

Comprehensive Assessment of Hygiene Factors Contributing to Poor Healthcare Facility Conditions in South Sudan: Implications for Public Health

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ABSTRACT

Poor hygiene practices in healthcare facilities contribute significantly to the spread of diseases and compromise public health outcomes, especially in resource-limited settings like South Sudan. This study presents a comprehensive assessment of the multifaceted factors influencing hygiene conditions in selected healthcare facilities in South Sudan. Using a mixed-methods approach, data were collected from Juba Teaching Hospital, Bentiu State Hospital, Nyal Primary Health Care Centre, and Ganyliel Primary Health Care Centre. The study population included medical professionals, hospital staff, patients, and visitors. The results revealed a range of individual, environmental, and health facility factors contributing to poor hygiene. Individual behaviors such as inadequate hand washing, improper waste disposal, and lack of infection control awareness were identified as significant contributors to poor hygiene. Environmental factors such as inadequate sanitation infrastructure, unreliable water supply, and improper waste management practices were also found to exacerbate hygiene challenges. Moreover, health facility factors including overcrowding, inadequate staffing, and limited waste disposal resources further compounded the issue. Statistical analyses demonstrated significant correlations between these factors and poor hygiene outcomes, underscoring the complexity of the problem. Recommendations for improving hygiene standards encompassed comprehensive training programs, infrastructure upgrades, robust infection prevention policies, community engagement initiatives, and quality improvement measures. By addressing these multifactorial challenges, healthcare facilities in South Sudan can enhance hygiene standards, mitigate disease transmission, and improve overall public health outcomes. This study contributes valuable insights to the global discourse on healthcare hygiene and underscores the urgent need for tailored interventions in resource-constrained settings to ensure safe and hygienic healthcare environments.

Keywords: Poor hygiene, waste management, South Sudan, Health care, Respondents, Environmental

INTRODUCTION

Poor hygiene can lead to the spread of diseases like cholera, smallpox, and typhoid which weakens the body and increases resistance, but these can be avoided with proper sanitation, hygiene, and access to clean water. Sanitation, as used globally, refers to the gathering, handling, and disposal of solid waste, sewage, and human waste [1]. Poor waste management is a major cause of poor health, sanitation, environmental pollution, and degradation. Urban communities and stakeholders, including NGOs and community-based organizations, should work together to address this issue. Public health as the science of preventing disease, prolonging life, and improving physical and mental health through community effort and education. The goal is to create a post-impact environment that sustains public health, especially in South Sudan where environmental health is limited [2]. The Human factors responsible for poor hygiene at Juba Teaching Hospital, Bentiu State Hospital, Nyal Primary Health Care Center, and Ganyliel Primary Health

Care Center include (a) unsafe drinking water which are laden with pathogens such as bacteria, viruses and parasites can lead to the spread of waterborne diseases, affects proper hand washing [3], affects food preparation as well as maintaining clean and functional toilets and hand washing facilities is a challenge [4], (b) lack of proper education and awareness [5, 6] (c) lack of personal hygiene practices including improper hand washing, coughing and sneezing techniques [7, 8]. (d) improper waste disposal by individuals [9, 10], (e) non-compliance with infection prevention protocols such as wearing personal protective equipment (PPE) or practicing good respiratory etiquette [11], (f) non-compliance with hospital policies [11, 12]. The environmental factors responsible poor hygiene include (a) open air burning of wastes (pollution) in some hospitals release toxic and dangerous pollutants such as furans, dioxins and volatile organic compounds (VOCs) into the atmosphere which have potential to worsen pre-existing

respiratory problems, trigger asthma, new cases and have accelerated the onset of lung diseases [11,13,14], (b) poor quality wastewater [15, 16], (c) inadequate water supply [10] (d) inadequate waste management [12, 17], (e) lack of proper sanitation facilities [18], (f) unsafe and unsanitary surroundings [3, 13]. The health facility factors responsible for poor hygiene in selected healthcare facilities in South Sudan include (a) overcrowding of patients can increase the number of patients in confined spaces, increasing the spread of infectious diseases between individuals, close proximity and

limited ventilation can lead to illness transmission of airborne viruses such as respiratory viruses has been weakened. This puts patients, healthcare workers and visitors at high risk of infection and spread of the disease [15, 17] (b) limited number of cleaners/sanitation Staff [19], limited number of waste disposable bins/cans [4, 19]. This study therefore aims at assessing the human and environmental factors that caused poor hygiene in health care facilities in South Sudan such that appropriate recommendations could be sought.

