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The Prevalence of Asymptomatic Bacteriuria among People Living in Public Compounds at Obinze Community of Imo State

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ABSTRACT

The study was conducted between November 2024 and March 2025 using a well-structured questionnaire. Urine samples were collected after engaging Two Hundred (200) persons living in public compounds at Obinze, Imo State. The selected study group was given questionnaires to fill. The samples were collected with suitable sterile urine bottles and transported to the Microbiology Unit of Science Laboratory Technology Department FUTO, where they were processed and inoculated on cysteine lactose electrolyte-deficient media. The result showed that the mean age of the studied population was 32.9 years. The respondents aged 31–35 years were the highest, followed by those in the age range of 26–30 years. Most of the respondents did not receive formal education (68%), were mostly Christians (90%) whose average family size was 6.3 and married (80%). Ninety percent of the respondents have not heard about bacteriuria and did not know the bacterial load that constitutes them. There was a high level of knowledge about health practices and personal hygiene. They had high bacteria load in their urine because they were living in the public compounds. Respondents with normal urine samples ranged between 88% to 98%, but morphological and biochemical analyses showed a high percentage of Escherichia coli (56%), followed by Staphylococcus aureus (28%), Enterococcus spp. (6.7%), Pseudomonas aeruginosa (6.7%), and Klebsiella pneumoniae (2.6%). This indicated that the public compound inhabitants of Obinze may witness an outbreak of Urinary Tract Infection (UTI) at the nearest time. Personal hygiene and routine medical checks are necessary in the community.

INTRODUCTION

Different microorganisms can cause Urinary Tract Infections (UTIs), but the most common among them are Escherichia coli, Klebsiella pneumoniae, Proteus mirabilis, Enterococcus faecalis, and Staphylococcus saprophyticus. The Nigerian population's financial burden is threatened by uropathogens' high recurrence rates and growing resistance to antibiotics (Flores-Mireles *et al.*, 2015; Odoki *et al.*, 2019; Jamiu *et al.*, 2021). Asymptomatic bacteriuria occurs when the level of bacteria in a urine sample is higher than the typical colony forming unit (105 cfu/mL) without any signs of infection, but it is serious indication that one may have UTIs in the nearest time. Asymptomatic bacteriuria is not felt as body abnormality; thus, people do not see it as a problem. Urine samples containing bacteria should not be ignored because urinary tract infections are becoming more common. Regular medical examinations are not common in Africa, particularly in Nigeria. The clinic is only used for medical examinations by sick patients. Regular check-ups at a health clinic can eliminate hidden infections in the body, but we didn't think it was required (Odoki *et al.*, 2019).

Symptomatic bacteriuria can lead to urinary tract infections (UTIs), and most of the symptomatic bacteriuria typically originate from the invisible. It can be classified as either asymptomatic or symptomatic (Jamiu *et al.*, 2021). Urinary tract infections (UTIs) are a major cause of morbidity and comorbidities in patients with underlying diseases, and they account for most hospital visits worldwide, according to Odoki *et al.* (2019). Neglecting the pre-factorial source of the infection known as Asymptomatic Bacteriuria (ASB) is the most troubling aspect of managing the prevalence of urinary tract disorders. Since people do not show outward symptoms when having ASB, they do not take it as anything. Therefore, asymptomatic bacteriuria which is sometimes used synonymously with asymptomatic UTI is defined as the persistent and actively multiplying bacteria within the urinary tract without symptoms or signs (Agarwal *et al.*, 2021). It is considered significant when bacteria are present in a quantity of $\geq 10^5$ colony forming units (CFU)/ml (Verma *et al.*, 2016).

Researches have revealed that asymptomatic bacteriuria can be noticed in all ages. Although studies have continually favoured prevalence of bacteriuria in women because of their anatomical organization (Ibrahim *et al.*, 2024), few reports have established that anyone can experience the same health situation. Bacteria of public significance has been isolated from the urine samples of school children and elderly persons. Because of this occurrence, it was posited that infection of the urinary tract is among the commonest causes of diseases in childhood (Elo-Ilo *et al.*, 2013). To deepen this fact, Ello-Ilo *et al.* (2013) isolated Staphylococcus aureus,

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Streptococcus faecalis, and Escherichia coli from a sample of mid-stream, clean catch urine of pre-school children in Nnewi, South–East Nigeria during their research on the prevalence of asymptomatic bacteriuria. From the research, it was discovered that female school children had higher percentage of the bacteria than their male counterparts. Similarly, the presence of asymptomatic bacteriuria in healthy primary school children in Enugu state Nigeria was reported by isolating high percentage of Escherichia coli and Staphylococcus aureus from a mid-stream clean catch urine sample of the children (Chime *et al*., 2018).

