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## Patients and Patients' Relatives Perception of Cleanliness in Radiology Department of a Nigerian Teaching Hospital

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### Abstract:

**Background:** Cleanliness and dirt are a dichotomy to categorize a particular environment especially hospital settings in which cleanliness pave a great linkage to patient satisfaction on quality of care and reduction of infection. Dirt creates negative thought on the quality of services being rendered to patients in the hospital environment.

**Objectives:** To assess the perception of patients and their relatives on the level of cleanliness in radiology department of Usmanu Danfodiyo University Teaching Hospital (UDUTH) Sokoto and to determine which amongst the diagnostic rooms is the cleanest (Computed Tomography (CT) room, Routine X-rays room or contrast exams room (fluoroscopy)).

**Materials and Method:** A descriptive cross-sectional study was conducted, 100 questionnaires were distributed to the respondents of which 66 in Routine xray room, 23 in CT suit and 11 in contrast examination room. Out of the 100 questionnaires nine were not returned and the remaining 91 were analysed. **The questionnaire contains fifteen statements in total apart from the socio-demographic component. The count of responses was considered and for each type of response (SA, A, N, D, and SD) the percentage were calculated** using statistical package for social sciences (SPSS) version 23.0.

**Results:** Sixty percent of the respondents were patients while 40% were relatives of patients that were critically ill. The modal age range of the respondents was 25-34years, 58% were married, while 48.4% were civil servants. The result of our study shows that the respondents have adequate knowledge on cleanliness with a mean score of 4.3, they perceived radiology department as a clean environment for diagnosis and visitation but need further improvement. According to the findings, CT room was the cleanest (87.0%) followed by contrast examination room 64.0% and routine X-rays room was the least 47.0%. It also revealed that lack of manpower is the cause of inadequate sanitation.

**Conclusion:** Radiology Department in Usmanu Danfodiyo University Teaching Hospital is clean and the CT suit is the cleanest.

**Keywords:** Patients, Infections, Perception, Cleanliness and Radiology.

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### Introduction

Cleanliness is the state of being free of dirt or in other words the state of being clean, which plays a major role in establishing cultural values in relation to social class, humanitarianism and cultural imperialism (1). High cleanliness of hospital environment is necessary to ensure safe working atmosphere for the medical staff, patients and others who pay a visit to the hospital (2). Cleanliness and hygiene are important not only from the public health point of view, but also from socioeconomic development of the society and there is no doubt to say in this era that cleanliness dictates the human's life, for that, cleanliness alone reduces the severity of moral judgment by removing the feelings of intense dislike of the environment (3).

Cleanliness and dirt are a dichotomy to categorize a particular environment especially hospital settings in which cleanliness pave a great linkage to patient satisfaction on quality of care and reduction of infection while dirt create a negative thought of and disgust on the quality of services being rendered to them in the hospital environment (4). Though cleanliness does not guarantee total elimination of infectious agents it however, reduces the infectiousness of the agents and improve the confidence, hope and reassurance in the mind of patients and their relatives (4).

The issue of cleanliness has a cultural tradition studied in many fields such as anthropology and history. This is a theme that has an undeniable social and cultural dimension. Even though it's definition as cleanliness or dirt has varieties of understanding within the same culture. The cultural influence concerns not only the frequency and quality of hygienic habits but also their private or collective practices (5). In contemporary Western culture, for instance, hand washing is a private individual practice, whereas in the ancient Greece and Rome, it may even be considered as a collective ritual (5). Some daily cleaning practices are quite common events in every culture and tradition, even if some differences in the frequency and quality of practice and in the significance attributed to them do exist. We can recognize cultures in which cleanliness is considered as a basic norm and custom for private and public life and as a point of distinction between individuals (6).

We observed based on practical experience that lack of confidence and trust patients have on

To the best of our knowledge study about patients perception of cleanliness has not been conducted in Radiography Department Usmanu Danfodiyo University Teaching Hospital (UDUTH) Sokoto. This study aims to evaluate the patients and patients' relative's perception of cleanliness in radiology department and to determine which amongst the diagnostic rooms is the cleanest.

## MATERIALS AND METHODS

### Ethical consideration

The ethical clearance to conduct this study was obtained from the ethical clearance committee of the Usmanu Danfodiyo University Teaching (UDUTH), Sokoto with clearance certificate number UDUTH/HREC/2018/No.689.