METHODOLOGY

Research Design

Descriptive survey design is used to collect data that relates to a fact as it appears at a given point in time; hence, there is no change in the independent variables. In this study, the respondents' perceptions of the environmental and human factors contributing to poor hygiene in selected hospitals were assessed. Since effective hygiene in hospitals is a result of both human and environmental factors, the cross-sectional survey research design examined one variable at a time and concentrated on the relationship between the variables at a given point in time related to those factors. In order to fully grasp the subject, this study combined qualitative and quantitative approaches.

Study Population

The population of four hospitals—Juba Teaching Hospital (JTH), Bentiu State Hospital (BSH), Nyal Primary Health Care Centre (PHCC), and Ganyliel Primary Health Care Centre (PHCC)—consists of 9637 individuals, including physicians, nurses, other hospital staff (hygienists and hygienists), patients, and hospital visitors, according to the South Sudan Ministry of Health report (2022).

Sample Size

The study's sample size of actual respondents was determined using the Sloven methodology. The sample size of 384 responses, was selected from the 9637 people who made up the target group.

Table 1: Research Population and Sample Size

Category	Hospital	Target population	Source	Sample size	Sampling techniques
Medical doctors	JTH	70	Department of accounts and statistics (2023)	15	Purposive sampling
	BSH	12		06	
	NPHCC	02		02	
	GPHCC	01		01	
Nurses/ midwives	JTH	46	Department of Nursing (2023)	21	Purposive sampling
	BSH	42		17	
	NPHCC	13		04	
	GPHCC	06		05	
Other hospital staff members (cleaners and sanitary officers)	JTH	143	Human resource department (2023)	23	Simple random sampling
	BSH	99		47	
	NPHCC	14		10	
	GPHCC	08		07	
Patients	JTH	1320	Department of accounts and statistics (2023)	18	Simple random sampling
	BSH	50		14	
	Nyal PHCC	57		19	
	Ganyliel PHCC	6964		48	
Visitors	JTH	600	Security information desk (2023)	64	Simple random sampling
	BSH	150		48	
	Nyal PHCC	35		12	
	Ganyliel PHCC	05		03	
Total		9637		384	

Key

JTH= Juba Teaching Hospital

BSH= Bentiu state Hospital

NPHCC= Nyal Primary Health care Centre

GPHCC= Ganyliel Primary Health care Centre

Purposive Sampling

Healthcare personnel were chosen by purposeful sampling since it was discovered that they possessed significant knowledge about people and the environment that contributed to inadequate sanitation, hygiene, and public health.

Random Sampling

Respondents were chosen at random from the target population. To guarantee that respondents had an equal chance of standing, hospital hygienists and hygienists were chosen at random.

Sources of Data

Primary Data

Primary data was gathered utilizing interview guides and questionnaires.

Secondary Data

Secondary data were gathered from hospital records and various books, journals, policy documents, and other publications on environmental and human factors contributing to poor hygiene. New data were gathered from various electrical gadgets and the internet.

Self-administered Assessment

Surveys:

Respondents were expected to complete closed-ended questions on their own, with little to no supervision, according to the guidelines provided [20].

Interviews Guide:

Structured interviews conducted in the local languages were used to collect the data.

Documentary Review:

The archives and articles of the library were consulted in order to gather sufficient information about the factors that contribute to poor hygiene in individual hospitals within Juba Teaching Hospital, as well as the factors related to health facilities that contribute to poor hygiene in Juba Teaching Hospital, to supplement the opinions from the surveys and interviews.

