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Research Article

Knowledge, Attitude And Practice Assessment About Bio –Medical Waste Management Among Healthcare Personnel In Government General Hospital, Andhra Pradesh

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ABSTRACT

In the persuasion of the aim of reducing health problems, eliminating potential risks, and treating sick people, healthcare services inevitably create waste which itself may be hazardous to health. The waste produced in the course of healthcare activities carries a higher potential for infection and injury than any other type of waste. Generation of biomedical waste is an unavoidable outcome of modern day Hospital care and practices. Safe handling of the BMW has revealed a significant impact on preserving and sustaining optimum level of human health and in mitigating environmental degradation or in preventing unfavourable climatic outcomes. The present study aimed to evaluate the levels of knowledge, attitude and practices regarding the management of biomedical waste among health care professionals in a government hospital of Andhra Pradesh and finally it was found that staff was lacking the proper awareness regarding the same. It is recommended to have proper training regarding biomedical waste management to avoid significant health hazards

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INTRODUCTION:

The hospital hygiene and safety of health care workers and communities are ensured by the process of health care waste management (HCWM). With the notification of the biomedical waste (BMW) rules, 1998, hospital waste management has been brought into focus in India. According to the rules, it is mandatory for the health care establishments to segregate, disinfect, and dispose their waste in an eco-friendly manner (1). The Indian health care sector includes corporate hospitals, private clinics, and medical and dental colleges that generate biomedical waste. This includes human and animal anatomical waste and treatment apparatus such as syringes and needles, as well as various materials used in the health sector in the process of diagnosis, treatment, and research. Biomedical waste is generated in hospitals, nursing homes, blood bank, and pathological laboratories during diagnosis, treatment, or immunization of various diseases (2) Generation of biomedical waste is an unavoidable outcome of modern day Hospital care and practices (3). Safe handling of the BMW has revealed a significant impact on preserving and sustaining optimum level of human health and in mitigating environmental degradation or in preventing unfavorable climatic outcomes (4,5). The policy makers and hospital administrators should implement a set of measures for enhancing their involvement in the process of waste disposal as the health care personnel constitute the key element in the process of hospital waste disposal (4,6). Although, there is an increased global awareness among health professionals about the hazards and also appropriate management techniques but the level of awareness in India is found to be unsatisfactory (7,8)

Hence, Assessment of knowledge, attitude and performance healthcare personnel with respect to biomedical waste management is most important as they will be in direct contact with it.

The aim of this study is to find out the knowledge and attitudes among healthcare professionals towards the bio medical waste management

OBJECTIVE

- To determine Knowledge levels among healthcare personnel about biomedical waste management.
- To determine Attitude levels among healthcare personnel about biomedical waste management.
- To determine practice levels among healthcare personnel about biomedical waste management.
- Impact of knowledge and attitude levels on practice among healthcare personnel about biomedical waste management.

METHODOLOGY:

Hypothesis:

Hypothesis1: knowledge levels of staff has less impact on their practice of biomedical waste management

Hypothesis 2: attitude of staff has less impact on their practice of biomedical waste management

Sampling technique: Random sampling method is used for collecting Data from hospital staff.

Sampling design: A prospective, cross sectional study

Analysis: Data will be analyzed using SPSS package. Simple Linear Regression test is used to analyze data.

Sample size: 150 samples have been collected from government general hospital

Inclusion criteria: Staff in the hospital who is directly involved in biomedical waste like doctors, nurses, and laboratory staff, housekeeping staff.

Exclusion criteria: This study excludes patients, administrative staff

RESULTS

Descriptive analysis has been made to measure following objectives. For each objective 3 important questions are taken and deep analysis is presented below

