria seems to be good, knowledge regarding haematuria is poor in our study population. Therefore it is important to take measures to improve the knowledge by health care professionals. As a conclusion, surgical clinic attendees of General hospital Peradeniya have a poor knowledge regarding haematuria, but found to have good attitude and practice regarding severity and treatment.

**Index Terms-** Haematuria, knowledge, attitudes and practices.

## I. INTRODUCTION

Haematuria is a common finding in urine full reports. Haematuria on urinalysis in patients encountered by general practitioners (GPs), with an incidence of 4 per 1000 patients per year (1). It represents about 6% of new patients seen by urologists (2). The source of haematuria can be anywhere along the urinary tract. Though it could be due to some benign conditions like urinary tract infections and urinary calculi, it could also be due to very severe conditions like malignancies in urinary tract or other surrounding structures. Gross haematuria can be the initial presentation of a malignancy in urinary tract, especially bladder carcinoma. Evidence shows that up to 13% of patients with haematuria end up being diagnosed with a urologic cancer and up to 53% of those considered initially to have benign conditions end up having urologic malignancies (3,4). One study to see presenting symptoms of bladder carcinoma revealed that painless haematuria is the most common symptom of bladder carcinoma, as a percentage 79% (5). Therefore presentation to a

relevant Doctor and further investigation without an unnecessary delay is very important.

Evidence shows that up to 13% of patients with haematuria end up being diagnosed with a urologic cancer and up to 53% of those considered initially to have benign conditions end up having urologic malignancies (3,4). The interval from onset of symptoms until treatment averaged 28 weeks (median = 15 weeks). The general practitioner delay comprised half of the total delay (5). Though it is not said as a fraction there should be some delay in patients as well.

Although the length of delay did not influence the crude survival rate in patients with tumours in the two highest TNM stages, in T1 and T2 tumours, shorter delay tended to give a better survival rate (5). Therefore it is important to minimize the delay in presentation of patients with haematuria. For that both doctors and patients delays should be addressed.

Although there is no survey on knowledge attitude and practices of haematuria among general population, there are several studies done to assess knowledge and attitude of haematuria among primary care physicians and medical students (7,8)

There is a study conducted in 2008, with registered primary care physicians in Quebec to see practice and referral patterns of haematuria, among primary care physicians in a universal health care system. There seems to be reluctance amongst primary care physicians to refer patients with gross or significant microscopic haematuria to urology for further investigation. A higher level of suspicion and further education should be implemented to detect serious conditions and to offer earlier intervention when possible (7). This reflects poor knowledge and attitude regarding haematuria among primary care physicians.

Another study conducted in 2008 in New York to see deficits in urological knowledge among Medical students and primary care providers. It revealed that the general urological knowledge with regard to primary care setting was insufficient (8).

Patients' knowledge attitude and practices are important factors causing delay in presentation. Therefore it is important to assess knowledge attitude and practices of haematuria in general population before planning health care education programs later on. Our objective was to determine knowledge, attitude and practice of haematuria among patients who are attending to surgical clinics, Teaching Hospital Peradeniya.

## II. PATIENTS AND METHOD

The study was a cross sectional descriptive type study. It was carried out in the general surgical clinics at the Teaching Hospital Peradeniya. Patients between 18 to 40 years of age attended general surgical and subfertility clinics from 17.08.2015 to 11.09.2015 were selected in to this study using Systematic random sampling method. Severely ill patients who were unable to answer the questionnaire, Patients who couldn't read and write, Patients who were mentally disturbed were excluded from the study.

The number of subjects was calculated according to the sample size formula for cross sectional studies. As we could not find any data to suggest the percentage of knowledge regarding haematuria among general population, we have taken the maximum sample size with a confidence limit of 95% and a 5% precision level.

We have collected data from 425 patients. The study was based on a closed ended self-administered questionnaire. The questionnaire is initially designed by the research team after doing a thorough literature review. The questionnaire was translated into Sinhala and Tamil. The test-retest reliability was measured in a pilot study of 20 participants before data collection. The questionnaire was composed of five parts: The first part collected demographic data of the patients, such as age, gender, occupation, education and data to assess health facilities and sources of information. The second part was to assess the level of knowledge regarding haematuria. This part consisted of a total of eleven questions.

The statements were concerned with the knowledge regarding causes for haematuria, severity and potential outcome of haematuria. Eleventh question was composed of ten common causes of haematuria. Participants were asked to mark yes or no for each question. Each correct answer was given one point and total marks will be given out of twenty and calculated the percentage. The correct response was scored as "1." Incorrect and "Don't know" responses was scored as "0." An overall knowledge score was calculated by summing the scores for the statements. Thus, the highest possible score is 20 points. The mean percentage score was calculated.