### Study area

The study area (UDUTH Sokoto) is a tertiary teaching hospital commissioned in 1989 and a referral hospital/ regional center for neurosurgery. The department of Radiology has sixteen consultants, eighteen resident doctors, twelve senior Radiographers, 12 intern Radiographers and ten cleaners as at the time of this study.

### Study design

A descriptive cross-sectional study conducted in the diagnostic rooms of Radiology department Usmanu Danfodiyo University Teaching Hospital, Sokoto which covers in/outpatients and their relatives coming to the department for diagnostic examinations (routine x-rays, contrast examination and CT scan) from May to August 2018.

### Inclusion and exclusion criteria

Irrespective of age/gender, patients and their relatives coming for routine x-rays, contrast examination and Computed Tomography (CT) scan were recruited/included while patient coming for investigation(s) other than the ones mentioned above were excluded.

### Methods/instruments of data collection

A structured questionnaire was used. The questionnaire was divided into four (4) sections (A-D), with section A containing the sociodemographic data of the respondents, section B containing statements on effective cleanliness, section C containing statements on perception of cleanliness, and section D containing questions on UDUTH management. All the components were rendered on a five-point Likert Scale Rating of Strongly Agree (SA), Agree (A), Neutral (N), Disagree (D) And Strongly Disagree (SD).

### Validity and Reliability of the Instrument

The validity of the instrument was tested through a pretest measure, and Cronbach's alpha coefficient was used to determine the reliability of the instrument.

### Method of Data Analysis

The questionnaire contains fifteen statements in total apart from the socio-demographic components. The count of responses was considered and for each type of response (SA, A, N, D, and SD) the percentage were calculated using SPSS version 23.

## RESULTS

Out of the 91 respondents that filled and returned the questionnaires, 63.0% were male and 37.0% were female, 60.0% were patients while 40.0% were patients' relatives. Majority of them were within the age range of 25-34 years accounting for 37.4%. About 41.0% were single, 58.0% were married while 1.0% were divorced. Also 37.4% were students, 48.4% were civil servants, 4.2% were housewives and 10.0% have other occupation as depicted in Table 1.

**Table 1:** Socio-demographic characteristics of the Respondents

Variables	Frequency	Percentage(s) %
1. Sex		
Male	57	63.0
Female	34	37.0
2. Identity		
Patient	55	60.4
Patient relative	36	39.6
3. Age		
15 –24	25	27.5
25 –34	34	37.4
35 –44	19	20.9
45 –54	10	11.0
55 and above	03	3.20
4. Marital status		
Single	37	41.0
Married	53	58.0
Divorced	01	1.00
Widow	00	0.00
Separated	00	0.00
5. Occupation		
Student	34	37.4
Civil servant	44	48.4
Farmer	00	0.00
Housewife	04	4.40
Others	09	9.80
Total	91	100

Table 2 shows that all the respondents agreed on all the statements with grand mean score of 4.3 and as such, all the respondents had adequate knowledge on effective cleanliness.

**Table 2:** Knowledge on Effective Cleanliness amongst the Respondents

S/N	Statements	Responses					X	Remark
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree		
6	Cleanliness is the act of being tidy and hygienic.	70	17	4	0	0	4.7	Agreed
7	If environment is clean and tidy, it increases the level of trust people have on that environment and reduces the feelings of contaminations and infections.	80	8	3	0	0	4.8	Agreed
8	If a place is clean, it means that, there is total eradication of germs and infectious agents.	11	50	5	5	20	3.3	Agreed
9	Adopting hand washing with soap after work is also an act of maintaining good hygiene	80	9	2	0	0	4.9	Agreed
10	Untidiness has connection with the way people address a particular environment.	21	52	0	10	8	3.7	Agreed
<b>Grand Mean Total</b>							<b>4.3</b>	<b>Agreed</b>

Table 3 shows that majority of the respondents agreed on the statement number 12, 13,14 and 15, concerning perception of cleanliness in Radiology with a grand mean score of 3.7 and disagreed on item number 11. Which indicates that majority of the respondents considered radiology department as a clean place but need further improvement.