There are several factors associated with prevalence of ASB. Bacteriuria for example is largely caused by poor hygiene and sharing of towels and other clothing within older children and adults. Poor toilet sanitation and maintenance coupled with non-availability of clean water to flush the toilets in primary schools and other public compounds are common in developing countries such as Nigeria and it has been reported as a factor (Chime *et al*., 2018). In Imo state, particularly Obinze where this research was carried out, most public compounds where people are living do not have good source of water supply, those who have do not have good generator to pump water as often as possible. Above all, the high price of Premium Motor Spirit (PMS) and epileptic power supply from Enugu State Power Distribution Company (EEDC) have contributed to worsening the whole situation. Because of these effects, it has prominently triggered a large population of bacteria cells in urine samples of the residents. Evidently, urine diagnosis in both public and private health posts within Obinze and its environment has reported higher prevalence of asymptomatic bacteriuria in the recent time. Asymptomatic bacteriuria in urine samples also results from poor hygiene among residents in public complexes.

Escherichia coli, Klebsiella pneumoniae, Staphylococcus aureus, Enterobacter aerogenes, Pseudomonas species, and Proteus mirabilis are commonly found during asymptomatic bacteriuria screening. These bacteria are sometimes referred to as Enterobacterales. It is important to understand that certain of these bacteria cause urinary tract infections (UTIs) (Aminu & Aliyu, 2015). Anybody living in the endemic area who has the risk criteria and is immunocompromised is susceptible to these bacteria. People should try to make informed decisions about where to stay. Human health can be seriously affected by so many factors, but the greatest among them that should not be taken for granted is the immediate surroundings (Brusseau, Ramirez-Andreotta & Maximillain, 2019). The environment in which one finds himself or herself has a great impact on the person's life. Unhygienic environments tend to trigger epidemics with ease, which can even go inter-continental in some cases (e.g. COVID-19, which started in a small village called Wuhan, China, in late 2019), while serene environments promote good health and long life (Brusseau *et al*., 2019).

The biggest issue facing Nigeria is housing and it is common in Imo state precisely in Obinze (Emeka *et al*., 2025). With the arithmetic advancement of infrastructure, social amenities, and technical assistance, the nation's population continues to grow geometrically (Simon-Oke *et al*., 2020). Nigeria as a nation has been severely damaged by this. Tenants in numerous cities, including Abuja, Lagos, Port Harcourt, Owerri, Kano, and Onitsha, where housing is comparatively hard to come by, are happy to have an apartment in a public compound. Nigeria's housing shortage is the cause of this. For instance, homes in Obinze, Owerri, Imo State, are extremely costly. Because of the skyrocketing price of house rent in the present harsh economy, people preferably live in public apartments where they can easily afford the price. Unfortunately, things are not really getting better in Nigeria, and the worsening circumstances are being aided and abetted by the government (Simon-Oke *et al*., 2020).

Public compounds, in contrast to self-contained apartments or self-built residential complexes, are buildings inhabited by individuals who frequently share amenities like restrooms and toilets. People who live in cities often experience this. Due to a lack of funding for the construction of residential buildings, people live in public compounds. For several reasons, such as a shortage of housing or an inability to pay for private residences, they reside in public complexes. In addition to living in public housing complexes, there comes a time in life when we must share toilets and latrines. For example, children who go to school or the women who go to market, meetings, church and conventions at a specific hour might prefer to use the public facilities for the moment. This can make one use public toilets or restrooms for that main time. Living in a public compound is not a problem; rather, the sanitary conditions of the toilets, bathrooms, and urinary systems being used by these people living in these compounds could be of serious concern sometimes (Samuel *et al*., 2016).

The relationship between human health and the environment is complex, dynamic and multifaceted (Resnik & Portier, 2022). Having first-hand information of bacteriuria is very important. Individuals who reside within crowded compounds and use public toilets and urinary facilities should be informed that they are at a high risk of contracting infections and, as a result, must undergo periodic clinical laboratory tests. Schoolchildren who live in hostels, for instance, are forced to always use the school toilet and bathroom. Many people who live in public compounds become ill because of the casual and unsanitary way they use the bathrooms. Undoubtedly, information about the presence of bacteria suspected to be pathogenic in urine without one feeling the symptoms have regularly been heard by people and reported by the specialist in medical line.

