

## MEDICAL TEXTILES IN GOVERNMENT HOSPITALS

**Akubue Benedette N. and Ebonyi Ifeoma H.**

Department of Technology and Vocational Education Ebonyi State University  
Abakaliki, Nigeria

---

**ABSTRACT:** *This study assessed the medical textiles in hospitals in Abakaliki Urban, Ebonyi State, Nigeria. The study ascertained the availability and the utilization of medical textiles in government hospitals in the area of study. Two research questions guided the study. The study adopted descriptive survey research design. The population of the study was 800 staff of the two government hospitals in area of study. Stratified sampling technique was used to arrive at 160 respondents used for the study. Questionnaire was used for data collection and data collected was analyzed using frequency and mean. Finding include that medical textiles are not enough in the government hospitals and medical textiles are not also effectively utilized in the area of study. It was recommended that medical personnel in the area of study should insist on provision of proper and enough medical textiles before working and that the government should provide antimicrobial protection for the workers in the hospitals.*

**KEYWORDS:** Hospital Protection, Availability, Utilization, Medical Textile.

---

### INTRODUCTION

The combination of textile technology and medical science has resulted into a new field called medical textil (Ukwills 2012). He maintained that medical textiles, also known as biomedical textiles are textile products and constructions for medical and biological users such as first aids, clinical or hygienic purposes. Medical textiles according to Fijan and Turk (2012) are clothing used by medical personnel and patients in hospitals. Medical textiles according to Fijan and Turk include assorted functional clothing bedside, curtains, surgical gown, breast foam, napkins, scrubs and surup caps among others. Chinta and Veena (2013) opined that medical textiles are the type of technical textiles which offer a variety of technical and functional properties having applications in the field of medical and clinical care. Medical textiles are therefore the textiles that are primarily manufactured for their technical performances and functional properties in hospitals. The textiles are neither for aesthetic nor for decorative purpose.

The health care givers often use various medical textiles in hospitals. A patient that is admitted in a hospital cannot stay through without coming in contact with medical textiles. In other word, medical textile are inseparable with patient in admission and workers in the hospitals.

Kerwat and Wulf (2008) grouped medical clothing worn by medical personnel into two thus, working clothing and protective clothing. Working clothing is used to protect the private clothing of the staff and to identify the hospital personnel. Protective clothing on the other hand, protects staff and patients from nosocomial infections (hospital acquired infection). Kerwat Wult also noted that protective clothing has to be changed between patient visits especially as recommended with invasive procedures and immune

compromised patients. They maintained that the provision of enough medical clothing in hospitals is very vital.

Desai (2013) classified medical textile products into three as patient specific, general patient management and procedure specific. The patient specific items include sheets, sponges among others; the general patient management products include under pads, adult and children cliapes, wipes and so on. While procedure specific products are sterilization wrap, surgical gowns, drapes, table covers, face mask head covers, shoes among others. Desai also noted that medical textiles are typically used in the operating room theatre and hospital wards for hygiene care and safety of both staff and patients. Scarlet, Deliv and Marries (2010) noted that medical textiles play vitals role in the manufacture of various implants such as the replacement of diseased or nonfunctioning blood vessels, segment of oarta and other large arteries. Hence Thamostraran (2013) stated that medical textiles act as chief architect in life of patients in the hospitals because patient cannot avoid their uses while in hospital. The acceptability of medical textile materials in the medical field is therefore based on their physical properties like extensibility, moisture permeability, strength, flexibility and so on. These qualities and proper care on medical textiles do not allow medical textiles to pose as a vehicle for transfer of pathogens to patients and hospital workers. Desai (2013) opined that quality medical textiles help to protect both staff and patients in hospitals from bacteria, viruses and body fluid.

Daniel (2008) noted that hospitals are initially found and funded by religious order, charitable organizations and individuals. He maintained that in recent time, both state and federal government participate in founding and funding of hospital. The founders provide or employ professional physicians, surgeon, nurses, equipment fools and other materials including medical textile medical textile materials necessary in the various hospitals.