Procedures for Gathering Data

The letter of introduction was given by Kampala International University's Directorate of Higher Education and Research. Purposive sampling was utilised to choose qualified respondents from the list of selected hospitals once information was gathered. An informed consent form was provided to the respondents, who were asked to sign it after it was explained what the study's purpose was. Respondents were requested to refrain from

answering any questions on the questionnaires in order to completely respond. The questionnaires were collected within a fortnight of the distribution date. To ensure that every question was answered, each returning questionnaire was checked.

Data Analysis

Analysis of quantitative data

The raw data obtained from the questionnaire were coded and formatted. Using the Statistical Package for Social Scientists (SPSS) software programme, labelled data were examined, and statistically analyzed to produce descriptive and inferential statistics.

Analysis of Qualitative Data

The study analyzed qualitative data (interviews) from hospitals in Juba, including medical and non-medical staff members. It involved classification, open, axial, selective coding, and deciphering fundamental meanings. The data was reorganized and edited for comprehensible language.

The validity and dependability of the tool

The instrument's validity

The validity of the study instruments was established using the following formula. The Content Validity Index (CVI) is calculated as follows: (Number of valid questions) / (Total number of questions in the questionnaire).

An instrument is deemed valid if its overall Content Validity Index (CVI) is equivalent to the average acceptable index of 0.7.

The Instrument's Dependability

The instrument's dependability was determined through the use of retests according to Roger [21]. The instrument's dependability was assessed using Cronbach's reliability test. According to Stevens [22], there are five categories for Cronbach's alpha value of quality: good (0.9–0.8), acceptable (0.7–0.8), questionable (0.6–0.7), good (0.5–0.6), and acceptable (0.5 a lower). It is considered appropriate to interpret Cronbach's values for internal consistency and audit, which should range from 0.75 to 0.8, respectively [22].

Moral Points

The management of the chosen South Sudanese healthcare facilities gave complete information and permission to conduct the study. Making sure the research ethics protocols were followed was the researcher's responsibility.

RESULTS

The information in Table 2 below indicates that 233 respondents fully completed and returned the 384 questionnaires that were distributed at the

Juba Teaching Hospital, Bentiu State Hospital, Nyal Primary Health Care Centre, and Ganyliel Primary Health Care Centre.

Table 2. Response Rate

	Frequency	Percentage (%)
Returned	233	60.80%
Not returned	151	39.32%
Total	384	100

Table 3 showed that 96 (41.20%) of the respondents were women and 137 (58.79%) were

men. This indicates that there were more males than females.

Table 3: Gender of respondents

Response	Frequency	Percentage
Male	137	58.80%
Female	96	41.20%
Total	233	100.0

Table 4 showed only 6 (5%) were classified as others, such as tertiary, while 16 (13%) were certificate holders, 44 (35%) were diploma holders,

53 (42%) were bachelor's degree holders, and 8 (6%) were master's degree holders.

Table 4. Respondents level of Education

Response	Frequency	Percent
Short course Certificate	19	8.15%
Diploma	56	24.03%
Degree	84	36.05%
Masters	48	20.60%
PhD	26	11.15%
Total	233	100.0

Table 5 showed that 58 (46%) of the respondents were between the ages of 19 and 25, 44 (35%), and 17 were between the ages of 31 and 45. The last

category, 46 and above, had 8 responses (6%). This indicates that the majority of responders were in the age range of 20 to 35.

Table 5. Age of respondents

Response	Frequency	Percentage
20 – 29	78	33.47%
30 – 39	104	44.63%
40 – 49	42	18.02%
50 years and above	09	3.86%
Total	233	100.0

Table 6: Showing Responses to questionnaires on the Individual factors responsible poor hygiene, sanitation and public health in selected healthcare facilities in South Sudan