As previously said, asymptomatic bacteriuria affects people of all ages, but women are more vulnerable because of their short urethra, which makes it easier for bacteria to enter the urinary system (Kant *et al*., 2017; Amala *et al*., 2021; Ibrahim *et al*., 2024). It is directly related to most

people's treatment of sanitation, which is the primary cause of illness. Individuals who have weakened immune systems to the point that they are unable to fight illnesses should stay away from unclean surroundings to prevent contracting diseases. Additionally, specific categories of individuals are not supposed to stay in public areas or use public facilities. Children, pregnant women, the elderly, and people with special health requirements should stay in a better environment that are more serene than public compounds (Amala *et al.*, 2021). People with unique health needs, for example, who have asymptomatic bacteriuria, are at risk of developing chronic and complicated urinary tract infections, stomach infections and diarrhea. Although many reports have not been heard about the prevalence of asymptomatic bacteriuria in the study area, there is a high tendency that some urine samples that may be collected and examined would have some traces of bacteria cells up to the bacteriuria colony forming unit. It is on this light that this research investigates critically the presence of asymptomatic bacteriuria of people living in public compounds in Obinze community.

MATERIALS AND METHODS

Study Area

This research was carried out in Obinze community. Obinze is located along Owerri-Port Harcourt Expressway, 3(Three and a half) km away from Avu in Southeastern part Imo state, Nigeria. It is part of Owerri West Local Government Area. The community of Obinze has six clans/villages but a clan known as Umuanunu got their own autonomous community and separated. It shares boundaries with Oforola, Avu, Ihiagwa, Eziobodo, Umuokanne, Nekede and Mbirichi. Some important places in Obinze include the headquarters of 34 Artillery Brigade Nigerian Army Base, Obinze Barracks, Owerri, Federal University of Technology Owerri and Redemption Estate. Obinze lies between latitude 5° 25′N and longitude 6° 50′E with an elevation of 61 m above sea level. The population of Obinze community is uncertain because it was not precisely captured during the 2006 nationwide population census in Nigeria. The settlement pattern of Obinze is linear especially in some villages located along the express road while others are clustered. Most buildings located in some villages of Obinze share public toilets while others live in self-contained apartment. Agriculture and trading are the major occupations of the inhabitants.

Instrumentation

200 urine samples collected from people living in public compound, sterile wide-mouth urine containers, marker, masking tape, matches sticker, conical flask, beaker, syringe, hand gloves, distilled water, cysteine lactose electrolyte deficient (CLED) media, microscope, incubator, centrifuge, autoclave, test tubes, test tube rack, petri-dishes and wire loop.

Determination of sample size

The size of the representative samples was 200 urine specimens. These samples were carefully collected randomly from households that live in public compounds at Obinze. The number of samples collected was determined using Cochran's formula for prevalence, experimental and epidemiological study. Nearest estimated proportion used for this study was that used by Asomug *et al.* (2021) in carrying out prevalence of asymptomatic bacteriuria among the pregnant women receiving antenatal care at Osisioma Ngwa, Aba Abia state.

Due to resource constraints, the estimated proportion of

$$N_0 = \frac{Z^2PQ}{D^2} = \frac{Z^2P(1-p)}{D^2}.$$

the study was 84.6% (0.846).

Where, N_0 = sample size, Z= Confidence level (at 95% confidence level, the Z score is 1.96)

P = Estimated proportion is 84.6% (0.846 which is maximum ability) q= 1-P (1- 0.846) = 0.154, D= Acceptable margin of error for estimated proportion (5%).

$$N_0 = \frac{(1.96)^2 \times 0.846 \times 0.154}{0.05 \times 0.05}$$

$$N_0 = \frac{0.500}{0.05 \times 0.05} = 200$$

Ethical Consideration, Sampling, collection and transportation of urine samples

Ethical consideration was obtained from the Department of Science Laboratory Technology, FUTO to pre-inform the residents of Obinze about the study one week before the visit. The target population was for those who were living in public compounds. During the collection of the urine sample, the residents were given questionnaire to fill in to sample their opinions about their knowledge, personal hygiene and the major risk factors associated with bacteriuria. Afterward, wide-mouth sterile urine containers were given to them and were instructed on the aseptic method of collecting the urine specimens for the experiment. Before the collection, each sterile urine bottle was labelled appropriately, and instructions were given to them all to avoid contamination. Consequently, the early morning, mid-stream, clean-catch urine samples were obtained from each of the respondents. After the collection of urine samples and the well-filled questionnaires the next day, urine samples were preserved by adding boric acid into them to inhibit the overgrowth of unwanted microorganisms, keeping the bacteriuria viable. They were transported to the Microbiology Laboratory of Science Laboratory Technology Department, Federal University of Technology Owerri where they were processed by subjecting them to different bacteriological analyses.

