Effect of In-House Training of Housekeeping Staff on Biomedical Waste Management

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A B S T R A C T

Biomedical Waste (BMW) generated in health care facilities is a potential threat for the personnel handling them. Utmost precaution needs to be taken by healthcare workers (HCW) who handle them. In India the amount of BMW generated in a hospital ranges between 0.5-2kg/bed/day. According to WHO, 85% of the BMW generated in hospitals is non- hazardous; 10% is infectious and 5% is non- infectious but according to Glenn *et al*, the infectious waste in the developing countries may be as high as 35 % depending on the amount of waste that is being generated. Healthcare personnel who handle and transport BMW are usually unskilled and uneducated housekeeping staff with little or no knowledge about segregation and disposal of biomedical waste. Hence the study aims at the training of healthcare personnel who handle BMW and to evaluate the outcome of the training. The outcome has surprised and the results obtained after training were plotted.

Introduction

Biomedical Waste (BMW) generated in health care facilities is a potential threat for the personnel handling them. About one-fourth of the BMW generated is hazardous and utmost precaution needs to be taken by healthcare workers (HCW) who handle them (Government of India, 2015). In a highly populated country like India the amount of BMW generated in a hospital ranges between 0.5-2kg/bed/day (Daljit *et al*., 2014; ENVIS, 2006). Pondicherry Pollution Control Committee states that nearly 1 ton of biomedical waste is generated in Pondicherry region every month (ENVIS, 2006; Joseph *et al*., 2014). According to WHO, 85% of the BMW generated in hospitals is non-hazardous; 10% is infectious and 5% is non-

infectious (New WHO Handbook on Healthcare Waste Management, 2013). However according to Glenn *et al.*, out of the Clinical wastes generated in developing countries, the infectious waste may be as high as 35 % depending on the amount of waste that is being generated (ENVIS, 2006; New WHO Handbook on Healthcare Waste Management, 2013). Even today some of the hospitals do not give much importance to the management of biomedical wastes (Daljit *et al*., 2014). Healthcare personnel who handle and transport BMW are usually unskilled and uneducated housekeeping staff with little or no knowledge about segregation and disposal of biomedical waste.

To assess level of awareness about BMW management among house keeping staff in a tertiary care hospital and to evaluate the impact of 'In-House Education and Training session' on BMW management

Materials and Methods

The study was conducted in Pondicherry Institute of Medical Sciences, a tertiary care hospital in Pondicherry. The Health Care Workers (HCW) included in the study were the housekeeping staff involved in collection, segregation and disposal of BMW and were assigned to various wards, ICUs and laboratories of PIMS.

The existing level of awareness was assessed by conducting a pre-test using a validated questionnaire in vernacular language. After pre-test, the participants underwent an in-house training session in vernacular language regarding correct methods of segregation, transport and disposal of BMW by didactic lecture followed by video show. Following the training session, a post test was conducted to know the effectiveness of the training session.

Results and Discussion

The pre-test and post-test scores were evaluated and marks scored by participants are tabulated in table 1. Out of a total score of 10, it was seen that 13.5% (14 out of 103) of participants scored0, 14.6 %(n= 15) of them scored between 1to 6 and 71.9 % (n=74) scored between 7 and 10. The post-test showed that no participant had scored less than 5.

It was also observed that 15.5% of participants scored between 7 to 9 and 84.5% (n=87) of them scored 10which reflects the participant's knowledge of biomedical waste management before and after the training shown clearly in the pie diagram in figure 1.

An interesting finding was that all the 14 participants who scored 0 during the pre-test showed a significant improvement with their post-test scores ranging from 7 to 10 shown in figure 2.Wilcoxon signed rank test was done which showed a p value <0.0001.

Table.1 Pre – Test and Post – Test performance

Marks Secured	Pre-Test (%)	Post-Test (%)
0	13.5	0
1-6	14.16	0
7-9	31	15.5
10	40.8	84.5