The third part concerned attitudes toward haematuria. This two attitude statement scale that used a five-point Likert scale to evaluate the participants' attitudes toward haematuria. Participants were given "Strongly agree," "Agree," "Not sure," "Disagree," or "Strongly disagree" responses to all of the questions. The negative attitude statements were scored from 1 ("Strongly agree") to 5 ("Strongly disagree"). The reverse of this scoring system was used for the positive attitude statements.

The fourth part concerned practices regarding haematuria. Two questions were provided to assess various practices among general population. There were some additional questions to gain more information for health education. All participants' privacy was very much concerned. The participants were informed that their decision regarding participation would not affect their treatment or their relationships with their physicians. Only participants who were willing to participate in the study, after being fully informed regarding the aim of the study and methodology, were included in the target sample of the study. All participants had the right to refuse the participation or to withdraw from the study before completion. Participants were

asked not to mention their names in the answer sheet so as to be anonymous. Data was treated confidentially. The study was started only after getting approval from ethical clearance committee of faculty of Medicine, University of Peradeniya.

## III. RESULTS

### Socio demographic factors

Altogether 425 participants comprised of 258 (60.7% of the total population) female participants and 167 (39.3% of the total population) male participants. They were between 18 years and 75 years of age. Mean age of the population was 47.75 years. (Summary table 1)

**Summary table 1-** Description of the study population by age

Age group	Number	Percentage
<25 years	31	7.3%
26-35 years	35	8.2%
36-45 years	112	26.4%
46-55 years	145	34.1%
56-65 years	77	18.1%
>66 years	25	5.9%

There were participants who have never attended to a school. There were graduated participants. There was a range of educational levels in between those two. Majority (46.6%) has completed G.C.E.O/L as their highest educational level. Next to that 34.1% has completed G.C.E.A/L as their highest educational level. (Summary table 2)

**Summary table 2-** Description of the study population by participants' highest educational level

Highest education level	Number	Percentage
< Grade 8	18	4.2%
Grade 8 completed	37	8.7%
G.C.E. O/L	198	46.6%
G.C.E. A/L	145	34.1%
Graduated	15	3.5%
Other	12	2.8%

### Knowledge regarding haematuria

The total population scored a Mean average of 45.11% (SD=21.10). male participants scored a Mean average of 45.65% (SD=21.72), female participants scored a Mean average of 44.76% (SD=20.72) No significant difference in Mean average marks between male and female (p=0.6)

**Summary table 3 –** Description of the study population by the highest educational level and mean average marks for the knowledge part of the questionnaire

Highest educational	N	Mean	Standard deviation	95% confidence interval for mean
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level				Lower bound	Upper bound
Less than Grade 8	18	38.61	23.56	26.89	50.32
Grade 8 completed	37	29.86	23.34	22.08	37.64
G.C.E. O/L	198	43.48	20.39	40.62	46.34
G.C.E. A/L	145	50.00	19.27	46.83	53.16
Graduated	15	51.00	11.98	44.36	57.63
Other	12	62.50	20.94	49.19	75.80
Total	425	45.11	21.10	43.10	47.12

There were some statistically significant differences in mean average marks between groups as determined by one way ANOVA test ( $P < 0.000$ ). Tukey post hoc test revealed that there were significant differences between Grade 8 completed group and G.C.E.O/L passed group ( $P = 0.003$ ), Grade 8 completed group and G.C.E.A/L passed group ( $P < 0.000$ ), Grade 8 completed group and Graduated group ( $P = 0.009$ ) and Grade 8 completed group and the group having other educational qualifications like Diplomas after G.C.E.A/L. There was a significant difference between G.C.E.O/L passed group and G.C.E.A/L passed group ( $P = 0.03$ ), but no difference between G.C.E.O/L passed group and Graduated group ( $P = 0.73$ ). The mean average of the group of participants who have not completed Grade 8 was not significantly lower than other higher educational groups and the mean average of the group of participants who have degrees was not significantly higher than other lower educational groups except than the grade 8 completed group ( $P = 0.009$ ).

**Summary table 4** – Description of the study population by the age and mean average marks for the knowledge part of the questionnaire.