**Table 3:** Perception of Cleanliness in Radiology by the Respondents

SN	Statements	Responses					X	Remark
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree		
11	Radiology department is not clean and safe for visitation and needs improvement in order to create more hygienic atmosphere for patients and their relatives.	10	12	0	20	49	2.1	Disagreed
12	Radiology department is clean and safe for patients and their relatives for visitation, but need a further improvement.	28	26	0	22	15	3.3	Agreed
13	Lack of man power and aged cleaners are the cause of inadequate sanity.	49	20	0	13	9	4.0	Agreed
14	Tidiness in radiology will create confidence in patients and increase their level of satisfaction with healthcare delivery.	66	11	0	8	6	4.4	Agreed
15	Patient turn out will be higher if patients and their relatives are satisfied with the level of cleanliness in radiology.	69	12	0	6	4	4.5	Agreed
<b>Grand Mean Total</b>							<b>3.7</b>	<b>Agreed</b>

Setting a standard by using a Likert scale on 5 point, the grand mean is

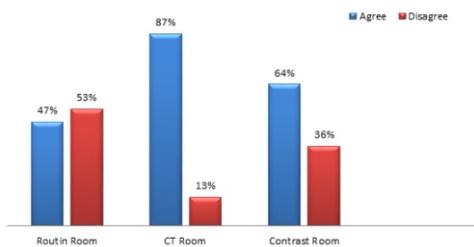
$$Gm:- X = \frac{\sum X}{N} = \frac{5+4+3+2+1}{5} = 3$$

Total number of items

Therefore, any response from 3 and above is considered agreed while any other response less than 3 is considered disagreed.

Table 4 shows that the respondents agreed on all the questions concerning UDUTH management's ways of handling cleanliness with a mean score of 4.3.

Figure 1 shows that CT room has the highest percentage of cleanliness (87.0%), followed by Contrast Examination room (64.0%) and Routine room has the least percentage (47.0%).



**Figure 1:** Frequency of Cleanliness in Radiology Rooms

SN	Statements	Responses					X	Remark
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree		
16	Department' governing body should adopt a means of proper sanitation in order to achieve high quality of healthcare delivery.	69	18	2	1	1	4.7	Agreed
17	Increasing man power can decongest work load on cleaners in order to attain high standard of cleanliness.	56	23	5	12	3	4.5	Agreed
18	Proper and strict supervision of cleaners by senior staff can improve the level of cleanliness.	48	34	6	2	1	4.4	Agreed
19	Intervention by hospital management can further improve level of cleanliness.	20	60	5	3	3	4.0	Agreed
20	Providing patients with a way of communicating to the management on the level of cleanliness of radiology will improve service delivery and patients satisfaction in the department.	18	69	1	2	1	4.1	Agreed
<b>Grand Mean Total</b>							<b>4.3</b>	

### Discussion

The prevalence of perception of cleanliness in this study 3.7 was higher than the one obtained from a similar study conducted in Southeastern Nigeria with a grand mean score of 2.4 (10). This may be as a result of cultural background. Also, this study was able to lay the foundation to test for patients and patients' relatives knowledge on cleanliness before they perceive what cleanliness is all about, the study conducted in south eastern Nigeria did not lay the basis of testing patients knowledge on cleanliness. In this study majority of patients and patients' relatives knows what cleanliness entails which gives a grand mean of 4.3. Our study also revealed that intervention by hospital management is a way forward to increase on the standard of cleanliness in the study area. Cleanliness contribute to the trust patients have for services rendered, as untidy environment is seen as a source of potential breeding place for infectious agents. Majority of the respondents know what effective cleanliness is all about. In this study and other literatures cited, majority of hospital settings have problem of cleanliness (10,11), the standard is falling below the expectation which was revealed in a study conducted in Bangladesh where only 7% out of 112 respondents were pleased with level of cleanliness in hospital (11). This study also revealed that inadequate sanity is due to lack of manpower which is supported by a study conducted in Bangladesh (12). Where respondents strongly agreed that this factor have linkage with cleanliness, which is also revealed by a study in a NHS UK13 which suggested that appearance of the environment is the most important factor which could be achieved by having enough manpower. Moreover, a study on patients'

satisfaction on cleanliness and other factors at hospitals in India (14) concluded that the perceived quality of cleanliness and other factors at the hospitals is only marginally favorable, leaving much scope for improvement which is in line with this study which also suggests improvement.

### Conclusion

Conclusively, our study revealed that radiology department UDUTH Sokoto was a clean environment and the CT suit is the cleanest among the diagnostic rooms studied.

### Conflict of Interest

The authors declare no conflict of interest.

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