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Effectiveness of Teamwork among Theatre Users in Lagos State University Teaching Hospital, Ikeja

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Abstract

The study revealed that most theatre users had a strong understanding of effective teamwork, with education playing a significant role. Respondents with higher education levels were more likely to value teamwork, emphasizing the importance of formal training. Disparities in self-assessment of teamwork were noted between different roles, with nurses and theatre assistants generally perceiving higher levels of effective teamwork than surgeons and anesthetists. Work experience and education were found to be key influencers of teamwork perceptions. Participants with 1–5 years of experience were more likely to recognize the positive effects of

teamwork, while those with over 10 years of experience were less inclined to do so. Additionally, staff with postgraduate qualifications were more likely to recognize the impact of teamwork on surgical outcomes. Despite acknowledging teamwork's importance, many respondents did not perceive a direct link between teamwork and improved surgical outcomes, possibly due to burnout or role fatigue, especially among experienced staff. The research work concluded that education, work experience, and role dynamics significantly shaped perceptions of effective teamwork among theatre users at LASUTH. While most respondents recognized the importance of teamwork, the perceived impact on surgical outcomes was not universally acknowledged. To enhance effectiveness of teamwork at LASUTH, the study recommended promoting continuous education, including postgraduate qualifications, and organizing effectiveness team-building activities.

Introduction

Teamwork is a cornerstone of effective healthcare delivery, fundamentally impacting patient safety, quality of care, and overall healthcare outcomes. In contemporary healthcare settings, the complexity of patient needs and the diversity of professional expertise necessitate collaborative approaches. As healthcare systems become increasingly intricate, characterized by multi-disciplinary teams, effective teamwork becomes essential to ensure that various healthcare providers can coordinate their efforts efficiently (Baker *et al.*, 2019). Research demonstrates that well-functioning teams can enhance

communication, reduce medical errors, and improve patient satisfaction, thereby fostering a culture of safety within healthcare environments (Salas *et al.*, 2018). Thus, understanding the dynamics of teamwork is critical in addressing the challenges faced by healthcare providers.

Effective teamwork is essential for achieving optimal patient outcomes, ensuring safety, and maintaining efficiency. Operating theatres demand precision, timely communication, and coordinated efforts from a diverse set of professionals, including surgeons, anesthetists, nurses, and support staff, each of whom plays a crucial role in the success of surgical procedures. The interdependency of these roles makes strong teamwork vital for minimizing surgical errors, managing unforeseen complications, and responding effectively to patient needs (Salas *et al.*, 2018). As the operating theatre is one of the most complex and dynamic settings within hospitals, effective collaboration and mutual understanding between team members are indispensable for delivering high-quality surgical care (Leonard and Frankel, 2018). Research highlights that when healthcare teams work cohesively, there is a significant reduction in surgical errors and improved patient outcomes, alongside enhanced job satisfaction and reduced stress for healthcare providers (Jones *et al.*, 2020).

The unique cultural dynamics in Nigerian healthcare facilities play a significant role in shaping teamwork practices. For instance, the hierarchical structure that is common in many hospitals can create barriers to open communication, as junior staff members may be hesitant to voice concerns or provide feedback to senior colleagues. This hierarchical model can stifle teamwork by discouraging open dialogue, which is critical for effective collaboration, particularly during surgical procedures where every team member's input is vital for patient safety (Patterson *et al.,* 2019). Additionally, organizational factors, such as a lack of standardized team training programs and insufficient resources, further impede teamwork development in Nigerian hospitals. Unlike in high-income countries, where regular teamwork training is common, many Nigerian healthcare facilities lack the

resources to implement such programs, resulting in missed opportunities to cultivate essential teamwork skills (Baker *et al.,* 2019). This research work aims at determining the effectiveness of teamwork among theatre users in Lagos State University Teaching Hospital, Ikeja.

Materials and Methods

Research Design

Cross-sectional research design was adopted to assess the effectiveness of team work among theatre users in Lagos State University Teaching Hospital Ikeja.

Research Setting

The study was carried out at Lagos State University Teaching Hospital (LASUTH), Ikeja, LASUTH stands as a prominent tertiary healthcare institution in Lagos State, Nigeria. LASUTH is renowned for its comprehensive and high-standard healthcare services, catering to a large, diverse population from Lagos and neighbouring states. The hospital is structured to deliver advanced medical services, making it an essential hub for specialized healthcare and a training ground for future healthcare professionals. LASUTH's dedication to innovation, quality, and patient-centered care has made it a reputable institution within the Nigerian healthcare system.