Age group	N	Mean	Standard deviation	95% confidence interval for mean	
				Lower bound	Upper bound
<25 years	31	48.87	18.96	41.91	55.82
26-35 years	35	47.00	22.36	39.31	54.68
36-45 years	112	48.12	19.70	44.43	51.81
46-55 years	145	43.51	20.84	40.09	46.93
56-65 years	77	44.15	21.54	39.26	49.04
>66 years	25	36.60	26.04	25.84	47.35

Total	425	45.11	21.10	43.10	47.12
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There was no statistically significant difference in mean average marks between age groups as determined by one way ANOVA test.

A total of 82.8% of total population said that it is always possible to recognize blood in urine with naked eye. Altogether 64.2% of total population said that red color urine is always due to blood in urine. A majority of 84.0% of total population is aware of the fact that some drugs can alter the colour of urine and 63.8% of total population is aware of the fact that some food can alter the colour of urine.

A majority of 86.1% believed that if blood in urine is due to a serious condition like a malignancy, invariably the patient will experience pain. A total of 74.4% of total population said that severity of the underlying condition depends on the amount of bleeding. Altogether 60.5% of total population said that blood passing with urine can be cured by drinking plenty of water and 81.4% said that it can be cured by traditional herbal drinks.

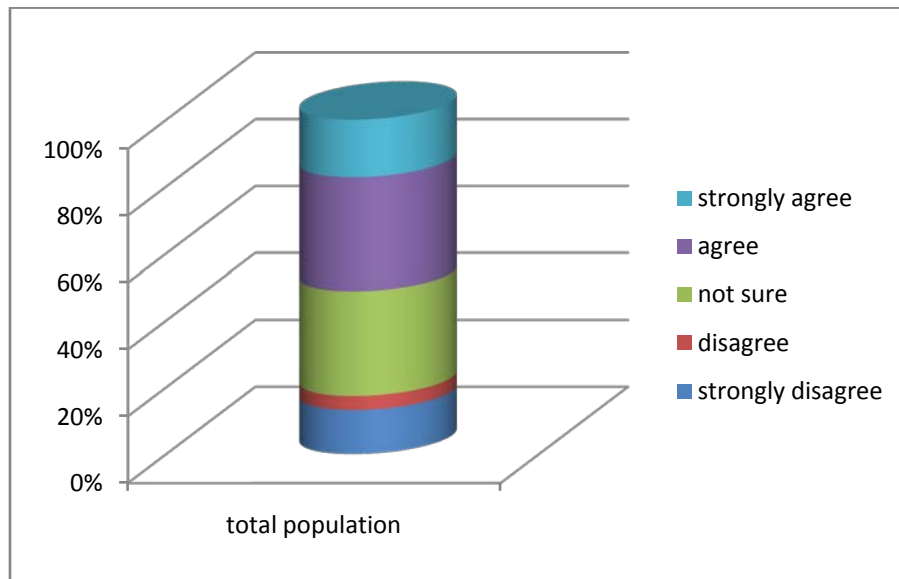
There are several conditions that can be associated with haematuria. There was a question to assess the knowledge regarding those factors. The majority correctly identified cancers of urinary tract, urinary tract infection, stones in urinary tract, trauma to urinary tract and disease conditions of kidneys as conditions that can be associated with haematuria (summary table 5).

**Summary table 5-** knowledge regarding Conditions that can be associated with haematuria

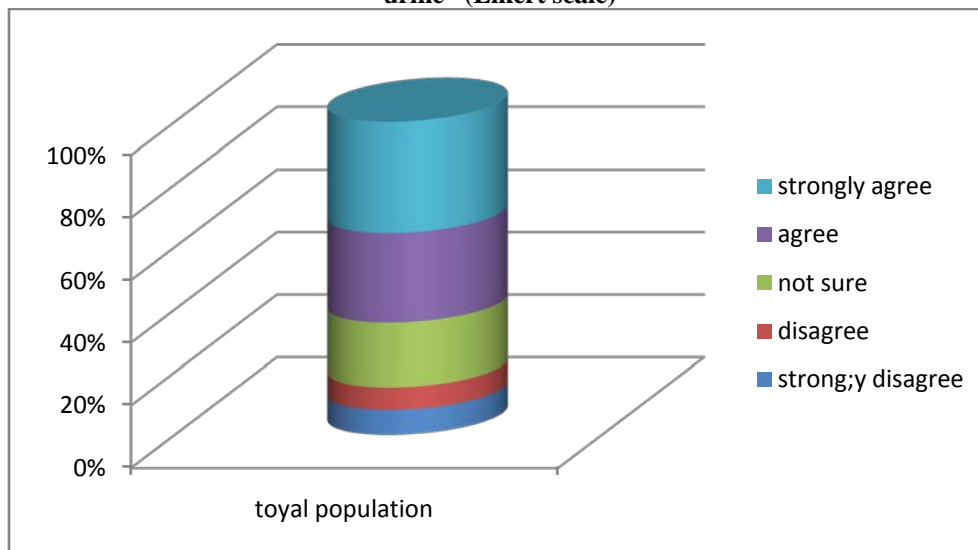
Conditions that can be associated with haematuria	Percentage of patients correctly identified it as a condition that can be associated with haematuria
Cancers of urinary tract	60.5
Other pelvic cancers	46.4
Urinary tract infection	64.5
Stones in urinary tract	54.8
Trauma to urinary tract	73.6
Disease conditions of kidneys	62.4
Vigorous exercise	16.5
Blood disorders	47.5
Some medication	39.5
Snake bite	42.6

