

COMPARISON OF ENVIRONMENTAL FACTORS REGARDING COMMUNICABLE DISEASE CONTROL MEASURES BETWEEN PUBLIC AND PRIVATE SECTORS HOSPITALS OF PESHAWAR, KHYBER PAKHTUNKHWA

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ABSTRACT

Introduction: Health care sector of a country needs special attention from the government as the quality of health care provides hope and relief to the patients and their dependents. The present study comparing environmental factors regarding safety control measures between public and the private sector hospitals will provide guidance in the area of environmental cleaning practices in hospitals.

Materials & Methods: This was a cross sectional comparative study conducted from October to December 2014 in two selected Tertiary care hospitals, one each from private and public sector, namely Rehman Medical Institute and Khyber Teaching Hospital, Peshawar, respectively. Two hundred patients and attendants in the medical and surgical wards of these hospitals were surveyed after informed consent through a self-administered questionnaire regarding various hygienic and safety measures being practiced in these hospitals. Data were analyzed by SPSS 20.0.

Results: Of the 200 subjects sampled (100 from each hospital), the overall impression was that the private hospital was focusing on most of the relevant aspects of control measures for spread of communicable diseases in the hospital setting. Major disparities were observed in the safety control measures being practiced in the public and private hospitals; of 21 items assessing control measures, 07(33.3%) were high risk differences, 06(28.6%) were showing differences that needed attention while the remaining 08(38.1%) items showed concordance in practice.

Conclusion: Public sector hospitals of Peshawar, Khyber Pakhtunkhwa need to implement stricter safety control measures to combat the spread of hospital-based spread of communicable diseases.

Key Words: Environment and Public Health; Communicable Diseases; Hospitals, Public; Hospitals, Private; Public Health; Patient Safety; Safety Management.

INTRODUCTION

Hospitals are among the most expensive facilities to build, due to complex infrastructure, expensive diagnostic and treatment technology, prevailing government regulations, and safety codes.¹ Deciding to invest in hospital design, and deciding what elements to incorporate into a newer facility, requires a clear understanding of the intended outcomes.

Quality has become a key determinant in both industrial and service sector to gain maximum return on investments and also significantly contributed in reduction of cost.^{2,3} In healthcare, patient perceptions are considered

to be the major indicator in order to assess the service quality of a healthcare organization.⁴⁻⁷ It means that customer satisfaction is the major device for critical decision making in selecting a healthcare services, and quality of services delivered to the customers should meet their perceptions.^{8,9}

In Pakistan most of its population is living in rural areas and small proportion is living in urban areas.¹⁰ The population in rural areas especially and the populations in urban area to some extent are deprived of fundamental healthcare facilities as majority of the public and private hospitals are located in big cities.¹¹

Patients' perceptions about the services provided by a particular health care organization also affects the image and profitability of the hospital^{12,13} and it also significantly affects the patient behavior in terms of their loyalty and word-of-mouth repute.^{14,15}

Healthcare sector is considered to be the major service sector for a country as it plays a vital role to develop and maintain a healthy human capital to achieve national goals. In many countries around the globe, healthcare sector has also become a highly competitive and fast growing service industry.^{16, 17}

The present study aimed to provide important knowledge regarding various controllable hospital-based environmental factors in communicable disease spread; it compared patient safety and communicable disease control measures in two major tertiary care public and public sector hospitals of Peshawar, Khyber Pakhtunkhwa (KP), so that recommendations could be formulated to address safety issues. To the best of our knowledge, this is the first study to address this issue in Peshawar.

Objectives

1. To assess the knowledge, attitude and practices of hygienic measures in two major tertiary care public and private hospitals of Peshawar, KP.
2. To compare the public and private hospitals with regard to hygienic measures affecting patient safety and control of communicable diseases.

MATERIALS & METHODS

This Cross Sectional Comparative study was conducted from October to December 2014 on two major public and private tertiary care hospitals of Peshawar (Khyber Teaching Hospital and Rehman Medical Institute respectively); medical and surgical wards patients and attendants were selected for the

study. There were 200 subjects (including patients and attendants) and convenience sampling technique was used for data collection. Subjects who were present and willing to participate in the study after informed consent were included. Data were collected using self-administered questionnaires and entered into SPSS version 20 for analysis. Calculations were done for frequencies, percentages, proportions, ratios, means and S.D. Comparisons were done on the basis of the two hospitals using the Chi Square test, keeping $p \leq 0.05$ as significant.

RESULTS

Table 1 shows the demographic characteristics of all the subjects (Patients and attendants). Out of total 200 subjects (100 from each hospital), 144(72%) were males and 56(28%) were females; 128(64%) subjects were from Medicine ward and 72(36%) from Surgery. The mean age of all the subjects was 32.51 ± 11.04 .

