

Original Research Article

Problems and impact of use of private owned theatre wears as seen by theatre users

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ABSTRACT

Background: The surgical theatre wear or attire include but are not limited to surgical caps, surgical scrubs, theatre aprons, and theatre foot wears. The basic principles in the care and maintenance of theatre wears are aimed at ensuring safety and infection prevention and control. Aim was to explore the problems associated with private owned theatre wears (scrubs, boots and aprons); and examined the impact of semi-closed mode of procurement and maintenance of theatre wears on theatre users in the tertiary healthcare setting.

Methods: A cross-sectional descriptive study was done among theatre users in a tertiary healthcare center using self-administered semi-structured questionnaires. Data was analyzed using the Statistical Package for the Social Sciences (SPSS) version 20.0.

Results: One hundred and twenty-nine (60.6%) respondents affirmed that the mode of care of theatre scrub was not standard. 133 (62.4%) of the respondents asserted that there were problems associated with the semi-close mode of care. Nearly half (42.3%) of the respondents stressed that bad smell and contamination were their worries, and most respondents call for a change in the model of procurement and care of theatre wears.

Conclusions: There were problems associated with the semi-closed system as revealed in this study, which bothers on safety of the theatre staff. Most respondents were negatively impacted, rated the current practice below standard, and call for a change in policy.

Keywords: Impact, Nigeria, Problems, Port Harcourt, Semi-close system, Theatre wears

INTRODUCTION

The design and composition of the surgical operating theatre, the pattern of airflow, the surgical theatre wears, and some behaviours and rituals intended towards safety and infection control, all contribute to the uniqueness of the surgical operating theatre, which should not be compromised.¹⁻⁵ The surgical theatre wears or attires include but are not limited to surgical caps, surgical scrubs, theatre aprons, and theatre foot wears.⁶⁻¹³ Researchers have over the years questioned the practice

of use of surgical cap and surgical face mask for want of evidence of protecting the patient or surgeon against infectious material.^{9,14} It has also been reported that implementation of stringent operating room policies does not reduce surgical site infection, but rather increased health care cost.^{15,16} However, the recent highly infectious Corona virus pandemic and its associated morbidity and mortality globally is a good reminder of the need to be cautious with weakening any surgical operating theatre policy. Hence the focus of discussion should also include the protection of the healthcare staff.

The basic principles in the care and maintenance of theatre wears are to ensure safety and infection control.^{17,18} Most surgical caps are disposable, though there are cloth caps made of similar material with scrubs that are reusable. Surgical scrubs are washed daily and reused.^{19,20} Aprons and boots are washed, decontaminated and exposed after each use, and surgical gloves are disposed after use.^{20,21} In a similar way that improper use of water, food, or electric power in other aspects of human endeavour can result in untoward effects, operating theatre wears, as important as they are, can be associated with some challenges or problems that can impact negatively of the users and the patients when necessary precautions are partly or wholly not followed.²²⁻²⁴ The model of procurement and care of theatre wears may vary in different hospitals from the strictly closed system where the wears are provided and cared for by the hospital, to the liberal open system in which each theatre user takes responsibility for its procurement and care.

The semi-closed system of procurement and care of operating theatre wears is a convenience policy in which both the hospital and the individual theatre staff share in the procurement and maintenance (including home laundry) of operating theatre wears. The rhetorical question before any arbiter is: can every theatre user ensure proper care of these theatre wears, especially in the background of a low income setting like ours? The objectives of this study was to explore the problems associated with private owned theatre wears (scrubs, boots and aprons); and establish the impact of semi-closed mode of procurement and maintenance of theatre wears on theatre users in the tertiary healthcare facility in a low income setting in the last five years.

METHODS

A cross-sectional descriptive study was carried in Port Harcourt the capital of Rivers State, one of the Niger Delta States in the Federal Republic of Nigeria. The study was done at the University of Port Harcourt Teaching Hospital, in Port Harcourt, the capital of Rivers State, between January 2020 and February 2020 and carried out among theatre users comprising medical doctors (surgeons and anaesthetists), theatre nurses, technicians and students.

All the theatre users who were present at the tertiary health facility, and who gave consent were recruited for the study using the convenience sampling method. Theatre users who were too busy with their work were excluded.

The convenience sampling method was used. The projected total available theatre users' population was about 300. Two-third of the total population was targeted. A total of two hundred and thirty (230) self-administered semi-structured questionnaires were distributed and 213 (about 2/3rd) were retrieved.

Data analysis

Information on problems and impact of use of private owned theatre wears were collated and analysed using the Statistical Package for the Social Sciences (SPSS) version 20.0.

RESULTS

A total of 213 respondents who were doctors, nurses, students, and technicians were recruited for the survey. The demographic characteristics of the respondents are as summarized in Table 1. More than half (64.8%) of the respondents had spent seven years or more in service and less than a quarter (14.1%) had less than one year in service. Most of the respondents were those who were actively involved in patient care in the theatre. The health staff category indicated that 96 (45.1%) were medical doctors, 56 (26.3%) were nurses. One hundred and twenty-nine (60.6%) respondents affirmed that this mode of care of theatre wears was not standard (Table 2). One hundred and thirty-three (62.4%) of the respondents asserted that there were problems associated with this mode of care. Table 2 also showed the level of satisfaction of theatre users with majority of the respondents, 146 (68.5%) desiring a change in the system.