Fig.1 Knowledge of trainees (a) before the training and (b) after the training
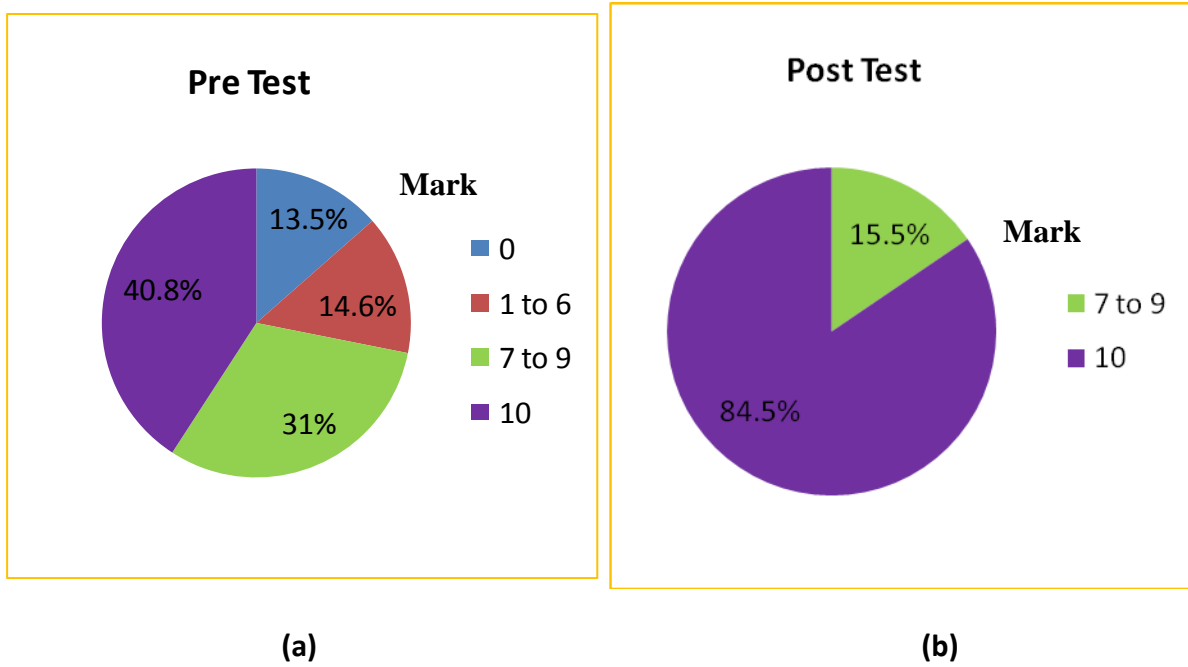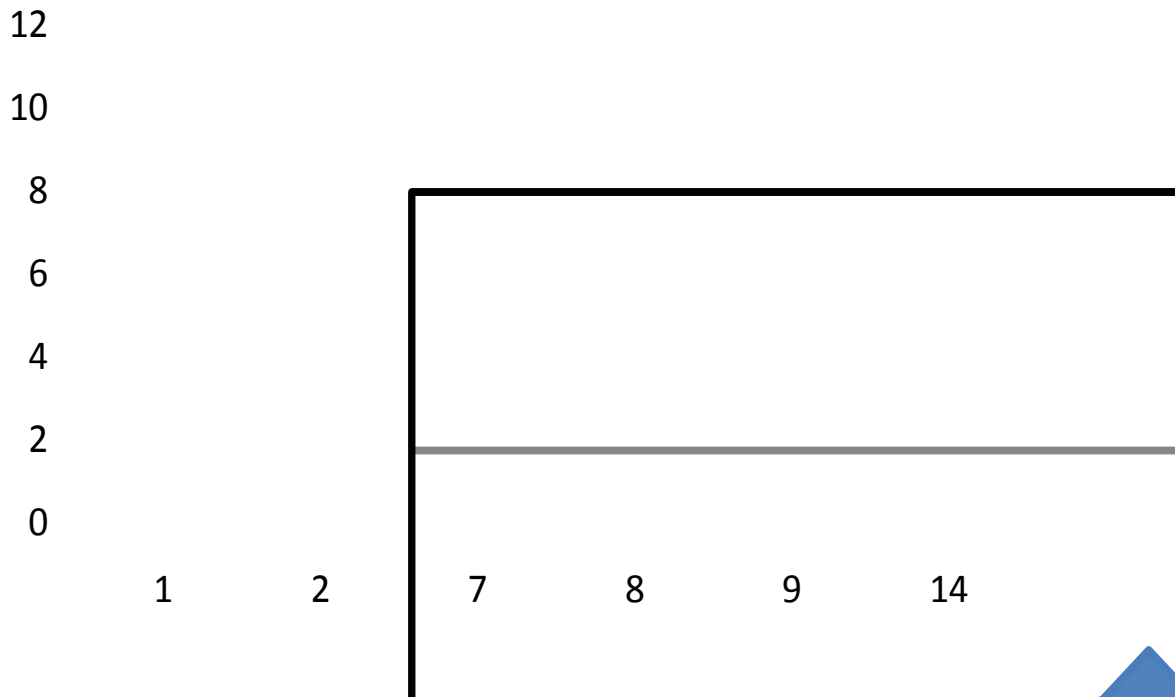

(a)   (b)

Fig.2 Improvement in post-test performance from zero marks due to In-House Training

In conclusion, it is necessary that regular in house training programs on BMW should be conducted primarily for the house keeping staffs who are actively involved in the segregation, transport and disposal of BMW thereby preventing occupational hazards in this group of healthcare workers.

References

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