Table 1: Demographic data of all the subjects (n=200)

Variables		Frequency (%)
Gender	Male	144(72)
	Female	56(28)
Hospital Type	Private	100(50)
	Public	100(50)
Ward	Medicine	128(64)
	Surgery	72(36)
Age in years	Mean \pm SD	32.51 ± 11.04

When asked about the hygienic condition of wards and hospital, (whether it is cleaned on regular basis by the housekeeping staff or not) 78% subjects replied that it is cleaned on daily basis while 17.5% of the respondents answered it negative (Figure 1).

Regarding cleanliness condition of dustbins (whether they are cleaned on daily basis or not), 59.5% of the subjects responded yes, while 39.5% reported it negative (Figure 2).

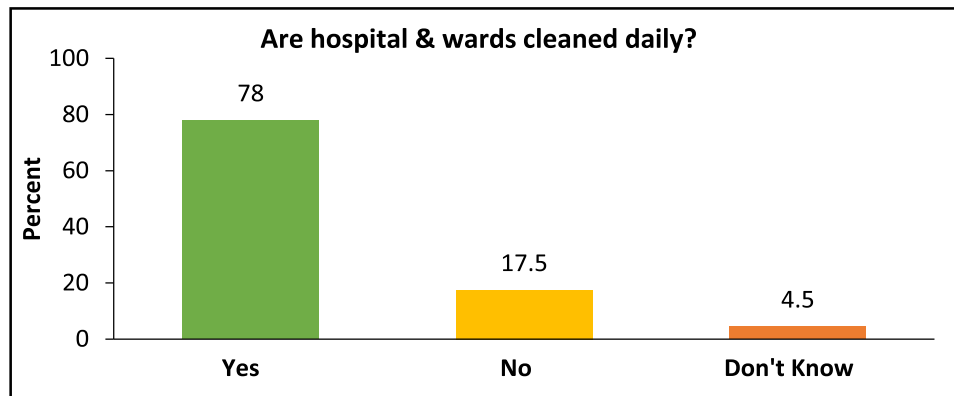


Figure 1: Hygienic Condition of Hospitals (n=200)

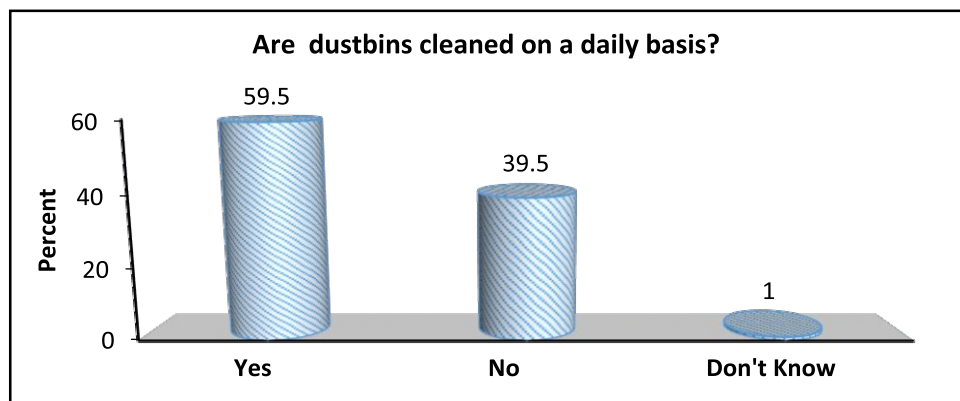


Figure 2: Cleanliness of Dustbins (n=200)

Table 2 depicts the contamination status of both hospitals. When asked whether the area contaminated with the body fluids was cleaned immediately or not, 91 subjects from private hospital and only 26 from public hospital replied positively; most of the subjects (69) from public hospital reported it negative ($p<0.001$). The availability of dustbins and soap was answered in "yes" by 99 and 92 subjects from private hospital and 33 and 14 from public hospital; it was reported negative by most of the subjects (67 & 85) from public hospital with a significant difference ($p<0.001$). Changing bed linen on daily basis was reported positive by 99 subjects from private hospital while 74 subjects from public hospital reported it negative ($p<0.001$). All the subjects were asked about the safety measures (Gloves, masks etc.) used by the medical doctors and nurses; 95 subjects from private hospital and 45 subjects from public hospital were agreed with such safety measures used

by medical staff while 37 subjects from public hospital reported it negative ($p<0.001$). Similarly all the subjects were asked about the sterilized condition of medical equipment before usage; 91 subjects from private hospital and 28 subjects from public hospital replied positively while 48 subjects from public hospital did not know about such status of medical equipment. Hygienic condition of water storage system was reported positive by most of the subjects (82 & 54) from both the hospitals, but was significantly different ($p<0.001$). As to whether animals (cats, rats, etc.) are found in the hospital, 90 subjects from private hospital replied negative while 88 subjects from public hospital reported positive ($p<0.001$). Isolation chamber was available according to 82 subjects from private hospital while most of the subjects from public hospital (53) did not know about availability of isolation chamber ($p<0.001$).