Urine specimen preparations

Five milliliters of each urine sample was poured in the test tubes, well labelled and were centrifuged at 2000 rpm for 15 minutes using the centrifuge. After the centrifugation, the pellets were separated from the

supernatants. The supernatants of the urine samples were discarded while the pellets were subjected to microscopic and bacteriological analyses.

Preparation of the culture media used for the study

The cysteine Lactose electrolyte deficient medium was prepared in line with the specification of the manufacturer and according to method used by Bale *et al.* (2023). The agar medium was autoclaved at 121°C for 15 minutes at 15 psi afterward allowed to cool. About 15-20 ml of the prepared molten agar was dispensed into disposable petri-dishes when the temperature had reduced to about 45°C. They were allowed to set and ready for inoculation.

Analysis of the urine sample

The 200 urine samples were examined using drop plate method. First, the urine sample was serially diluted. From a suitable dilution factor (10^{-5}), a 60µl of the urine sample was plated on cysteine-lactose electrolyte deficient (CLED) and spread uniformly (Bale *et al.*, 2023). The culture plates were incubated aerobically at 37°C for 24 hours. The plates without visible growth were further incubated for an additional 24 hours before they were discarded. The number and types of colonies grown in the media were recorded as being insignificant when samples gave a colony count of less than 105 CFU/ml. Samples with colony count equal to or greater than approximately 10^5 CFU ml of the urine samples were considered to have significant bacteriuria. Bacterial isolates were identified based on a combination of cultural, morphological and biochemical characteristics. The physiological characteristics of the colonies and their number on the culture plates were used as the basis for the counting, taking into consideration their dilution number. Counts were made from plates containing 18-300 colonies which were according to the standard guiding urine bacterial count (10 µl = 3-60 colonies, 20 µl =6-90 colonies etc.). The microorganisms isolated were subjected to gram staining and biochemical tests to confirm them.

Urinalysis with Combi 9 stripe

After processing the urine samples, the combi 9 stripes were inserted aseptically into the urine samples, afterward; they were observed and compared to the standard to determine the normality or abnormality of the following parameters: glucose, ketones, protein, blood, nitrite, pH, ascorbic acid, urobilinogen and bilirubin.

Gram reaction and Biochemical tests

The gram reaction was done according to the gram staining procedure and biochemical tests such as indole, coagulase, catalase, oxidase, citrate utilization and urease tests were done according to the methods used by Chessbrough, (2006), Maori *et al.* (2013) and Bashir, Muhammad, Sani & Kawo, (2016).

Determination of frequency of the bacteria isolates from the urine

The number of isolated bacteria was counted based on the number of urine samples processed and the frequencies were recorded. Furthermore, the percentage occurrences of the bacteria isolates were also evaluated accordingly.

RESULTS AND DISCUSSIONS

Distribution of the respondents by Socio-demographic characteristics

The socio-demographic characteristics of the respondents whose urine samples were used for the study of prevalence of bacteriuria examination are presented in Table 1. Majority of the respondents were within the age 31-35 years (60%) followed by those whose age was within 26-30 years (25.5%) while the average age of the respondents was 32.9 years. More females (65%) participated in the study and the average family size of the respondent under study was 6.3 but the most participating respondent fell within the family size of 4-6 (40%). People with no formal education (68%) recorded highest frequency and married people (80%) whose greater populations were Christians (90%) were part of the study.