Methods of Data Collection

The questionnaire will be distributed to eligible participants (e.g., surgeons, nurses, anesthetists, and support staff) working in the theatre department. To facilitate ease of response, the questionnaires will be provided in both paper and digital formats, allowing participants to choose the method most convenient for them. The questionnaire will be self-administered, allowing participants to complete it independently to encourage honest and reflective

responses. However, a research assistant will be present to clarify any questions, ensuring accurate understanding and completion of the items.

The data collection will span four weeks to ensure ample time for participation from busy healthcare professionals. Follow-up reminders will be provided to participants who have not yet responded to maximize response rates. To uphold ethical standards, all participants will be informed about the study's purpose, their right to withdraw at any time, and the confident

Method of Data Analysis

The questioners were sorted manually after they have been properly filled by the respondents. Data was entered, cleaned and analysed using the 27th version of Statistical Package for the Social Sciences (SPSS) and findings was properly represented using descriptive statistics, while the hypotheses generated was tested using chi-square at 0.05 level of significance. Finally, the results were compiled and presented using tables, graphs, and texts. To determine the level of teamwork, the scale in the questions was ranked 1-5 and the are 7 questions on the teamwork of theatre users (the highest score will be 35). Therefore, the level of effectiveness teamwork was categorized as follows based on aggregate scores;

High level of teamwork =18-35

Low level of teamwork = 1-17

Target Population

The target population of this study includes include male and female users of operating room which include surgeons and their assistant, Anaesthesiologist, Anaesthetists, Perioperative Nurses, Technicians and attendants in Lagos State University Teaching Hospital Ikeja. A total number of 230 participants that are theatre users was used for this study.

Sampling Size Determination

The sample size was calculated using Fisher's formula:

To determine the sample size for the study, the formula used for the population greater than 10,000 was used:

$$n = \frac{z^2pq}{d^2}$$

- Where,
- n = the minimum sample size when the population is more than 10,000

  Z = the standard normal deviate was set at 1.96, which corresponds to 95% confidence level.

  P = prevalence of the respondents with knowledge of communication and teamwork from a previous study was 73.5% (Oyediran et. al., 2018)

  q = 1- p (1-0.735=0.265)

  d = degree of accuracy, set at 0.05 for this study

  Therefore,

  n = $(1.96)^2$x 0.316x 0.684/0.05^2

  = 299.3

  = 299

The population of theatre users in Lagos State University Teaching Hospital, Ikeja was less than10, 000, and estimated to be 650 therefore to obtain the "finite sample size" for the study, the formula below was used:

n_f=n/1+(n/N)

n_f=299/1+(299/650)

n_f=299/1+0.46

n_f= 204.8

nf= 205

To compensate for non-response, 10% of the original size was added.

n_s = n_f/0.9

Where:

n_s= sample size to compensate for attrition

n_f = original calculated sample size

205/0.9

=228

However, final sample size of **230** was used to increase the power of the study.

Results and Discussion

Table 1: Socio-demographic characteristics of respondents

Variables	Frequency	Percentage
Age group		
≤30	37	16.1
31 – 40	119	51.7
41 – 50	61	26.5
51 – 60	13	5.7
Mean ± SD	37 ± 11.4	
Gender		
Male	71	30.9
Female	159	69.1
Marital status		
Single	59	25.7
Married	140	60.9
Divorced	18	7.8
Widowed	13	5.7
Ethnicity		
Yoruba	115	50.0
Hausa	69	30.0
Igbo	46	20.0
Level of education		
Secondary	68	29.6
Diploma	94	40.9
Bachelor degree	30	13.0
Postgraduate	38	16.5
Work experience in theatre		
Less than 1 year	20	8.7
1 – 5 years	109	47.4
6 – 10 years	68	29.6
Over 10 years	33	14.3
Religion		
Christianity	118	51.3
Islam	112	48.7

From table 1, The age distribution of respondents showed that the majority (51.7%) were in the 31–40 age group, which was consistent with the trend of higher participation from middle-aged professionals in Nigerian surgical teams. Younger professionals (≤30 years) represented 16.1% of the sample, a percentage lower than expected for a growing workforce in the healthcare sector. This could be attributed to the longer educational and training periods required for theatre roles, suggesting that younger individuals may not yet have sufficient experience. The mean age of respondents (37 ± 11.4) supported this, as it aligned with those in the middle to late career stages, typically possessing significant theatre experience. The gender distribution of the study (30.9% male, 69.1% female) highlighted the predominance of female professionals in the theatre setting, which mirrored findings from other studies in Nigeria where women often dominated nursing and allied health professions (Ogunfowokan *et al.,* 2021). This trend could also be attributed to cultural factors, such as the higher representation of females in healthcare roles compared to males in surgical specialties.