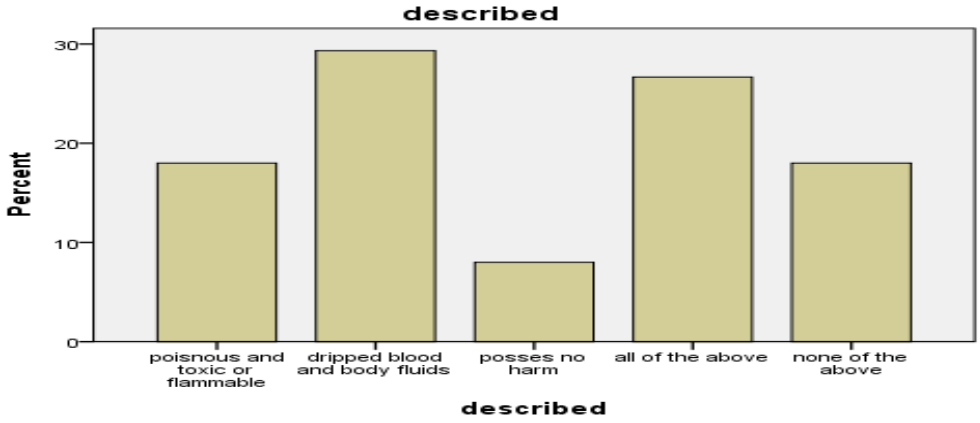
Objective 1: To determine Knowledge levels among healthcare personnel about biomedical waste management.

1. Biomedical waste was described by one of the statement?
   a) Materials that may be poisonous, toxic, or flammable and do not pose any disease relate risk.
   b) Waste that is saturated to the point of dripping with blood or body fluids contaminated with blood.
   c) Waste that does not pose a disease related risk
   d) All of the above.
   e) None of the above.

Table1: Described

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	poisonous and toxic or flammable	27	18.0	18.0	18.0
	dripped blood and body fluids	44	29.3	29.3	47.3
	possess no harm	12	8.0	8.0	55.3
	all of the above	40	26.7	26.7	82.0
	none of the above	27	18.0	18.0	100.0
	Total	150	100.0	100.0	

Fig1



From table 1, it is clear that out of 150 samples ,29.3% people described Bio medical waste as a "waste that is saturated to the point of dripping with blood and body fluids", 26.7% people described it as "materials that are poisonous, toxic, or flammable and do not pose any disease related risk, waste that is saturated to the point of dripping with blood and body fluids contaminated with blood, waste that do not pose any disease related risk".18% people described it as " materials that are poisonous, toxic, or flammable and do not pose any disease related risk.8% people described it as waste that do not pose a disease relate risk, 18% people answered none of the above indicates bio medical waste. But answer is bio medical waste is "waste that is saturated to the point of dripping with blood and body fluids. Clearly represented in figure 1.

2. According to BMW rules, waste should have disposed before?

a) 12 hours.
b) 36 hours.
c) 48 hours.
d) 72 hours.
e) 96 hours.

Table2: Store

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	12hours	53	35.3	35.3	35.3
	36hours	38	25.3	25.3	60.7
	48hours	35	23.3	23.3	84.0
	72hours	12	8.0	8.0	92.0
	96hours	12	8.0	8.0	100.0
	Total	150	100.0	100.0	