#### Attitude regarding haematuria

**Graph 1- Study population’s frequency of answering to the statement “Blood in the urine can be the presentation of a serious medical condition” (Likert scale)**

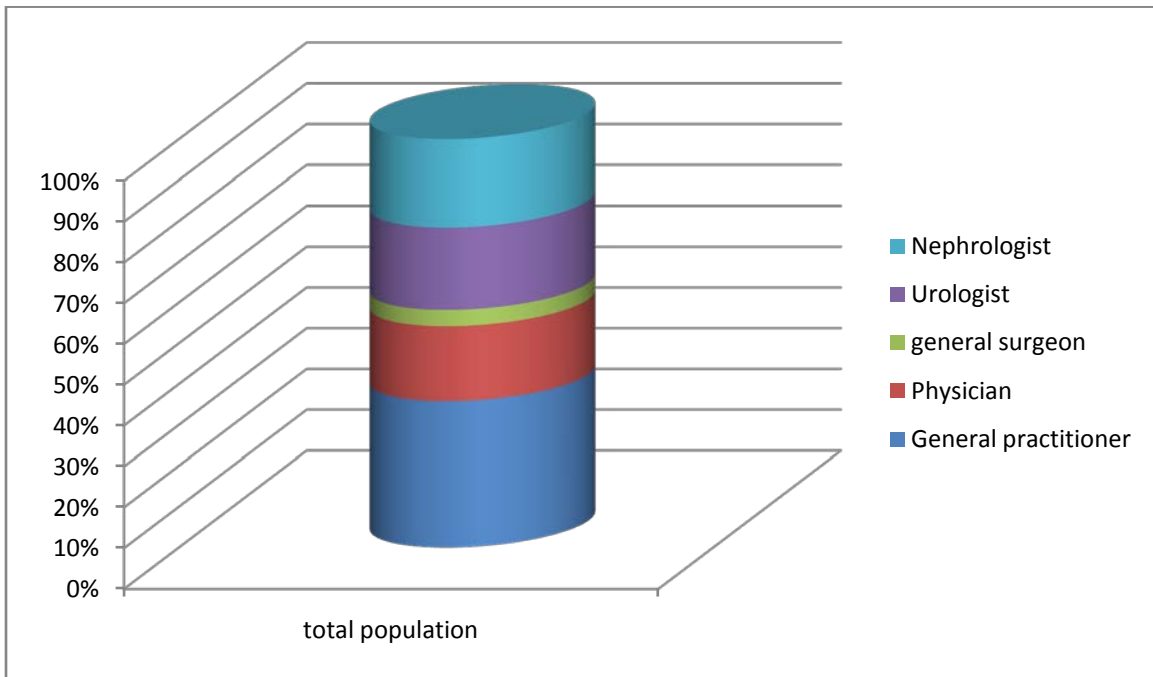


**Graph 2 - Study population’s frequency of answering to the statement “It is essential to further investigate blood passing with urine” (Likert scale)**

