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RESEARCH ARTICLE

KNOWLEDGE AND PRACTICES OF WARD ATTENDANTS REGARDING BIOMEDICAL WASTE MANAGEMENT

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ABSTRACT

"BIO MEDICAL WASTE" is any waste, which is generated during diagnosis, treatment or immunization of human beings. This waste is also generated during research activities or in the production or testing of biological material. Today, there is increasing demand for the broader level of knowledge and skills to handle the waste from doctors, nurses, ward attendants, sweepers, laboratory technicians and all others working in the hospitals. For safe Bio medical waste management hospital workers should be familiar with the rules and regulations, practices of biomedical waste management. Inadequate and inappropriate knowledge of handling of healthcare waste may have serious health consequences and a significant impact on the environment as well. A quantitative research approach with a descriptive research design was selected to assess the knowledge and practices of ward attendants regarding biomedical waste management in G.G.S Medical Hospital, Faridkot, Punjab. Total enumerative sampling was done and all the 60 subjects were selected. A socio demographic sheet, a questionnaire and a self reporting checklist was selected. Ethical permission to conduct study was obtained from the concern institutional ethical committee. The results of the study revealed that the majority of ward attendants had average knowledge and had good practices. There is a positive relationship of knowledge and practices with demographic variables i.e. with age and educational qualification.

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INTRODUCTION

"BIO MEDICAL WASTE" is any waste, which is generated during diagnosis, treatment or immunization of human beings. This waste is also generated during research activities or in the production or testing of biological material.[1] The different location or points of generation of waste in a health care establishment are operation theatres / wards / labour rooms, Dressing rooms, Injection rooms, Intensive Care Units, Dialysis room, Laboratory, Corridor, Compound of hospital or nursing home.[2] Inadequate and inappropriate knowledge of handling of healthcare waste may have serious health consequences and a significant impact on the environment as well. It is estimated that annually about 0.33 million tonnes of hospital waste is generated in India and, the waste generation rate ranges from 0.5 to 2.0 kg per bed per day.[3] According to BMW (management and handling) Rule 1998 all the BMW shall be treated and disposal according to the rule with the help of requisite BMW treatment facilities like incinerators, autoclave, microwave system of waste at a common waste treatment facility or any other waste treatment facility. In this background in persuasion to the directive of court the Ministry of Environment and forests, Government of India notified the BMW (management and handling) Rule on 27th July 1998; under the provision of environment Protection Act 1986. Adequate knowledge about the health hazard of hospital waste, proper technique and methods of handling the waste, and practice of safety measures can go a long way toward the safe disposal of hazardous hospital waste and protect the community from various adverse effects of the hazardous waste.

OBJECTIVES OF THE STUDY

- To assess the knowledge of ward attendants regarding biomedical waste management in G.G.S hospital, faridkot , punjab .
- To assess the practices of ward attendants
- To find out the relationship of knowledge and practices of biomedical waste management with selected variables.

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MATERIALS AND METHODS

Quantitative research approach, Descriptive design was used to assess the knowledge and practices of ward attendants regarding biomedical waste management in GGS Medical hospital, faridkot , punjab .The target population of this study was all ward attendants of the hospital. Sample size was 60.Non-probability, enumerative sampling technique was used.Research tool consists of three parts as under: part 1:Socio Demographic profile of respondent, part ii: Questionnaire to assess the knowledge regarding biomedical waste management and part iii: self reporting checklist to assess the practice regarding bio medical waste management. Ethical committee of University College of Nursing and BFUHS gave ethical approval for the study to be conducted. Apart from this, written informed consents were taken from each study subject. Confidentiality and privacy of the study subjects was taken care of. The analysis was done using descriptive statistics like frequency and percentage. Inferential statistics (chi square) was used to analyze the data.