Table 1: Socio-demography of the respondents (N = 200)

Variables	**Respondents**	
Age (Yrs.)	**Frequency (N)**	**Percentage (%)**
20-25	14	7
26-30	51	25.5
31-35	120	60
36-40	5	2.5
41-45	10	5
Total	200	100
Sex		
Male	70	35
Female	130	65
Total	200	100
Household size		

1-3	74	37
4-6	80	40
7-9	32	16
>14	4	7
Total	200	100
Educational attainment		
No formal education	136	68
Primary	48	20
Secondary	8	4
Tertiary	8	4
Total	200	100
Religion		
Christianity	180	90
Islam	16	8
African Tradition	4	2
Total	200	100
Marital Status		
Single	28	14
Married	160	80
Divorced	4	2
Separated	4	2
Widow/Widower	4	2
Total	200	100

Distribution of the respondents by Awareness, Personal Hygiene and Practices

Presented in Table 2 below are the responses to awareness of bacteriuria, personal hygiene and healthy practices. The outcome shows that those living in public compounds in Obinze were not aware of bacteriuria reflecting on the answer given when they were asked how they heard about the concept understudy. The bacteria load in patients that was classified asymptomatic bacteriuria is $\geq 10^5$CFU/ml, unfortunately only 1 (2%) out of the participating respondents got the answer correctly.

Concerning personal hygiene, (90%) responded that the private parts should be washed regularly and it is always good personal hygiene but did not know that it was inappropriate to do so with soap and water. Since majority of the respondents stayed in public compounds, 80% of the total participating respondents urinate in public urinary, followed by those who do that at the roadside. A good number of the participating respondents do not share sharp objects among themselves (88%) and have just one sexual partner (82 %) and practised protected sexual intercourse.

Table 2: Awareness of Bacteriuria, Personal Hygiene and Practices (n=200)

Awareness	**Responses**	**Frequency**	**Percentage**
Are you aware of bacteriuria?	**Aware**	**20**	**10**
	Not aware	180	90
How did you hear about it?	Medical Practitioner	16	4
	Friends/Neighbours	20	20
	Radio/TV	12	6
	Social media	20	10
	No means	120	60
What microbial load do we consider bacteriuria if the patient is asymptomatic?	10^3	180	90
	104	8	4
	$\leq 10^5$	8	4
	$\geq 10^5$	4	2

Personal Hygiene			
How often do you wash your private part?	Always	180	90
	sometimes	12	6
	Not often	8	4
Which of the following do you use while washing the private part?	Water only	40	20
	Soap	160	80
	Detergent	20	10
	Disinfectant	20	10
Where do you urinate?	Public urinary	160	80
	Personal urinary	4	2
	On the road	36	18
Practices and Risk factors			
Which of these is the best practice of cleaning the private part?	Water only	52	26
	Soap	132	66
	Detergent	8	4
	Disinfectant	8	4
Do you share shaving stick with someone?	Yes	24	12
	No	176	88
Do you practice unprotected sexual activity?	Yes	16	8
	No	184	92
How many sexual partners do you have?	1	164	82
	2	20	10
	3 and above	16	8

Distribution of the respondents by result of urinalysis test

Almost all the participants' urine test results were markedly normal, as shown in Table 3. Normal urine should be yellow light to deep amber in colour, free of blood, protein, ketone, nitrites, glucose, bilirubin, and urobilirubin, with a pH between 4.5-8. Fortunately, 82% to 99% of the urine sample was normal and correctly corresponded with the references. A urine test reveals the health status of various essential internal organs, such as the liver and kidney. The presence of certain substances at certain ranges in urine samples indicates that the liver and kidneys are not working properly. Urinalysis does not account for the presence of bacteria in the urine sample; instead, it reveals the health of the vital organs. Furthermore, most persons who had positive and abnormal urine findings should undergo additional testing to diagnose their liver and renal issues.

Table 3: Result from the urinalysis (N=200)

Parameters	**Frequency/Percentage**	**Characteristics**	**Reference**
Colour	**180(90%)**	**Amber and cloudy**	**Yellow (Light/deep amber)**
	20(10%)	Deep amber and cloudy	
Blood	180(90%)	Absent (negative)	Negative
	20(10%)	Present (positive	
Protein	188(94%)	Negative	Negative
	12(6%)	Positive	
Leucocyte	192(96%)	Negative	Negative
	8(4%)	Positive	
pH	196(98%)	5.0	4.5-8
	4(2%)	7.0	
Specific gravity	180(90%)	1.030	1.005-1.025
	20(10%)	1.025	