Table 2: Comparison between Private & Public Hospitals (n=100 each)

Variables		Private Hospital Frequency	Public Hospital Frequency	p value
Area contaminated with body fluids (Sputum, Blood) cleaned immediately	Yes	91	26	<0.001
	No	05	69	
	Don't know	04	05	
Availability of dustbin per bed	Yes	99	33	<0.001
	No	01	67	
Availability of Soap	Yes	92	14	<0.001
	No	08	85	
	Don't know	0	01	
Bed linen changed on daily basis	Yes	99	16	<0.001
	No	01	74	
	Don't know	0	10	
Medical staff (doctors, nurses) using safety measures (gloves, mask etc.)	Yes	95	45	<0.001
	No	03	37	
	Don't know	02	18	
Medical equipment (tongue depressor, thermometer etc.) sterilized before each use	Yes	91	28	<0.001
	No	04	24	
	Don't know	05	48	
Water storage system hygienic	Yes	82	54	<0.001
	No	11	23	
	Don't know	07	23	
Animals (cats, rats, etc.) found in the ward	Yes	05	88	<0.001
	No	90	07	
	Don't know	05	05	
Isolation chamber available for patients	Yes	82	37	<0.001
	No	13	10	
	Don't know	05	53	

Table 3 provides a comparison for 21 items based on percentage differences between the responses of subjects of public and private hospitals. Differences are categorized by color coding as Unimportant (No color, <50% difference), Needs Attention (Orange, 50-70% difference) and High Risk (Red, >70% difference). It can be seen that 08/21(38.1%) items are of Unimportant category, 06/21(28.6%) items are in the Needs Attention category, while 07/21(33.3%) items are in the

High Risk category. All the High Risk items are those that favor persistence and transmission of communicable diseases, which are reportedly higher in hospitals with low hygiene standards. Most items in the Needs Attention category would also be considered as factors for spread of communicable disease but at a lower priority and have more to do with good hygiene and cleanliness habits of the hospital.

Table 3. Responses of subjects showing percent differences between private and public sector hospitals (n=100 each)

S. #	Variables	Public (%)	Private (%)	Percent Difference
1.	Hospital clean?	57	99	42
2.	Mopping?	25	97	72
3.	Contaminated floor clean immediately?	26	91	65
4.	Dustbin available?	33	99	66
5.	Dustbins clean on daily basis?	20	99	79
6.	Toilet clean?	37	97	60
7.	Soap/hand wash available?	14	92	78
8.	One bed for one patient?	92	100	08
9.	Beds on optimum distance?	19	98	79
10.	Bed lining changed daily?	16	99	83
11.	Medical staff uses safety measures?	45	95	50
12.	Medical equipment sterilized?	28	91	63
13.	Ward temperature is optimum?	73	95	22
14.	Is there a proper ventilation system?	34	90	56
15.	Water storage system hygienic?	54	82	28
16.	Satisfaction with cleanness of food?	72	89	17
17.	Air freshener used?	12	86	74
18.	Mosquitoes repellent used?	37	66	29
19.	Flower bouquet allowed?	23	40	17
20.	Animals found in hospital?	88	05	83
21.	Isolation chamber available?	37	82	45

Color coding for item differences: No color = Unimportant; Orange Color = Needs Attention; Red Color = High Risk

DISCUSSION

The observed findings of the study makes it apparent that healthcare facilities provided to patients of the private hospital were better and also contributed a positive role in order to lower the hospital-based communicable disease burden. This finding is validated by another study showing that private hospitals in Egypt are delivering better quality of services as compared to public hospitals.¹⁸ Similarly, the patient realization about quality of healthcare drives a greater proportion of the population towards private hospitals in Bangladesh.¹⁹⁻²² However, a study conducted to measure the patient's satisfaction in

Pakistan by Shabbir et al.²³ reported that public hospitals in Islamabad are providing better quality of services to patients as compared to private hospitals; these results are quite different with the other studies conducted on this topic.^{18,21} It may be that these public hospitals are located in the capital city of Pakistan and are having better healthcare facilities as compared to other public hospitals, even public hospitals located in the adjacent city Rawalpindi. Private hospitals in Pakistan are making better efforts as compared to public hospitals; the private hospitals have to depend on customers in order to meet the

financial constraints and gain profitability like other private sector organizations. Results of the present study also showed that doctors, nurses and supporting staff of the private hospital aimed to provide proper patient care, clean and healthy environment, sterilized equipment, efficient attendance of patient calls, availability of medical tests, pharmacy facilities within the hospital and development of a feedback mechanism.

These results also validate the common perception of patients that public hospitals in Pakistan are not delivering quality of healthcare services. Major reason of this poor

quality is due to lack of implementation of quality management systems in the healthcare sector.

CONCLUSION

The spread of communicable diseases from hospital-based settings in Peshawar, Khyber Pakhtunkhwa, Pakistan, are more likely to be from the over-burdened busy public hospitals with poor standards of environmental hygiene and sanitation compared to competition-driven and well-managed private hospitals. A lot needs to be done to improve the hygienic standards of public hospitals.

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