Martin (2010) opined that most hospitals funded by government lack modern equipment and tools. Women that put to bed in the government hospitals in Abakaliki Urban are often given expired sanitary pads and hapkins which cause rashes and other skin infections to the women and their babies. Expired diapers and old improperly laundered vests are given to wear new born babies in the government hospitals in the areas of study while many other women that put to bed in the hospitals in the area of study buy their medical textiles in the nearby markets. It is also observed that bedding, door and window curtains as well as protective and working clothing of staff in the area of study are not changed on daily bases. These conditions motivated the researcher to asses the medical textiles in the government hospitals in Abakaliki urban, Ebonyi State.

**Purpose of the Study:** The purpose of this study was to asses the medical textiles in the Government Hospitals in Abakaliki Urban, Ebonyi State. Specially the study sought to.

1. Ascertain the availability of medical textile in government hospitals.
2. Ascertain the utilization of medical textiles in government hospitals in the area of study.

### **Research Question**

1. What are the medical textiles available in the government hospitals in Abakaliki Urban Ebonyl State?
2. What are the uses of medial textiles in government hospitals in the area of study?

## METHODOLOGY

The study was carried out in government hospitals in Ebonyi State, Nigeria. The hospitals include the former Federal Teaching hospital known as FETHA 1 and Federal Teaching Hospital (specialist) known as FETHA 2 all in Abakaliki Urban in Ebonyi State, Nigeria.

The design was descriptive survey research design. Descriptive survey design employs the study of large population and sample by selecting and assessing the outcome of the sample chosen from the large population using questionnaire (Abonyi Okereke, Omebe and Anugwo 2006).

The population of the study was 800 staff which comprised 276 doctors, 195 nurses, 101 orderlies, 90 porters and 138 laboratory scientists (Ethical and Research committee administrative register, 2014). The sample size was 160 respondents. The stratified sampling technique was used to determine the sample size of the study. Structured self-developed questionnaire was used for data collection. The questionnaire comprised of thirty four items. The instrument was validated by three lecturers from Human Kinetic and Health department. The inputs of the four experts were used to draft the final copy of the questionnaire for the study.

One hundred and sixty questionnaires were distributed by the researcher and two research assistants in the two Government Hospitals. Seventy six questionnaire were administered in FETHA 1 while eighty four questionnaires were administered in FETHA 2. The entire questionnaires were correctly filled and returned. Frequency and mean scores were the statistical tools used to analyzed the data collected. Four point likert-scale of highly available, available moderately available and not available was used and 2.50 is set as the bench mark.

**Table 1: Mean scores responses on the availability of medical textiles in government hospitals (n=160).**

S/N	Item Statement	Medical Textiles available in the hospital	Mean ( $\bar{X}$ )	Decision Rule
1	Surgical mask		2.50	Enough
2	Patients gowns		2.03	Not enough
3	Absorbent pads		2.04	Not enough
4	Plasters		2.58	Enough
5	Soft tissue implants		2.03	Not enough
6	Cardiovascular implants		2.27	Not enough
7	Bandages		2.10	Not enough
8	Bedside curtains		2.03	Not enough
9	Surgical caps		2.65	Enough
10	Blankets		2.14	Not enough
11	Surgical gown		2.16	Not enough
12	Laboratory coats		2.56	Enough
13	Incontinence diapers		1.74	Not enough
14	Vascular grafts		1.81	Not enough
15	Baby's diapers		2.20	Not enough
16	Sanitary napkins		2.15	Not enough
17	Cotton gauzes		3.20	Enough

18	Bedding	2.36	Not enough
19	Heart valves	2.35	Not enough
20	Lint	3.40	Enough

Table I: Indicated that six out of twenty medical textiles are available in government hospitals in Abakaliki urban scores 2.5, 2.58, 2.65, 2.50, 3.20 and 3.40 respectively which is above the 2.5 cut-off point set for the study. The other items score mean values below the cut-off point of 2.5 set for the study.