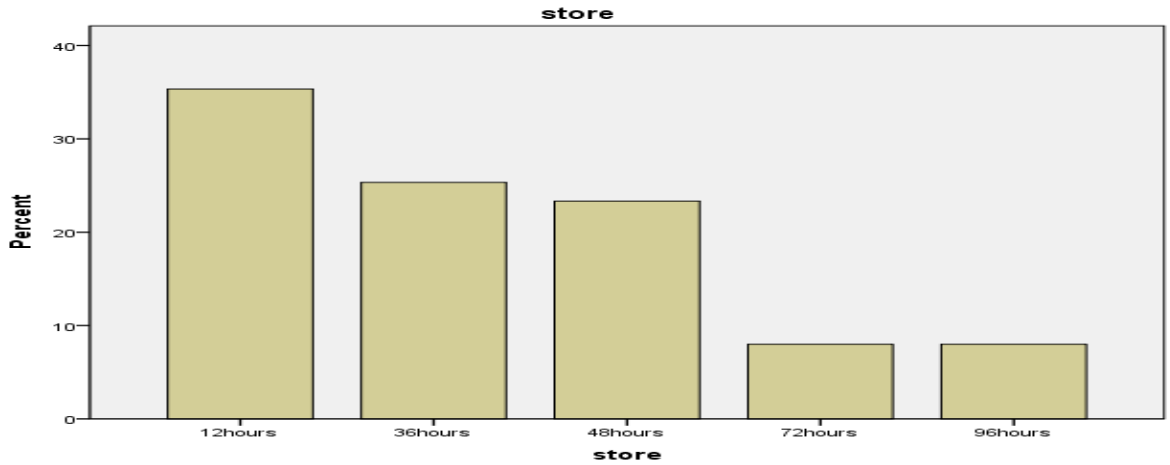


Fig:2

From Table 2, it is clear that out of 150 samples, 35.3% people answered that bio medical waste should be disposed within 12 hours according to BMW rules, 25.3% people answered that bio medical waste should be disposed within 36 hours, 23.3 % people answered that bio medical waste should be disposed within 48 hours, 8% people answered that bio medical waste should be disposed within 72 hours, 8% people answered that biomedical waste should be disposed within 96 hours. But according to BMW rules bio medical waste should be disposed within 48 hours. Just 1/4rth of sample has knowledge about storage of Biomedical waste. It is clearly represented in Figure 2.

3. Every staff who is involved in bio medical waste management should know about its generation and legislation?
   a) Highly agree
   b) Agree
   c) Disagree
   d) Highly disagree
   e) Neutral

Table3: Generation and Legislation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	highly agree	58	38.7	38.7	38.7
	agree	53	35.3	35.3	74.0
	disagree	15	10.0	10.0	84.0
	highly disagree	2	1.3	1.3	85.3
	neutral	22	14.7	14.7	100.0
	Total	150	100.0	100.0	

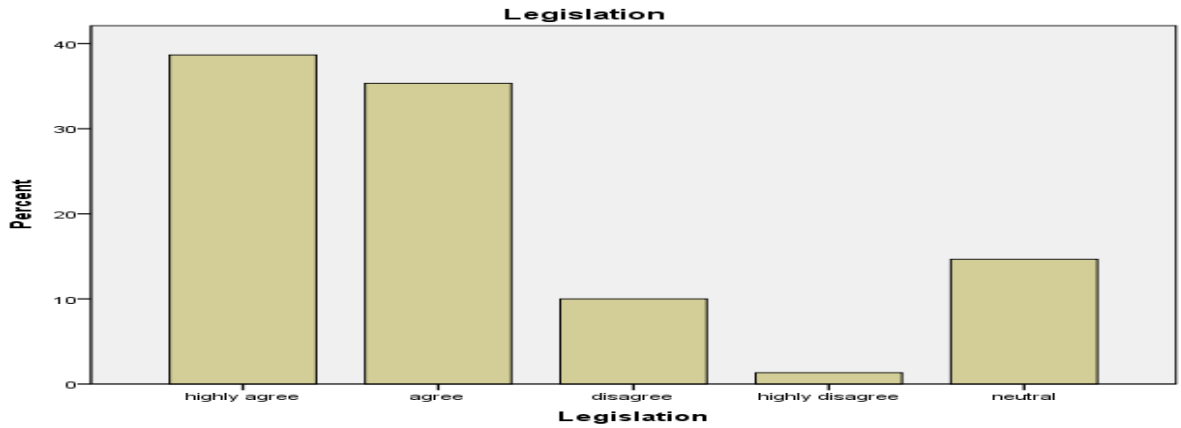


Fig 3

From table 3, it is clear that 38.7% people highly agreed that all the staff who is involved in Biomedical waste management should know about its generation and legislation, 35.3% people agreed that the staff should know about BMW generation legislation,14.7% people were neutral saying that it may be necessary or not even necessary to know about BMW generation and legislation, 11.3% people disagreed that there is no need of knowing about BMW generation and legislation. But fact is that staff should know about BMW legislation so they can follow best practices in biomedical waste management. It is clearly represented in figure 03.

Objective 2: To determine Attitude levels among healthcare personnel about biomedical waste management.

1. It is important to know about BMW generation and legislation?
   a) Highly agree b) Agree c) Disagree d) Highly disagree e) Neutral

Table 4: Knowledge

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	highly agree	52	34.7	34.7	34.7
	agree	39	26.0	26.0	60.7
	disagree	20	13.3	13.3	74.0
	highly disagree	5	3.3	3.3	77.3
	neutral	34	22.7	22.7	100.0
	Total	150	100.0	100.0	