Ketone	176(88%)	Negative	None
	6(12%)	5+ (positive)	
Bilirubin	164(82%)	Negative	Negative
	36(18%)	Positive	
Nitrites	176(88%)	Negative	Negative
	24(12%)	Positive	
Urobilirubin	184(92%)	Normal (0.6mg/dL)	Normal (0.5-1 mg/dL)
	16(8%)	Abnormal (2.0mg/dL)	
Glucose	196(98%)	Negative (100mg/dl)	Negative (≤ 130 mg/dL)
	4(2%)	Positive (>130mg/dL)	

Distribution of the respondents by gram staining and biochemical tests

From the samples, the culture showed the growths of three-gram positive bacteria namely Pseudomonas aeruginosa, Enterococcus sp. and Staphylococcus aureus and two gram-negative bacteria (E. coli and Klebsiella sp.). Interestingly, about four urease positive bacteria were isolated. All the microorganisms identified were coagulase and catalase positive. Microorganisms that were coagulase positive presumably could haemolyze red blood cells. Four indole and oxidase negative microorganisms were also observed.

Table 4: Identification of the urine isolates through gram staining and Biochemical tests

Test	**E. coli**	**Klebsiella spp.**	**Enter. spp.**	**P. aeruginosa**	**S. aureus**
Coagulase	**-**	**-**	**-**	**-**	**+**
Catalase	+	+	+	+	+
Citrate	-	+	+	+	+
Indole	+	-	-	-	-
Urease	-	+	+	-	+
Gram Staining	-	-	-	-	+

Key: +: Positive -: Negative, E. coli: Escherichia coli, P. aeruginosa: Pseudomonas aeruginosa, S. aureus: Staphylococcus aureus, Enter. spp. Enterococcus spp.

Distribution of the respondents by number of isolates, frequency and Percentage occurrence

The total number of bacteria isolated from the urine samples collected from respondents in Obinze was seventy-five and presented in Table 5 below. Out of the isolated bacteria, Escherichia coli (56%) was the highest occurring bacteria in the urine sample followed by Staphylococcus aureus (28%), Enterococcus spp. (6.7%), Pseudomonas aeruginosa (6.7%), and Klebsiella pneumoniae (2.6%). Despite the isolation of these microorganisms, the patients were completely asymptomatic. The distribution of the respondents by the number of bacteria isolates is also demonstrated using the bar chart (Fig 2). The chart shows the distribution by population of the bacteria in the urine samples collected.

Table 5: Bacterial isolates from the urine samples number of isolates, frequency and Percentage occurrence

Isolates	**Bacterial isolates**	**Frequency**	**Percentage (%)**
1	**Escherichia coli**	**42**	**56**
2	Staphylococcus aureus	21	28
3	Enterococcus spp.	5	6.7
4	Pseudomonas aeruginosa	5	6.7
5	Klebsiella spp.	2	2.6
	Total isolates	75	100

Discussion

The socio-demographic features of the respondents whose urine samples were used to assess the prevalence of bacteriuria were noted. Many responders (60%) were between the ages of 31 and 35, followed by those between 26 and 30 (25.5%), with an average age of 32.9 years. More females (60%) participated in the survey, and the average family size of the respondents was 6.3, however most of the respondents (68%) had a family size of 1-3. Those with no formal education (68%) had the highest frequency, followed by married people (80%), the majority of whom were Christians (90%). The socio-

demographic characteristics of this research were not consistent with the report of Agarwal *et al.* (2021) and Olajide *et al.* (2023) who only monitored the prevalence of asymptomatic bacteriuria in school students aged 16-30 years. The discrepancy came from the group of people selected for the research. While this research covered a wider range of people, Agu and other group of authors studied tertiary institution students.