**Table II: Mean responses on the uses of medical textile in government hospitals (N=160).**

S/N	Items statements: Uses of medical textiles by patients and medical personnel.	Mean( $\bar{X}$ )	Decision
1	Medical gloves are worn by medical personnel	2.50	Agreed
2	Patients' gowns are worn always to protects patients' street clothes, maintain, comfort and for hygiene purposes.	2.26	Disagreed
3	Medical personnel are identified through the use of medical textile.	2.62	Agreed
4	Bedding are effectively used to cover mattresses and pillow cases and changed after every use.	2.13	Disagreed
5	Curtains are used to protect patients from sun rays and other environment hazard.	2.38	Disagreed
6	Laboratory coats are used to protect the street clothes of medical personnel.	2.50	Agreed
7	Gloves, face mask and medical hand gloves are used to prevent cross contamination between the caregiver and patients always.	2.08	Disagreed
8	Surgical masks are used to cover nose in order to reduce the spread of infectious liquid droplets from	2.26	Disagreed
9	Protective and surgical gowns are used to protect the medical personnel from contracting infections	1.56	Disagreed
10	Incontinence diapers are used to absorb and retain patients' fluid and wastes.	2.16	Disagreed
11	Bandages are always used to create an optimal environment for wounds.	2.66	Agreed
12	Vascular grafts are used to treat hindrances to blood flow in time of accident.	2.41	Disagreed
13.	Heart valves are used to assist surgeons in treating vascular diseases	2.78	Agreed
14.	Link are used for primary cleaning of wounds before applying dressing	2.63	Agreed

Table II: Indicated that six out of fourteen items have mean score values of 2.50, 2.62, 2.50, 2.66, 2.78 and 2.62. These scores are above 2.5 which is the bench mark set for the study, eight items have mean scores below 2.50 bench mark set for decision.

## Findings

The following findings were made:

1. It was found that some of the medical textiles needed in the area of study are not available. The quantity of the few that are available in the hospitals are insufficient.
2. Medical textiles are not effectively used in the hospitals by the staff and patients in the government hospitals in Abakaliki Urban, because the textiles are not always available.

## Discussion

The findings are discussed based on the research questions that guided the study. The study was conducted to assess the medical textile in the government hospitals in Abakaliki Urban Ebonyi State, Nigeria. The finding in table one showed that some of the medical textiles are not enough in government hospitals. The medical textiles that are lacking in the area of study include surgical gowns, patient gown, absorbent pads, plasters, soft tissue implants cardiovascular implants, bedside curtains, blankets among others. Selcuk, Sibel and Cetin (2013) noted that surgical apparels have not been in standard use in some hospitals for a very long. They maintained that surgical gowns are not supplied into hospitals regularly. Wearing surgical gowns gloves, surgical masks is very important because they play crucial role in asepsis by reducing the transfer of bacteria from the skin of the surgical staff to the air in the operating room in hospitals. Philip (2011) noted that insufficient provision of surgical gowns in hospitals is common irrespective of their functions especially now that bone and blood diseases are in increase world wide. The finding also showed that patient gowns are not provided in government hospitals. This is in line with Thamotara (2013) who stated that patient gowns, and diapers are affordable medical textiles but most hospital management never consider the provision as essential in hospitals. Chinta and Veena (2013) maintained that patient gowns are essential healthcare medical textile that is lacking in both private and government hospitals. The finding also revealed that bedside curtains and bedding are enough in government hospitals in the area of study. Selcuk, et al (2013) stated that high quality, bedding that remind patients of their own beds are not affordable in hospitals. Selcuk et el (2013) also noted that the deficiency in supply of medical textile at appropriate time is responsible for increase of nosocomia diseases such as vancomycin resistant entrococci among others.

The finding revealed that medical textiles are not used appropriately in the area of study. The finding revealed that patients' gowns are not worn by patients in government hospitals in Abakaliki Urban to protect their street clothes, and give comfort. Petel (2014) noted that patients fail to wear patients gown which promotes sterility in hospitals. The finding also revealed that bedding are not used to cover patients' mattresses and pillows. This is in line with Dessai (2013) who noted that hospital managements do not always supply high quality bed sheet to hospitals to keep patients comfortable. He further stated that patients appreciates value and comfort of good bedding whether disposable or re-usable bedding. The finding revealed that curtains are not effectively used to protect patients from sunrays and other environmental hazards in the area of study and that face mask and surgical gown are not used to protect the street clothes of medical personnel and to protect them from infections. This is in line with

Ogbonna (2012) who noted that some residence doctors do not use sterilized surgical gowns, hand glove face mask and cap while treating patients in hospitals.