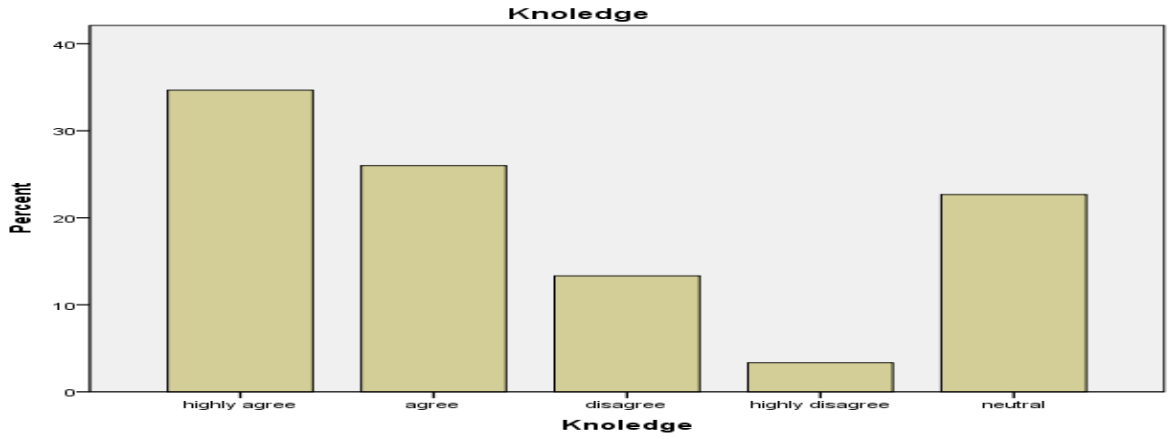


Fig 4

From the table 4, it is clear that 34.7% people highly agreed that it is important to know about bio medical waste generation and legislation, 26% people also agreed that it is important to know about generation and legislation of BMW, 22.7% people are neutral with this question, 16.4% people disagree that it is not important to know about generation and legislation of BMW. But it is fact that it is important to know BMW generation and legislation. Data is clearly represented in figure 04.

2. Do you think that labelling the container before filling it with waste is of any clinical significance?
   a) Yes, for doctors understanding.
   b) Yes, for patients understanding.
   c) Yes, for paramedical staff understanding.
   d) All the above
   e) Cannot comment

Table 5: Labelling

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	doctors	25	16.7	16.7	16.7
	patients	31	20.7	20.7	37.3
	paramedical staff	32	21.3	21.3	58.7
	all the above	32	21.3	21.3	80.0
	cannot comment	30	20.0	20.0	100.0
	Total	150	100.0	100.0	

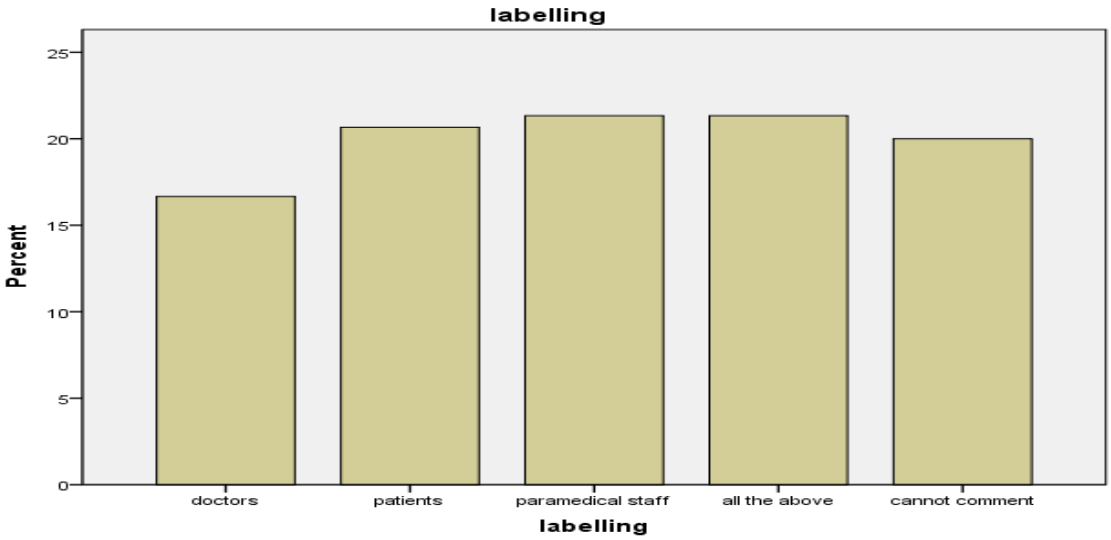


Fig 5

From the table 05, it is clear that out of 150 samples 21.3% people indicated that labelling of biomedical waste container for understanding of doctors, patients, paramedical staff, 21.3% people indicated labelling should be done for understanding, 20.7% people indicated it is for patient understanding, 20% does not wish to comment on this question, 16.7% people indicated that labelling is done for doctors understanding. But actually labelling is done for everyone understanding, and it is clearly represented in figure 05.