Individual factors	SD	D	NS	A	SA	Total
Statements	%	%	%	%	%	
The improper waste disposal by individuals in Juba Teaching Hospital can contribute to poor hygiene, sanitation, and public health.	(12) 8.21%	(25) 17.12%	(10) 6.8%	(47) 32.19%	(52) 35.61%	233
Individuals in the hospital including patients, visitors, and healthcare workers have failed to comply with infection prevention protocols	(12) 8.21%	(10) 6.84%	(20) 13.69%	(35) 23.97%	(69) 47.26%	233
The lack of awareness and education may result in a lack of knowledge regarding proper hygiene practices. Individuals may not understand the importance of hand hygiene, personal cleanliness, or proper waste disposal methods.	(15) 10.27%	(18) 12.32%	(30) 20.54%	(36) 24.65%	(47) 32.19%	233
If the water used for washing fruits, vegetables, or utensils is contaminated, it can lead to foodborne illnesses	(17) 11.64%	(22) 15.06%	(20) 13.69%	(54) 36.98%	(43) 29.45%	233
Increased health issues can be a result of poor hygiene, sanitation, and public health practices in Juba Teaching Hospital.	(00) -	(00) -	(15) 10.27%	(56) 38.35%	(75) 51.36%	233

NB: According to the table above, **SD** - Strongly Disagree, **D**-Disagree, **NS**- Not sure, **A**-Agree &**SA**- Strongly Agree.

Table 7: The Relationship between Individual factors on Poor hygiene Correlations

		Individual factors	Poor hygiene
Individual factors	Pearson Correlation	1	-0.727**
	Sig. (2-tailed)		.000
	N	133	133
Poor hygiene	Pearson Correlation	-0.727**	1
	Sig. (2-tailed)	.000	
	N	133	133

** . Correlation is significant at the 0.01 level (2-tailed).

Table 8: Regression Results Showing the influence of Individual factors in promoting Poor hygiene in selected healthcare facilities in South Sudan.

R square=0.393, F= 154.227, P=0.000

	Standardized Coefficients	Sig.
	Beta	
Individual factors	0.627	0.000

Tables 7 and 8 showed that individual factors and poor hygiene are positively and strongly

connected ($r = -0.727$, $p < 0.05$)

Table 9: Showing Responses to questionnaires on the environmental factors responsible poor hygiene, sanitation and public health in selected healthcare facilities in South Sudan

	SD	D	NS	A	SA	Total
Statements	%	%	%	%	%	
The presence of unsafe and unsanitary surroundings in and around the hospital, such as stagnant water, open sewage, or unclean surroundings, can contribute to the proliferation of disease-carrying vectors and contaminants.	(16) 10.95%	(25) 17.12%	(12) 8.21%	(51) 34.93%	(42) 28.76%	233
Lack of a green environment and afforestation has influenced poor hygiene, sanitation, and public health in the hospitals	(14) 9.58%	(23) 15.75%	(53) 36.30%	(45) 30.82%	(11) 7.53%	233
Improper waste management practices, such as insufficient waste disposal bins, inadequate waste segregation, or limited waste collection services, can contribute to poor sanitation and public health	(00) -	(18) 12.32%	(72) 49.31%	(40) 27.39%	(16) 10.95%	233
We practice the activity of open air burning of waste which has however contributed to poor hygiene, sanitation, and public health in the hospital.	(68) 46.57%	(26) 17.80%	(52) 35.61%	(00) -	(00) -	233
Insufficient access to clean and reliable water supply can hinder proper hand hygiene practices, cleaning procedures, and waste management	(77) 52.73%	(10) 6.84%	(12) 8.21%	(39) 26.71%	(08) 5.47%	233
The presence of unsafe and unsanitary surroundings in and around the hospital have led to the proliferation of disease-carrying vectors and contaminants	(00) -	(18) 12.32%	(72) 49.31%	(40) 27.39%	(16) 10.95%	233

NB:SD - Strongly Disagree, **D**-Disagree, **NS**- Not sure, **A**-Agree &**SA**- Strongly Agree

Table 9 showed that 34.93% (51) agreed with the statement, followed by 28.76% (42) who strongly agreed with it; 17.12% (25) disagreed with it, 10.95% (16) strongly disagreed with it, and only 8.21% (12) were unsure; The majority of study participants, or 49.31% (72) were unsure about the claim that improper waste management practices, such as a lack of waste disposal bins, insufficient waste segregation, or limited waste collection services, can contribute to poor sanitation and public health. These participants were followed by 27.39% (40) who agreed with the claim, 12.32% (18) disagreed with the claim, 10.95% who strongly agreed with the claim, and nine respondents strongly disagreed with the claim. 36.30% (53) disagreed with the statement, 30.82% (45) agreed, 15.75% (23) disagreed, 9.58% (14) strongly disagreed, and only 7.53% (11) strongly agreed whether the lack of afforestation and a

green environment has contributed to the poor sanitation, hygiene, and public health in the hospitals.