## CONCLUSION

The study has assessed the medical textiles in government hospitals in Abakaliki Urban, Ebonyi State Nigeria. The study ascertained the available of medical textiles and the uses in the area of study. Based on the findings, the medical textiles available in the government hospitals in Ebonyi State are not enough as expected. Consequently, medical textiles are not effectively used in the area of study. Utilization of well sterilized medical textiles in hospitals is an effective strategy for control and treatment of infections and diseases by healthcare personnel. There is need, therefore, to enhance adequate supply of medical textiles in hospitals for sustainable healthy life in the area of study.

## RECOMMENDATIONS

Based on the finding of the study the following recommendations are made;

1. There should be frequent provision of medical textiles in the hospitals by the hospital management and the medical textiles should be changed as when due.
2. The medical personnel should insist on the provision of enough proper medical clothing before working.
3. The federal government should provide antimicrobial clothing protection and other medical textiles for all the workers in the government hospitals in Abakaliki Urban.

## REFERENCES

- Abonyi S.O., Okereke, S.C., Omebe C.A. & Anugwo, M. (2006). *Foundation of educational research and statistics*, Enugu. Fred Oga Publisher.
- Chinta, S.K. & Veena, K.V. (2013). Impact of textile in Medical Field. *International Journal of latest Trends in Engineering and Technology* 2(1) 142-143.
- Daniel, H. (2008). Altar and Table: A, phenomenology of the surgeon. *Priest Yale Journal of Biology and Medicine* 4 (18-22).
- Desai, A.A. (2013). *Medical Textile: Healthcare and Hygiene products*. San Blue Enterprises Put Ltd.
- Fijan, S. & Turk, S.S. (2012). *Hospital Textile, Possible vehicle for Healthcare*, Associated Infection United State Library of Medicine.
- Henry, M. (2010). *New Technology helps Medical textile fight Hospital Germs*. Accessed on 11<sup>th</sup> December 2014 from [www.fiberjournal.com](http://www.fiberjournal.com).
- Kerwat, K. & Wulf, H. (2008). *Hospitals Hygiene Clothing in Hospitals*. Anastheso Intensivemed Notfalimed Schmerzther.
- Martin, E.A. (2010). *Concise Medical Dictionary*. Oxford Paperback.
- Ogbonna, O. (2012). *Lassa Fever Infection*. Leadership by leadership newspaper.
- Petel, M. (2014). *What is real choice for health and hygiene textile? Re-usables or disposables*. USA. Router Bridge Press.

- Philip, J. (2011). *A brief History of surgical Gown Development care and Testing*. National Association of Institutional Linen Management. Rochester, Minnesota.
- Reynolds, H.N., Rogove, H., Bander, J. (2011). *A working lexicon for the tele intensive care units*. Retrieved on Oct. 2<sup>nd</sup> 2015 from <http://www.doh.wa.gov/youandyourfamily/illnessandDiseaseAssociatedinfections/infectionscentraline/TypesofHospital/Units>.
- Scarlet, R. Deliv, R. & Manes. L.R. (2010). *Implantable Medical Textile: characterization and Applications*. Liberec. Czech Republic.
- Selcuk, A. Sibel, K. & Cetin, C. (2013). *Surgical gown: Protection and comfort*. Retrieved on 11<sup>th</sup> January 2015 from <http://medicuniforms-apparel.Medical-supplies-equipmentcompany.com/PPF/page10/197/articule.asp>
- Thamorhara, G. (2013) *An analysis of medical textiles*. Accessed on 12 January 2015 from <http://textilelearner.blogspot.com/2012/02/introduction-of-medical-textiles.htm/#ix2zk8RO9G1>
- Thamothara, G. (2013). *An analysis of medical textiles*. Retrieved on 20 November, (2014) from [www.fibre2fashion.com](http://www.fibre2fashion.com).
- Ukwills, T. (2012). *Medical textiles*. Retrieved on 15<sup>th</sup> December 2014 from <http://www.srudymode.com/essays/medicaltextile>.