3. It is important to report to the pollution control board of India to inform about a particular institution or organization who are not following biomedical rules?
    a) Only if it causing any damage to our hospital.
    b) Yes because it is hazardous to environment.
    c) No, not necessary.
    d) Only if we follow those rules.
    e) Cannot comment

Table 6: Compliant

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	damaging our hospital	20	13.3	13.3	13.3
	hazardous to environment	76	50.7	50.7	64.0
	not necessary	14	9.3	9.3	73.3
	if we follow rules	11	7.3	7.3	80.7
	cannot comment	29	19.3	19.3	100.0
	Total	150	100.0	100.0	

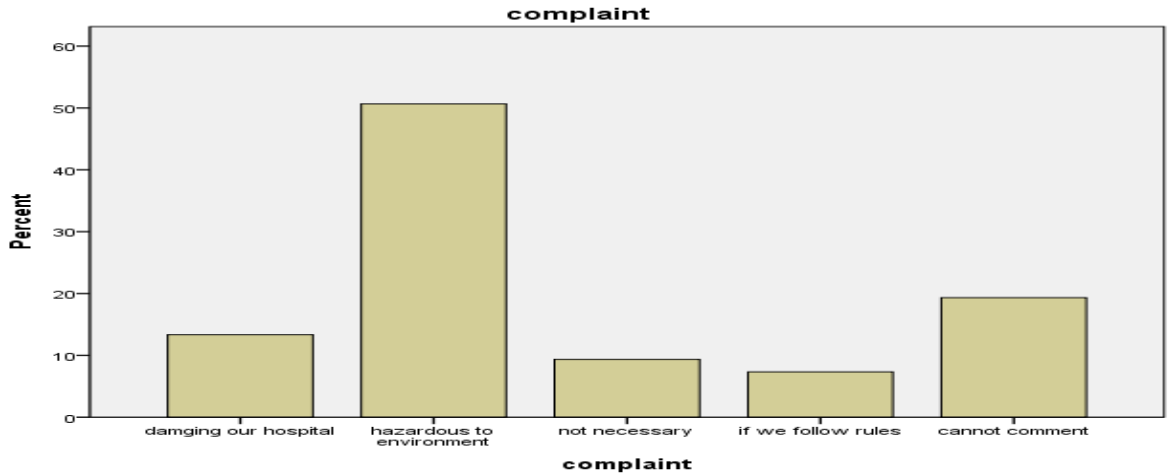


Fig: 6

From the table 06, it is clear that out of 150 samples 50.7% people agreed that "it is important to report pollution control board of India to inform that a particular institution is not following biomedical rules",19.3% not interested to comment on this question, 13.3% people indicated should complaint if it is damaging our hospital, 9.3% people indicated it is not necessary to complaint, 7.3% people indicated we should complaint only if we follow the rules. We need to complaint against organisation for not following BMW practices because they are hazardous to environment Data is clearly represented in the figure 06.

Objective 3: To determine practise levels among healthcare personnel about biomedical waste management.

1. Do you know and follow colour coding segregation of BMW in your hospital?
    a) Yes, not following
    b) Yes, following
    c) No, not following
    d) No, but following as others does
    e) Not sure

Table 7: Know Follow

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes,not following	13	8.7	8.7	8.7
	yes,following	107	71.3	71.3	80.0
	no,not following	9	6.0	6.0	86.0
	no but following	4	2.7	2.7	88.7
	not sure	17	11.3	11.3	100.0
	Total	150	100.0	100.0	