RESULTS

The results of data analysis is organized and presented under following major headings:

Table 1. Frequency and Percentage distribution of Sample Characteristics

N= 60

S.No.	Variables	Frequency (n)	Percentage %
1.	AGE		
	21-30 years	33	55
	31-40 years	11	18.3
	41-50 years	9	15
	51-60 years	7	11.6
2.	GENDER		
	Male	39	65
	Female	21	35
3.	RELIGION		
	Sikh	48	80
	Hindu	12	20
4.	EDUCATION		
	QUALIFICATION	6	10
	Upto primary	18	30
	Middle	36	60
	Matric and above		
5.	LOCALITY		
	Urban	36	60
	Rural	15	25
	Semi-urban	9	15
6.	SOURCE		
	OF INFORMATION	10	16.7
	News paper, Magazine	10	16.7
	Special training	36	60
	colleguesl/ shift workers	4	6.7
	T.V /radio		

Table 1 shows that 55% (33) ward attendants were in age group 21-30 years,18.3% (11) were in 31-40 years, 15% (9) were in age group of 41-50 years and 11.6% (7) were in age group of 51-60 years. More than half of the ward attendants 65% (39) were male and 35% (21) were females. Mostly the ward attendants were Sikhs i.e 80% (48) and 20% (12) belong to hindu religion. As per educational status, none of the ward attendants were illetrate,10%(6) were educated upto primary ,less than one third i.e.30% (18) were educated upto middle followed by 60% (36) were educated upto matric and above. As per locality, slightly more than half i.e. 60%(36) ward attendants live in urban area, less than one third i.e. 25% (15) in rural area ,only 15%(9) live in semi-urban area and none resides in slum area. Newspaper, magazines were the source of information for ward attends i.e. 16.7% (10), 16.7% (10) got information from special training, more than half 60% (36) got information from collegues/shift workers and only 6.7% (4) got information from T.V./ radio about bio medical waste management.

SECTION II:

Level of Knowledge	Range of knowledge Score	Frequency (n)	Percentage (%)
Poor	0-5	3	5.0
Average	6-10	43	71.7
Good knowledge	11-15	14	23.3
Total		60	100

Table 2: depicts that 3 i.e (5%) of ward attendants had poor knowledge regarding bio medical waste management, more than half i.e.43 (71.7%) had average knowledge, and only 14(23.3%) had good knowledge regarding bio medical waste management. This table depicts the mean and standard deviation of knowledge score. Mean is 9.08 and standard deviation is ±1.56. Maximum possible score was 15, maximum obtained score was 12 and minimum obtained score was 5.

Table 3. Mean and standard deviation of knowledge score

Area	Maximum possible score	Maximum obtained score	Minimum obtained score	Mean±SD	Mean %
Knowledge	15	12	5	9.08±1.56	

Table 5. Frequency and percentage distribution of practices of ward attendants

S. NO	Level of practices	Range of practice Score	Frequency (n)	Percentage (%)
1.	Poor practices	0-3	-	-
2.	Average practices	4-7	6	10%
3.	Good practices	8-10	54	90%
	Total		60	100%

Table 3:depicits that only 6 (10%) of ward attendants practice of bio medical waste management is average and maximum of the ward attendants i.e 54 (90%) practices were found good and none of them have poor practices. This table depicts the mean and standard deviation of practice score. Mean is 9.07 and standard deviation is ±1.44. Maximum possible score was 10, maximum obtained score was 10 and minimum obtained score was 4. This table depicts that 45(75%) of subjects practices of discarding sharp waste were good. 57 (95%) subjects practice of discarding urine bag in blue bin is good.

The practices of ward attendants were found good regarding handling human organs/placenta/plastercast (76.6%) ,broken ampoules (95%), general waste (100%) razor/ scalpel (75%), cotton/dressing (95%) ,I.v set/ catheters (100%), plastic bottles (100%) and regarding gloves /syringes/bloodbag (85%) of subjects have good practices. Table 6- shows association between knowledge and sample charactericts (age and educational qualification). It was found that a statistically non-significant association was found between gender, religion, locality and source of information and knowledge level at p value >0.05.

Table 6. Mean and standard deviation of practice score of biomedical waste management

Area	Maximum possible score	Maximum obtained score	Minimum obtained score	Mean	Standard deviation
Practice	10	10	4	9.07	±1.44

Table 7. Item wise analysis of practice checklist

S.NO	Items to be discarded in bags.	Frequency of right responses (n)	Percentage of right responses (%)
1	Sharp waste/needles/blades.	45	75
2	Urine bag.	57	95
3	Human organs/placenta/ plastercast	46	76.6
4	Broken ampules/vials/slides.	57	95
S.NO	Items to be discarded in bags.	Frequency of right responses (n)	Percentage of right responses (%)
5	General waste, wrappers	60	100
6	Razor, scalpel	45	75
7	Cotton/dressings.	57	95
8	I.v set/ catheters	60	100
9	Plastic bottles.	60	100
10	Gloves/syringes/bloodbag	51	85