Information gathered from the knowledge about bacteriuria in Obinze showed that people were not aware of the conditions. If this could be directly linked to the low educational attainment, wider coverage and surveys could reveal it. Therefore, enlightenment and awareness about personal hygiene, risk factors, and best health practices can help combat urinary tract infections. It is shocking to know that 90% of the total populations were not aware of bacteriuria while only 10 % had knowledge about the concept understudy. Recognizing the presence of harmful bacteria in a urine sample might be one of the first steps in understanding and avoiding the risks of UTI. Emphysematous cystitis, renal failure, bacteremia, and papillary necrosis are all possible outcomes of a complex urinary tract infection. Urethritis, arthritis, conjunctivitis, cervical, pelvic inflammatory disease, and bacteremia are also complications that can arise when asymptomatic bacteriuria becomes critical (Al-Madboly & Gheida, 2017). The report of Al-Madboly and Gheida. (2017) demonstrated that some strains of Neisseria gonorrheae have been implicated in cases of urethritis. Unfortunately, persons who stated they had neither heard, nor had friends/neighbors been higher (60%) compared to those who had heard it from a medical practitioner, church, radio, television, magazine, or the nearby health center. Unfortunately, those who were unaware of the bacteria load in patients with asymptomatic bacteriuria of 103 CFU/ml had a higher rate (90%). Asymptomatic bacteriuria is a situation in which a urine culture shows the presence of more than 100,000 bacteria per milliliter, yet the patient does not have symptoms of a urinary tract infection (Maori *et al.*, 2013; Nwokorie *et al.*, 2015; Schaeffer, 2018; Ofuru *et al.*, 2022). On the other hand, the knowledge of the respondents about personal hygiene was encouraging. They were also sexually disciplined, knowing that it could be a risk factor to trigger asymptomatic bacteriuria into symptomatic bacteriuria. Furthermore, the results of the urinalysis conducted on the urine samples of the patients indicated that a good percentage (82% to 99%) of the respondents had healthy, functional kidneys and livers. It was only 1–18% that had one abnormal level of parameters or the other. During urine formation, thorough screening was usually done in the kidney. It is expected that all the vital nutrients, such as glucose, nitrites, ascorbic acid, protein, etc., should be reabsorbed into the blood stream. Therefore, the presence of the substances in the urine sample shows incomplete ultrafiltration or reabsorption (Theodorou *et al.*, 2021; Betty, 2021).

Despite the normality of the urine using combi 9, the urine samples, when cultured on cysteine lactose electrolyte deficient agar, showed the growth of totality of 75 bacteria representing three gram positive and two-gram negative pathogens. Out of the isolated bacteria, Escherichia coli (56%) was the highest occurring in the urine sample followed by Staphylococcus aureus (28%), Enterococcus spp. (6.7%), Pseudomonas aeruginosa (6.7%), and Klebsiella pneumoniae (2.6%). It was surprising that the respondents were all asymptomatic and moved about healthy outwardly. Alo *et al.* (2012), Ogefere & Oluka, (2013), Nwosu *et al.* (2015), Nwokorie *et al.* (2015), Verma *et al.* (2016), Tigabu *et al.* (2020) and Agu *et al.* (2020) isolated similar microorganisms in their researches. Coincidentally, each of these authors recorded the highest prevalence of E. coli in the urine samples tested. Escherichia coli was the dominant bacterium in the causation of urinary tract infections. The bacterial isolates came from the urinary bladder of the women and men as the samples were collected aseptically into sterile screw-capped bottles and analyzed aseptically in a hygienic environment. Harbouring E. coli and Enterococcus sp. can be very dangerous. Uropathogens harm the urinary system and cause problems with the bladder, urethra, or kidneys (Samuel *et al.*, 2016). Escherichia coli, Klebsiella pneumoniae, and Proteus mirabilis are examples of microorganisms that have been critically documented when discussing urinary system disorders (Lee *et al.*, 2020). According to Lee *et al.* (2020), these microbes, for example, can enter the bladder and deplete the microbiota population, producing interstitial cystitis. In women, the urinary tract is near the reproductive system and anus. This makes cross-transmission easier.

CONCLUSION

A person may appear healthy on the outside, yet on the inside, may be potentially ill. Urinary tract issues should be addressed seriously and not treated lightly. Thus, patients with asymptomatic bacteriuria belong to this category. Asymptomatic bacteriuria is the precursor to symptomatic bacteriuria. For a patient to become symptomatic, the organs must have been seriously harmed by a bacterial infection. Many people who have these pathogens in their bodies are unaware of them and only become aware when their bodies have been entirely weakened, rendering their immune system badly compromised. In conclusion, the detection of Escherichia coli, Staphylococcus aureus, Enterococcus spp., Pseudomonas aeruginosa, and Klebsiella pneumoniae in urine samples revealed that the residents of the community should be sensitized on personal hygiene, bacteriuria and frequent visit to clinical laboratories for tests. This research is therefore recommending that wider public health and epidemiological research should be carried out in community to unravel the information properly because it will aid in the prevention of urogenital associated infections. Regular sanitation and personal cleanliness can be effective techniques for avoiding the presence of germs in urine samples, as urine should generally be

sterile and public health agencies should go to all the communities in Owerri West for proper sensitization. Government should also help the citizenry with better housing amenities.

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