46.57% (68) strongly disagreed; and these were immediately followed by 35.61% (52) who were not sure; while 17.80% (26) disagreed; and none among the respondents agreed with the statement; neither strongly with the statement that open-air burning of waste which has however contributed to poor hygiene, sanitation, and public health in the hospital. 52.73% (77), strongly disagreed with the statement that inadequate access to a clean and reliable water supply can impede proper hand hygiene practices, cleaning procedures, and waste management. This was followed by 26.71% (39) who strongly agreed with the statement, 8.21% (12) who were unsure of the statement, 6.84% (10) who disagreed with the statement, and only 5.47% (08) who strongly agreed with the statement.

Table 10. The Relationship between environmental factors on Poor hygiene Correlations

		Environmental factors	Poor hygiene
Environmental factors	Pearson Correlation	1	.708**
	Sig. (2-tailed)		.000
	N	133	133
Poor hygiene	Pearson Correlation	.708**	1
	Sig. (2-tailed)	.000	
	N	133	133

** . Correlation is significant at the 0.01 level (2-tailed).

Table 11: Regression Results Showing the effectiveness of Environmental factors in reducing Poor hygiene in selected health care facilities in South Sudan

R square=0.325, F=105.601, P=0.000

	Standardized Coefficients Beta	Sig.
Environmental factors	0.708	0.000

Tables 10 and 11 showed a summary of how poor hygiene and environmental factors are positively substantially connected (r=-0.727, p<0.000). The environmental factors' coefficient of

determination is 0.325. This indicates that environmental factors account for 32.5% of the overall variation in poor hygiene.

Table 12: Showing the Responses to Questionnaire on health facility factors responsible for poor hygiene, sanitation and public health in selected healthcare facilities in South Sudan

	SD	D	NS	A	SA	Total
Statements	%	%	%	%	%	
The limited number of waste disposal bins or cans in our hospital has contributed to poor hygiene, sanitation, and public health	(00) -	(04) 2.73%	(26) 17.80%	(50) 34.24%	(66) 45.20%	233
Overcrowding of patients and hospital staff members has strained the existing water and sanitation infrastructure in the hospital citizens since it has hospitals on each of the islands but suffers from a shortage of medical personnel	(17) 11.64%	(20) 13.69%	(39) 26.71%	(30) 20.54%	(40) 27.39%	233
We have Insufficient waste disposal bins or cans in our hospital, which has attracted pests such as flies, rodents, and insects.	(00) -	(10) 6.84%	(06) 4.10%	(52) 35.68%	(78) 53.42%	233
Overburdened cleaning staff may also have difficulty maintaining a clean and sanitary environment due to the increased workload	(07) 4.79%	(11) 7.53%	(15) 16.43%	(49) 33.56%	(64) 43.83%	233
The overcrowding of patients in the Hospital can indeed contribute to poor hygiene, sanitation, and public health	(25) 17.12%	(17) 11.64%	(12) 8.21%	(32) 21.91%	(60) 41.09%	233
The limited number of cleaners or sanitation staff in the hospital has contributed to poor hygiene, sanitation, and public health	(17) 11.64%	(20) 13.69%	(39) 26.71%	(30) 20.54%	(40) 27.39%	233
The inadequate toilet facilities or lack of proper sanitation infrastructure can contribute to poor hygiene and sanitation in the hospitals	(17) 11.64%	(20) 13.69%	(39) 26.71%	(30) 20.54%	(40) 27.39%	233

NB: According to the table above, **SD** - Strongly Disagree, **D**-Disagree, **NS**- Not sure, **A**-Agree & **SA**- Strongly Agree.