Table 1: Socio-demographic characteristics of respondents (N=213).

Variables	Frequency	Percentage
Sex		
Male	129	60.6
Female	84	39.4
Age (in years)		
16-24	24	11.2
25-34	56	26.3
35-44	65	30.5
45-54	54	25.4
55-64	14	6.6
Marital Status		
Single	98	46.0
Married	115	54.0
Years in service		
Less than 1 Year	30	14.1
1-3 years	18	8.5
4-6 years	27	12.7
7-10 years	67	31.5
More than 10 years	71	33.3
Health staff category		
Medical Doctor	96	45.1
Nurse	56	26.3
Student	24	11.2
Others (1. Anesthetic Technician, laboratory staff etc.)	37	17.4

Table 2: Satisfaction with private owned theatre wears (N=213).

Variables	Frequency	Percentage
If current care practice of theatre wears is standard		
Yes	37	17.4
No	129	60.6
Not sure	47	22.1
If there are problems associated with current mode of care of theatre wears		
Yes	133	62.4
No	18	8.5
Not sure	62	29.1
Desire to change mode of storage		
Yes	146	68.5
No	43	20.2
Not sure	24	11.3

Table 3: Identified problems of private owned theatre wears by respondents (N=213).

Problems	Frequency of responses	Percentage (%)
Smelling and contamination	90	42.3
Inconvenient	18	8.5
Not hygienic	75	35.2
Cumbersome	21	9.9
Stress of washing / Proper cleaning	23	10.8
Lack of adequate storage lockers	12	5.6
None	67	31.5

The impact of facility policy (semi-closed system of procurement and care of theatre wears) on users of operating theatre was analysed and 146 (68.5%) respondents desired a change in the current policy (Table 2).

Identified problems of private owned theatre wears are highlighted in Table 3. One hundred and thirty (61%) respondents asserted that mode of storage of scrubs, boots and aprons was not convenient. Seventy-five (35.2%) respondents felt that the current mode care of theatre wears was not hygienic enough.

DISCUSSION

Majority of the study participants had been in the service of the institution for seven years or more and therefore knew what obtained in the operating theatre concerning the policy of use of private owned theatre wears. Also, almost half of the participants were medical doctors (surgeons and anesthesiologists) who were at the hierarchy of service delivery in the theatre, and therefore whose opinion could not be jettisoned.

The problems identified in this study bother on care and storage of operating theatre wears, for which over a half of respondents affirmed were not up to standard. The identified problems of bad smell and concern of contamination of theatre wears obviously implies that some overgrowth of micro-organisms acquired from the theatre environment must have occurred. The complain of the cumbersome nature of carrying aprons and boots around may also imply that study participants would not be motivated enough to individually properly clean, decontaminate, and expose their wears enough before storage. It appears that the lack of evidence of increase in surgical site infection following this practice may have strengthened the policy which now seems to mortgage the safety of the theatre staff for administrative convenience.¹⁵ The concern of increased healthcare cost associated with more stringent measures of care, which does not reduce surgical site infections, seem to be tilting the balance negatively.¹⁶ A centrally organised cleaning, decontamination and storage policy would have averted this concern.

It is reasonable to assert that the problems are consequences of poor compliance with standard care of theatre wears. Similar issue of poor compliance has been reported among health workers in studies investigating compliance with standard precautions.^{25,26} Our study is different in that it focuses on theatre wears. Majority of respondents stressed that the policy of individually owning, cleaning and storing of theatre scrubs, aprons and boots was associated with problems which impact negatively on them: cumbersome nature of care and unacceptable smell and contamination risk. This negative impact is evident in the manner in which majority of study participants, in their opinion, judge this practice as being below standard, and therefore were desirous of a change in policy. Researchers have demonstrated that the opinions of staff can impact on work morale.²⁷⁻³⁰ It is therefore safe to opine that the expressed opinion of these health staff has the potential of adversely affecting their morale if no intervention is made.

Limitation

It is questionnaire-based, relying on the opinion of theatre users. An on-site study investigating the microbial status of the theatre wears will probably be more evidenced-based. The use of a non-probability sampling method (convenience) in this study is another limitation.

CONCLUSION

There were problems associated with the semi-closed system/policy/model as revealed in this study: cumbersome individual care; stressful individual washing/proper cleaning; improper cleaning; lack of lockers for storage; storing of scrubs, aprons, and boots together; and consequent abnormal smell and risk of contamination. Most respondents were negatively impacted, rated the current practice below standard, and

called for a change in policy. Policy change to a centrally organized cleaning, decontamination and storage (a closed system/policy) will avert the concerns and negative impact, and therefore is recommended in this setting.

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