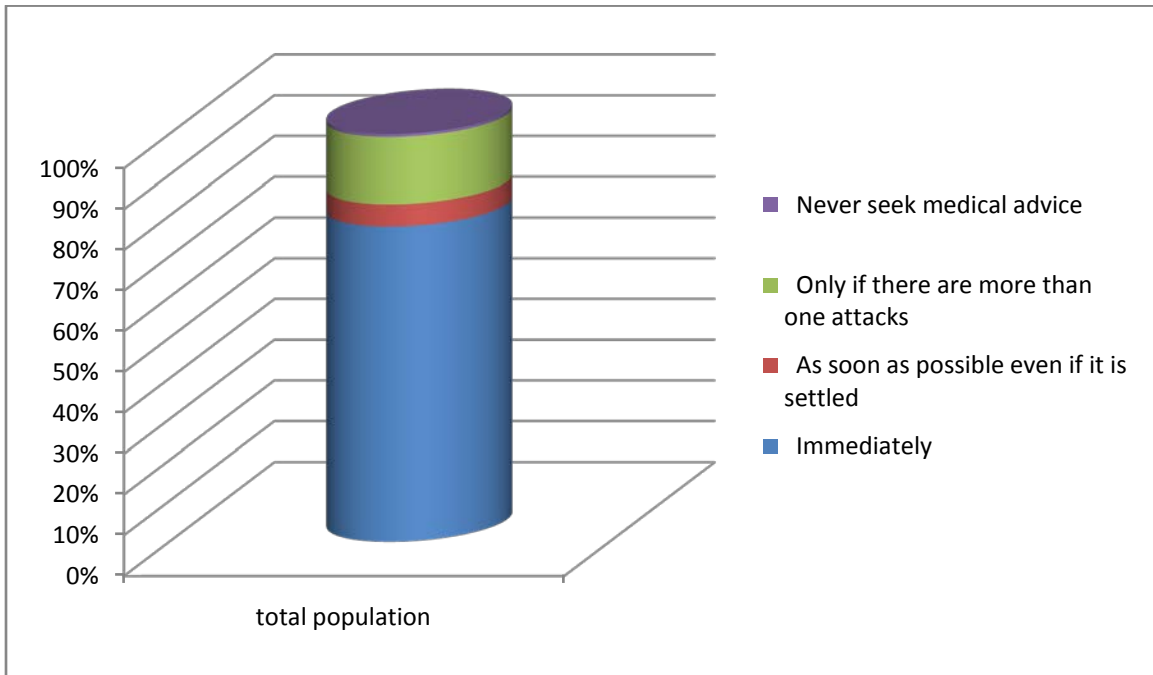


**Practices of haematuria**

**Graph 3- Practice of study population; answers to the question “If you detect blood in your urine, whom will you consult”**



**Graph 4 - Practice of study population; answers to the question "When will you consult them"**



#### IV. DISCUSSION

This study was designed to collect information regarding knowledge attitude and practices of haematuria in Sri Lankan population. Though it is not possible to find out a published survey on knowledge attitude and practices of haematuria in general population directly, there are some studies from which we can have an idea about patients' knowledge and attitude about haematuria.(5,6)

In our study, the total population scored a Mean average of 45.11 % (SD=21.10) which seems to be poor. Though the mean

averages of some higher educational groups were significantly higher than some lower educational groups it was not always dependent on the educational level of participants. As an example, the mean average of the group of participants who have not completed Grade 8 was not significantly lower than any other higher educational level and the mean average of the group of participants who have degrees was not significantly higher than other lower educational levels except than the grade 8 completed group (P=0.009).

Altogether 82.8% of total population said that it is always possible to recognize blood in urine with naked eye. That shows,



the majority of the study population was not aware of the condition microscopic haematuria.

A total of 86.1% believed that if blood in urine is due to a serious condition like a malignancy, invariably the patient will experience pain. It shows the majority of the study population was not known regarding the fact that painless haematuria can be a presentation of some severe conditions like a malignancy in Urinary tract. Altogether 74.4% of total population said that severity of the underlying condition depends on the amount of bleeding. If they quantify the severity of haematuria based on the amount of bleeding and the pain experienced by the patient they will underestimate some episodes of haematuria, but actually they should not. 60.5% of total population said that blood passing with urine can be cured by drinking plenty of water and 81.4% said that it can be cured by traditional herbal drinks. Those are false beliefs that can affect the management.

However the participants had good attitudes regarding haematuria. The majority believes that Blood in the urine can be the presentation of a serious medical condition and it is essential to further investigate blood passing with urine. This attitude is very important as it can reduce the patient delay in presenting to a doctor.

Participants selected both Nephrologist and Urologist in equal percentages (~20% for each) to take treatment for haematuria, but majority (35.8%) preferred general practitioner. Urologists are the doctors specialized in the management of haematuria, but our study population did not see any difference between Urologist and Nephrologist with regard to the management of haematuria. A majority of 77.4% preferred immediate consultation if they develop haematuria. That is a good practice as if they present immediately to a doctor, the patient's delay will be minimum.

Though the attitude regarding haematuria seems to be good, knowledge regarding haematuria is poor in our study population. Therefore it is important to take measures to improve the knowledge by health care professionals.

## V. CONCLUSION

Surgical clinic attendees of General hospital Peradeniya have a poor knowledge regarding haematuria, but found to have good attitude and practice regarding severity and treatment.

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