Table 12 showed that the majority of respondents, or 45.20% (66), strongly agreed with the statement that poor hygiene, sanitation, and public health have been exacerbated by our hospital's limited number of waste disposal bins or cans. Another 34.24% (50) agreed with the statement, 17.80% (26) were unsure, 2.73% (04) disagreed, and none of the respondents strongly disagreed. In response to the question of whether the hospital's overcrowding of patients and staff members has put a strain on the facility's current water and sanitation infrastructure—given that it operates hospitals on each of the islands but struggles with a shortage of medical personnel—27.39% (40) strongly agreed with the statement; 26.71% (39) were unsure; 20.54% (30) agreed; 13.69% (20) disagreed; and only 11.64% (17) strongly disagreed. When asked whether certain healthcare facilities have a lack of cans or waste disposal bins in their hospital, which has drawn pests like flies, rodents, and insects, 53.42% (78) strongly agreed;

35.68% (52) agreed; 6.84% (10) disagreed; 4.10% (06) were unsure; and none strongly disagreed. This indicates that the statement—which reads, "We have a lack of cans or waste disposal bins in our hospital, which has attracted pests like flies, rodents, and insects—is true. 43.83% (64) strongly agreed; 33.56% (49) agreed; 16.43% (15) disagreed; 7.53% (11) disagreed; and the least number of respondents who disagreed were 4.79% (07) with the statement that excessive workload of the cleaning staff might make it harder for them to maintain a hygienic and clean environment. Hospital overcrowding can actually lead to poor sanitation, hygiene, and public health, the following responses were obtained: 17.12% (25) strongly disagreed; 11.64% (17) disagreed; 8.21% (12) were unsure; 21.91% (32) agreed; and 41.09% (60) strongly agreed. These results suggest that hospital overcrowding can actually lead to poor sanitation, hygiene, and public health.

Table 13: The Relationship between Health facility factors and Poor hygiene Correlations

		Health facility factors	Poor hygiene
Health facility factors	Pearson Correlation	1	.187
	Sig. (2-tailed)		.000
	N	233	233
Poor hygiene	Pearson Correlation	.187	1
	Sig. (2-tailed)	.000	.000
	N	233	233

Table 13 showed that poor hygiene and health facility characteristics have a positive and significant relationship ($r = 0.727, p < 0.05$).

Table 14: Regression Results Showing the effectiveness of Health facility factors in overcoming poor hygiene in selected health care facilities in South Sudan.

R square=0.315, F= 106.962, P=0.000

	Standardized Coefficients	Sig.
	Beta	
Health facility factors	0.680	0.000

Table 14 indicated that the health facility components have a coefficient of determination (r^2) of 0.315. This indicates that factors related to

health facilities account for 31.5% of the difference in poor hygiene.

DISCUSSION

This study revealed that the number of male respondents were higher than that of female respondents. This fact was supported by previous studies that showed a similar trend in gender distribution within the selected healthcare facilities in South Sudan [23]. The majority of respondents, according to the study, were between the ages of 20 and 35, educated, and had a university degree. This could have a detrimental effect on the standard and efficacy of monitoring and evaluating road construction projects. The findings revealed that improper waste disposal by individuals in Juba Teaching Hospital

can contribute to poor hygiene, sanitation, and public health [9][10] Improper waste disposal can result from human factors like; lack of personal hygiene practices and lack of education which create unhygienic conditions, attract pests, and contribute to the spread of diseases including malaria in many parts of Africa [9][13][24]. Understanding the causes, spread, and prevention of illnesses is largely dependent on education [25]. The results showed that ignorance of good hygiene habits may be caused by a lack of awareness and instruction. People might not recognize the value of maintaining personal

hygiene, hand hygiene, or appropriate waste disposal techniques [5]. In the absence of appropriate education and awareness, people might not prioritize hygiene practices or recognize their role in preserving a healthy environment [5][8].

This study showed that individuals in the hospital including patients, visitors, and healthcare workers have failed to comply with infection prevention protocols. This finding is in line with [6] statement that awareness and education regarding infection prevention protocols play a vital role in maintaining public health in a hospital setting and thus without proper knowledge, individuals may not understand the significance of wearing personal protective equipment (PPE), following isolation precautions, or practicing proper respiratory etiquette [6].