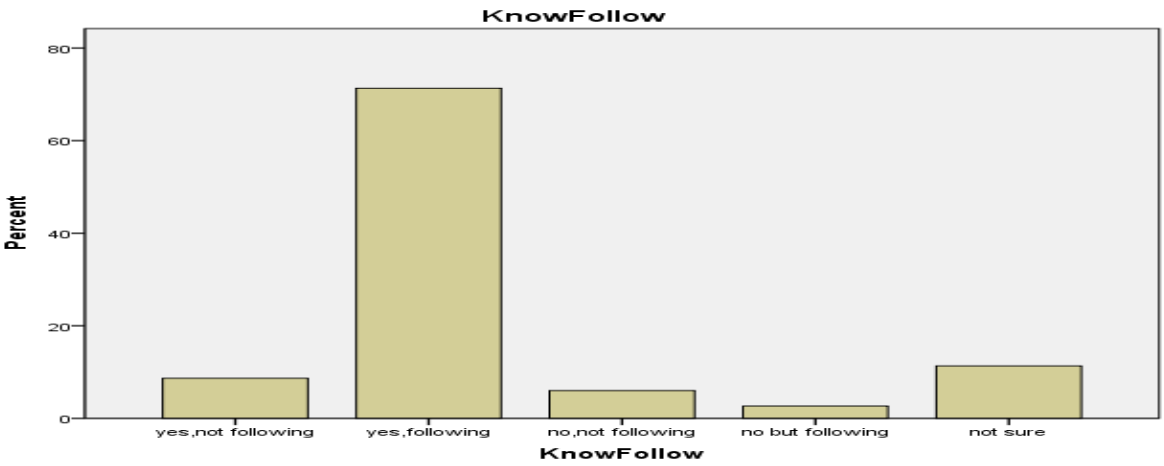


Fig:7

From the table 7, it is clear that out of 150 samples 71.3% people know and follow colour coding segregation about Biomedical waste in hospital, 11.3% people are not sure about what they know and follow about BMW. 8.7% people indicated that they know about biomedical waste colour coding segregation but they do not follow. 6% people indicated they don't know about biomedical waste and they don't follow, 2.7% people indicated that they don't know about bio medical waste but follow by watching others, But it is necessary to know and follow biomedical waste colour coding segregation. Data is clearly represented in figure 7.

2. Do you discard the used needle?
   a) Yes, immediately
   b) Yes, but not immediately
   c) No
   d) occasionally
   e) Have not noticed

Table 8: Discard Needle

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes immediately	95	63.3	63.3	63.3
	yes but not immediately	18	12.0	12.0	75.3
	no	5	3.3	3.3	78.7
	occasionally	5	3.3	3.3	82.0
	have not noticed	27	18.0	18.0	100.0
	Total	150	100.0	100.0	

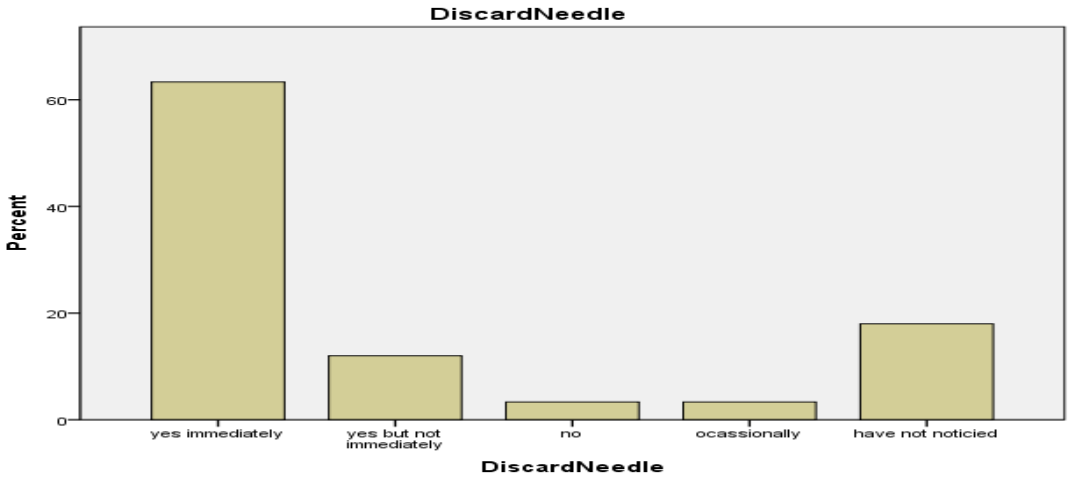


Fig 8

From the table 8, it is clear that 63.3% people discard the needles immediately after use, 18% people have not noticed about discarding of needles, 12% people indicated they discard needles but not immediately, 5% indicated they discard needle occasionally, 5% people indicated that they do not discard needles after use. It is mandatory to discard needles as soon as we use them. Data is clearly represented in figure 08.