Table 8: Association of knowledge with sample characteristics

N=60

Sr. No.	Variables under study	Knowledge						Chi square
		Poor		Average		Good		
		(n)	(%)	(n)	(%)	(n)	(%)	
1.	Age							
	21-30years	0	0	19	31.6	14	23.3	
	31-40years	0	0	11	18.3	0	0	χ^2=31.4
	41-50years	3	5	6	10	0	0	df=6
	51-60years	0	0	7	11.6	0	0	p=.000
2.	Gender	1	1.6	26	43	12		χ^2=4.35
	Male	2	3.3	17	28	2	20	df=2
	Female						3.3	p=.114^{NS}
3.	Religion							
	Sikh	3	5	34	57	11	18.3	χ^2=0.791
	Hindu	0	0	9	15	3	5	df=2
	Muslim	0	0	0	0	0	0	p=0.673^{NS}
	Christian	0	0	0	0	0	0	
4.	Education qualification							
	Illetrate	0	0	0	0	0	0	
	Upto primary	3	5	3	5	0	0	χ^2=39.3
	Middle	0	0	18	30	0	0	df=4
	Matric and above	0	0	22	37	14	23.3	p=0.00
5.	Locality							
	Urban	3	5	22	37	11	18.3	χ^2=6.689
	Rural	0	0	12	20	3	5	df=4
	Semiurban	0	0	9	15	0	0	p=0.153^{NS}
	Slum	0	0	0	0	0	0	
6.	Source of information							
	Newspapers/magazine	16	27	0	0	27	45	χ^2=0.858
	Special training	4	6.6	0	0	4	6.6	df=2
	collegues/ shift workers	4	6.6	0	0	5	8.3	p=0.651^{NS}
	T.V /radio	0	0	0	0	0	0	

*NS=Non Significant (p>0.05) **Significant (p<0.05)*

Table 9. Association of practice with sample characteristics

Sr.No.	Variables under study	Practices						Chi square
		Poor		Average		Good		
		(n)	(%)	(n)	(%)	F(%)	(%)	
1.	Age	0	0	0	0	33(55)	55	
	21-30years	0	0	0	0	11	18.3	χ^2=18.73
	31-40years	0	0	3	5	06	10	df=3
	41-50years	0	0	3	5	4	6.6	p=.000
	51-60years							
2.	Gender	0	0	4	6.6	35	58.3	χ^2=.008
	Male	0	0	2	3.3	19	31.6	df=1
	Female							p=.928^{NS}
3.	Religion	0	0	3	5	45	75	
	Sikh	0	0	3	5	9	15	χ^2=3.75
	Hindu	0	0	0	0	0	0	df=
	Muslim	0	0	0	0	0	0	p=0.053^{NS}
	Christian							
4.	Education qualification	0	0	0	0	0	0	
	Illetrate	0	0	3	5	3	5	χ^2=12.77
	Upto primary	0	0	0	0	18	30	df=2
	Middle Matric and above	0	0	3	0	33	55	p=0.002
Sr.No.	Variables under study	Practice						Total
		Poor		Average		Good		
5.	Locality							
	Urban	0	0	6	10	30	50	χ^2=4.44
	Rural	0	0	0	0	15	25	df=2
	Semiurban	0	0	0	0	9	15	p=0.108^{NS}
	Slum	0	0	0	0	0	0	
6.	Source of information							
	Newspapers/magazine	0	0	0	0	10	16.6	χ^2=4.44
	Special training	0	0	0	0	10	16.6	df=3
	collegues/ shift workers	0	0	6	10	30	50	p=0.217^{NS}
	T.V /radio	0	0	0	0	4	6.6	

*NS=Non Significant (p>0.05) **Significant (p<0.05)*

It shows association between practice and sample characteristics (age and educational qualification). It was found that a statistically non-significant association was found between gender, religion, locality and source of information and knowledge level at p value >0.05.

Conclusion

Findings of the study showed 13.1% elderly were malnourished and 35.2% were a risk of malnutrition. On other hand 9.8% had severe depression and 28.9% had mild depression. On the basis of the findings of the study, it is concluded that prevalence of malnutrition and depression among elderly is high in this area. There is significant association between malnutrition and depression among elderly. To ensure a healthy elderly population, improving the nutrition is one of the most important approaches. Depression could act as a powerful risk for malnutrition in elderly population that it should detected early.

The results are expected to help in designing policies and making plans regarding health care provision for the elderly.

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