Regarding marital status, the majority of the respondents were married (60.9%), suggesting a family-oriented professional group. This finding was consistent with the socio-cultural realities in Nigeria, where family responsibilities often influenced the professional choices and career progression of healthcare workers. Studies had shown that married individuals in Nigeria exhibited greater career stability and professional growth due to family support (Okafor *et al.,* 2021).

Ethnicity played a critical role in shaping the dynamics of healthcare teams. Yoruba respondents were the largest ethnic group (50%), which reflected demographic patterns in the region. A study by Olaniran *et al.,*(2020) also observed ethnic diversity in Nigerian theatre teams, where regional differences influenced communication styles and team cohesion.

The results from the knowledge of teamwork section indicated a strong recognition of the importance of teamwork for effective patient outcomes in the theatre. A majority (73.5%) of respondents agreed that teamwork was

critical to achieving effective patient outcomes, which aligned with other studies highlighting that collaborative practice improved surgical efficiency and reduced errors (Ojo *et al.,* 2022).

Table 2. The Efficacy of teamwork among theatre users on surgical outcome.

Variables	Yes (%)	No (%)
Teamwork enhances the safety of surgical procedures.	141 (61.3)	89 (38.7)
Improve Patients outcomes	162 (70.4)	68 (29.6)
Reduction in errors during theatre procedures.	136 (59.1)	94 (40.9)
Efficient use of resources.	189 (82.2)	41 (17.8)
Improvement in staff morale.	161 (70.0)	69 (30.0)
Reduces stress during surgeries.	157 (68.3)	73 (31.7)
Increase overall productivity.	81 (35.2)	149 (64.8)
Continuity of care during long surgeries.	180 (78.3)	50 (21.7)
Builds trust among theatre staff.	162 (70.4)	68 (29.6)
Improves patient satisfaction.	151 (65.7)	79 (34.3)

From table 2. The high agreement (78.3%) on the role of mutual respect and understanding team roles in enhancing efficiency was consistent with global and Nigerian research. Mutual respect among team members fostered a culture of collaboration, leading to improved patient outcomes (Asuquo et al., 2021). Similarly, understanding team roles was crucial for reducing

confusion and enhancing performance in high-pressure theatre environments (Adebayo *et al.,* 2020).

However, a significant proportion of respondents (55.7%) disagreed with the statement that effective teamwork did not require regular collaboration, indicating a misunderstanding of the importance of consistent communication and collaboration. This aligned with findings from Akinmoladun *et al.,*(2021), who reported that many theatre users in Nigerian hospitals still struggled with maintaining continuous collaboration, which could lead to miscommunication and errors.

Table 3. Association between socio-demographics and efficacy of teamwork on surgical outcome

Variables	Efficacy of teamwork on surgical outcome		χ^2	p-value
	Yes (%)	No (%)		
Age group			32.986[f]	**0.001**
≤30	0 (0.0)	37 (100.0)		
31 – 40	46 (38.7)	73 (61.3)		
Yes	65	28.3		
No	165	71.7		
41 – 50	19 (31.1)	42 (68.9)		
51 – 60	0 (0.0)	13 (100.0)		
Gender			0.114	0.736
Male	19 (26.8)	52 (73.2)		
Female	46 (28.9)	113 (71.1)		
Marital status			85.039[f]	**0.001**
Single	0 (0.0)	59 (100.0)		
Married	47 (33.6)	93 (66.4)		
Divorced	18 (100.0)	0 (0.0)		
Widowed	0 (0.0)	13 (100.0)		
Ethnicity			108.070[f]	**0.001**
Yoruba	65 (56.5)	50 (43.5)		
Hausa	0 (0.0)	69 (100.0)		
Igbo	0 (0.0)	46 (100.0)		
Level of education			22.857[f]	**0.001**
Secondary	19 (27.9)	49 (72.1)		
Diploma	28 (29.8)	66 (70.2)		