3. Soiled dressings and used impression materials are disposed in?
   a) Blue/White bags.
   b) Red bags
   c) Black bags
   d) Yellow bags
   e) Don't know

Table 9: Soiled Dressing

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	blue	26	17.3	17.3	17.3
	red	35	23.3	23.3	40.7
	black	25	16.7	16.7	57.3
	yellow	56	37.3	37.3	94.7
	don't know	8	5.3	5.3	100.0
	Total	150	100.0	100.0	

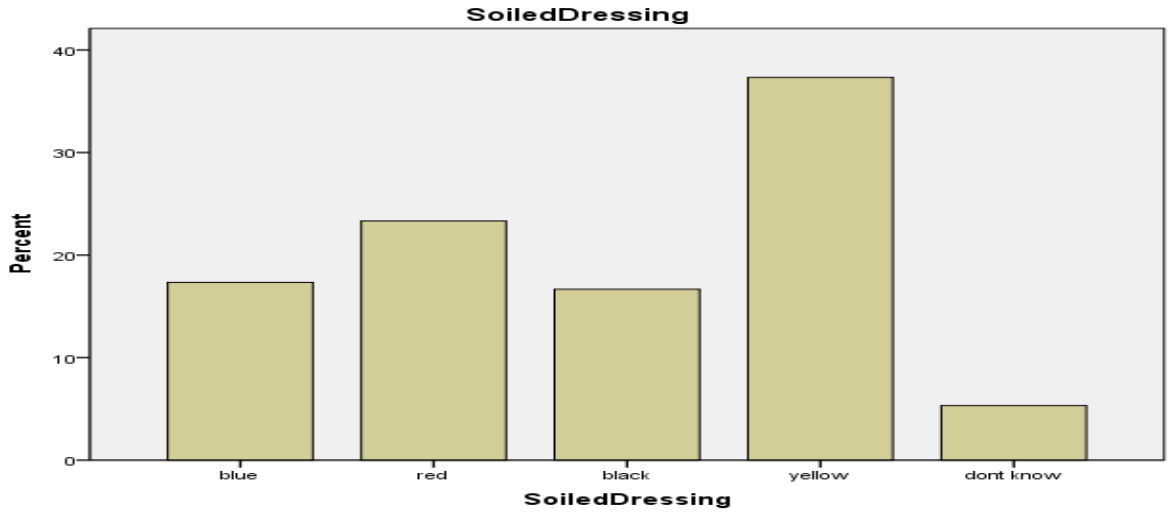


Fig: 9

From the table 9, it is clear that out of 150 samples only 37.3% people indicated that soiled dressings should be represented in yellow bags, remaining 63.7% people do not have knowledge about biomedical waste colour coding. Data is clearly represented in the figure 09.

DISCUSSION

From this research it is found that practice level of respondents is good compared to knowledge levels of respondents in government general hospital Andhra Pradesh and also found knowledge levels of doctors and nurses are high compared to housekeeping and laboratory staff.

When comparing practice level among doctors of GGH has low practice level compared to housekeeping and nursing staff. Knowledge levels of staff has less impact on their practices of handling biomedical waste.

Attitude levels of staff have less impact on their practices of handling biomedical waste. Maximum staff has positive attitude on biomedical waste management but they were actually not practicing them. Doctors have poor knowledge about colour coding system of biomedical waste which is the one of the important factor where doctors failed.

In government general hospital biomedical waste is segregated by outsource company who takes care of disposing biomedical waste

CONCLUSION

Hence this study concludes that every staff of hospital who are involved in bio medical waste management should possess good knowledge about biomedical waste legislation, positive attitude toward biomedical waste handling, and should follow right way of practice. But actually staff were lacking with good knowledge levels and positive attitude which leads to wrong practice, so by proper training programmes hospital should create awareness among its staff

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