In Juba Teaching Hospital, this study showed insufficient access to clean and reliable water supply and that the water used for washing fruits, vegetables, or utensils is contaminated, and can lead to foodborne illnesses. According to report by UNICEF and WHO [1], the water used for washing fruits, vegetables, or utensils can result in unhygienic conditions, foul odors, and a higher risk of infections in a hospital setting [26]. Access to clean and safe water is crucial for sterilization and disinfection processes. Unsafe water in hospitals can compromise patient safety and hygiene standards by hindering the thorough cleaning and disinfection of medical equipment, surgical instruments, and surfaces [27]. Contaminated water used for washing fruits, vegetables, or utensils can lead to foodborne illnesses, further compromising the health of patients and staff [4]. Therefore, it is crucial to ensure proper water management to prevent the spread of infections.

Improper waste management, such as inadequate waste segregation, improper disposal, or insufficient waste collection, can lead to the spread of infections within the hospital [17]. The findings discovered that improper waste management practices contribute to poor sanitation and public health. Contaminated waste, including biomedical waste, can harbor pathogens and pose a significant risk to healthcare workers, patients, and visitors [28].

Findings that hospitals in Juba city practice the

CONCLUSION

This study revealed individual behaviors like inadequate hand washing, improper waste disposal, and lack of infection control awareness contribute to poor hygiene in healthcare facilities. Environmental conditions like inadequate sanitation, clean water supply, and poor waste management systems also play a crucial role in promoting or hindering hygiene.

The study highlighted the complex nature of poor hygiene in South Sudanese healthcare facilities, highlighting the need for a comprehensive

activity of open air burning of waste which has however contributed to poor hygiene, sanitation, and public health in the hospital in relation to findings [29]. Burning certain types of waste, such as plastics, can release toxic substances into the air. These substances can pose serious health risks, including respiratory irritation, neurological effects, and long-term health complications [11]. The inhalation of these toxins can be particularly harmful to individuals with pre-existing health conditions [29].

There are insufficient waste disposal bins or cans in our hospital, which has attracted pests such as flies, rodents, and insects based on this finding. A limited number of waste disposal bins or cans can place a burden on the cleaning staff responsible for waste management [5]. They may struggle to empty and clean the bins or cans in a timely manner, leading to overflowing waste containers and an increased risk of waste-related issues [30]. Proper disposal of medical waste, including sharps, hazardous materials, and infectious waste, is crucial for maintaining a safe and hygienic environment [31]. The findings revealed that overburdened cleaning staff may also have difficulty maintaining a clean and sanitary environment due to the increased workload which aligned with [9] findings, who emphasized that limited staffing can impact waste disposal and management processes. Inadequate staffing may lead to challenges in segregating, handling, and disposing of different types of waste, increasing the risk of improper waste management practices [32].

Overcrowding can make it challenging to maintain adequate cleanliness and sanitation within the hospital. The present study also revealed that overcrowding of patients and hospital staff members has strained the existing water and sanitation infrastructure in the hospital since it has hospitals on each of the islands but suffers from a shortage of medical personnel [15]. The increased number of patients may overwhelm the available resources, including cleaning staff and supplies. This can result in inadequate cleaning and disinfection of patient rooms, bathrooms, and common areas, contributing to the accumulation of dirt and pathogens and the risk of healthcare-associated infections like cholera and hepatitis A and B, among others.

approach that addresses individual behaviors, environmental conditions, and health facility practices to create a safe and hygienic environment.

Recommendations

The proposed recommendations for improving hygiene standards in South Sudan's hospitals include comprehensive hygiene training and education programs for healthcare staff and patients, investment in upgrading hospital infrastructure, regular monitoring and audits,

robust infection prevention and control policies, adequate staffing and workload management, community engagement, efficient waste management, patient and family participation, quality improvement initiatives, leadership and accountability, collaboration and networking, research and innovation, education and training, infrastructure improvement, monitoring and enforcement, staffing and resources, and

community engagement. By involving all stakeholders and committing to sustained efforts in promoting hygiene and infection control measures, the selected healthcare facilities in South Sudan can significantly improve their hygiene standards, leading to better patient outcomes, reduced healthcare-associated infections, and a safer and healthier healthcare environment

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