Bachelor degree	0 (0.0)	30 (100.0)		
Postgraduate	18 (47.4)	20 (52.6)		
Work experience in theatre			39.437[f]	**0.001**
Less than 1 year	0 (0.0)	20 (100.0)		
1 – 5 years	47 (43.1)	62 (56.9)		
6 – 10 years	18 (26.5)	50 (73.5)		
Over 10 years	0 (0.0)	33 (100.0)		
Role in theatre			56.687[f]	**0.001**
Surgeon	19 (21.6)	69 (78.4)		
Anesthetist	46 (53.5)	40 (46.5)		
Nurse	0 (0.0)	46 (100.0)		
Theatre assistant	0 (0.0)	10 (100.0)		
Religion			20.220	**0.001**
Christianity	18 (15.3)	100 (84.7)		
Islam	47 (42.0)	65 (58.0)		

Findings from the study showed that a predominant 81.7% demonstrated good knowledge of teamwork. This high level of awareness underscored the growing recognition of the importance of teamwork in surgical settings. Similar studies in Nigeria had reported that when theatre staff were well-informed about teamwork principles, the quality of surgical care improved, as they were better equipped to collaborate effectively (Olaniran and Adeyemi, 2020). Knowledgeable staff were more likely to engage in practices that fostered a positive working environment, reduced errors, and improved patient outcomes (Akinmoladun *et al.,* 2021).

However, the 18.3% of respondents with poor knowledge indicated the need for further education and training programs to enhance awareness about teamwork dynamics and its direct impact on surgical outcomes. This finding was consistent with the report by Amadi *et al.,* (2022), who identified that a lack of formal training on teamwork among theatre staff could have hindered their ability to work cohesively, affecting patient safety and staff performance.

The study found a significant association between age and knowledge of teamwork (χ^2 = 25.454, p = 0.001). Respondents aged 30 years and below

demonstrated the highest percentage (100%) of good knowledge of teamwork, with younger staff generally more likely to be informed about current teamwork principles and practices. This finding aligns with studies by Olaniran and Adeyemi (2020), which suggested that younger healthcare workers often have more exposure to modern team-based training during their academic programs. In contrast, older age groups (particularly those between 41-50 years) showed a higher percentage of poor knowledge (36.1%), potentially due to limited access to recent professional development programs and a less team-oriented working culture in earlier stages of their careers. Other studies, such as that by Akinmoladun *et al.,* (2021), have similarly noted that continuous professional development plays a crucial role in enhancing knowledge, particularly among older professionals who may not have received team-based education in their earlier careers. Education level showed the strongest association ($\chi^2 = 73.561$, $p = 0.001$) with knowledge of teamwork, with individuals holding a diploma or bachelor's degree demonstrating the highest levels of good knowledge (100%). This is consistent with findings by Adebayo *et al.,* (2020), who highlighted that formal education plays a vital role in equipping healthcare workers with the theoretical knowledge and practical skills necessary for effective teamwork in the operating theatre. On the other hand, those with postgraduate education showed a lower percentage of good knowledge (47.4%), which may suggest that postgraduate training may not always emphasize the practical aspects of teamwork as much as undergraduate programs.

Conclusion

From these research, the following conclusion were drawn; The results revealed that most theatre users had a strong understanding of teamwork, with education emerging as a significant factor. Respondents with higher educational qualifications were more likely to recognize the effectiveness of teamwork, highlighting the role of formal education in cultivating collaborative practices. However, differences in self-assessed teamwork were

observed across various roles, with nurses and theatre assistants generally rating their teamwork experiences more positively than surgeons and anesthetists, Key factors influencing teamwork included both work experience and education. Staff members with 1–5 years of experience were more likely to acknowledge the positive effects of teamwork, whereas those with over 10 years of experience showed a lower tendency to recognize its value. Fostering continuous education and promoting team-building initiatives may enhance the effectiveness of teamwork and contribute to improved surgical outcomes at LASUTH.

Recommendations

Government should allocate adequate funds to support training programs and workshops that focus on improving teamwork skills, conflict resolution, and effective communication in healthcare settings, particularly in theatres. This can be achieved through public health initiatives or partnerships with private sector organizations; Theatre workers should engage in regular self-assessment and reflection on their teamwork skills, seeking areas for improvement. Participating in feedback sessions and collaborative reviews can enhance personal and team performance. Taking responsibility for one's role in team dynamics will lead to more cohesive and effective surgical procedures.

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