

Summer Training at



Fresenius Medical Care

**Hygiene Condition and Recreation Activity Provided to Patient at Time of
Dialysis**

**By
Abhishek Anand**

**Under the guidance of
Brig. (Dr.) S.K. Puri**

**Post Graduate Diploma in Pharmaceutical Management
2011-2013**



**Institute of Health Management Research,
Jaipur
2012**

**INSTITUTE OF HEALTH
MANAGEMENT RESEARCH**

1, Prabhu Dayal Marg
Sanganer Airport, JAIPUR - 302 011, INDIA
Tel. : 3924700, 2791431-32
Fax : 91-141-3924738
E-mail : iihmr@iihmr.org
URL : <http://www.iihmr.org>
Gram : HEALTHINST

Certificate

This is to certify that Mr. Abhishek Anand from Institute of Health Management Research, Jaipur has undergone Summer Training at Fresenius Medical Care India. Ltd., New Delhi from 02nd May 2012 to 02nd July, 2012.

The candidate himself carried out the project. His approach to the study has been sincere, scientific and analytical. This summer training is partial fulfillment of the course requirement is recommended for the award of Post Graduate Diploma in Pharmaceutical Management.

I wish him success in all his future endeavors.

Dr. P.R. Sodani
Dean (Academic and Students Affairs)
IIHMR, Jaipur

Dr. S. K. Puri
Advisor, Former Dean
IIHMR, Jaipur



July 2, 2012

SUMMER TRAINING CERTIFICATE

*This is to certify that **Mr. Abhishek Anand**, pursuing **M.B.A.** from **Institute of Health Management Research** has successfully completed his Summer Training from Fresenius Medical Care India Pvt. Ltd.*

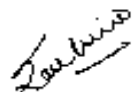
*His Summer Training project was focused on '**Hygienic Conditions & Recreation Activity Provided To Patients At The Time Of Dialysis Therapy**' under the guidance of **Mr. Bharat Kaushik**. The period of his summer training was from **May 2, 2012 to July 2, 2012**.*

The work was a part of an on-going project and was confidential in nature and cannot be shared with the institute.

*We wish **Mr. Abhishek** success in all his future endeavours.*

Warm Regards,

For Fresenius Medical Care India Pvt Ltd, New Delhi



Sachin Gaur
Manager - HR



Bharat Kaushik
Manager - Market Analytics

Fresenius Medical Care (India) Pvt. Ltd.

Head Office Delhi:
11th Floor, Dr. Ganga Das Bhawan,
25, Barakhamba Road,
Connaught Place,
New Delhi - 110 005
Tel.: 011 - 4640 5100; 4644 8800
Fax: 011 - 4550 9606

Branch Office Mumbai:
5-807, Everest Group,
Marshall Court Road,
Anchor (East), Mumbai - 400 092
Tel.: 022 - 4217 6500
Telefax: 022 - 4217 6601

Branch Office Kolkata:
751, 4th Floor, Anandpur,
E.M. Bypass, Kolkata - 700 107
Tel.: 033 - 3000 3500
Telefax: 033 - 3000 3606

Branch Office Chennai:
No. 2 & 3, 3rd Floor, KAS Arcade,
115, P. Thyagaraya Road,
Tayalambam Nagar, Chennai - 600 077
Tel.: 044 - 4333 3400
Fax: 044 - 4336 0815

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Acknowledgement

“It is important that students bring a certain ragamuffin, barefoot irreverence to their studies; they are not here to worship what is known, but to question it.”

(~Jacob Bronowski)

It was great learning opportunity for me to work with one of the leading MNC in dialysis sector Fresenius Medical Care Pvt. Ltd.

Throughout this 60 days project I came to learn many insight things related to dialysis machinery, equipments and most important the hygiene factor in dialysis.

I would like to thanks the whole Market Analytics Team (MAT) Mr. Gaurav Malhotra, Dr. Rakesh Thakur, and Dr. Bharat Kaushik who were always there to guide me whenever I was having any problem related to field or survey form or anything wherever I was unable to find my way-out. I also want to thanks Dr. Atul Dixit who had given us the whole basic knowledge of dialysis and FMC products which were very helpful for us during our field visit. At last but not the least Mr. Mayank Sharma the leader of this project who had shown his trust towards me to work with his project. And my heartily thanks to all of the FMC people specially to MAT group to give me this great opportunity to work with you.

This acknowledgement would have been incomplete if I did not mention the name Dr. S.K. Puri (Academic Dean IIHMR) Mentor

I tried my level best in making this project useful and hope that it will be up to the expectations of everyone mentioned.

1. INTRODUCTION

1.1 WHAT IS DIALYSIS

Dialysis is a procedure that replaces the normal functions of the kidney by removing metabolic waste products through diffusion and hydraulic pressure gradients. Use of an artificial semi permeable membrane (Hemodialyzer) or a natural semi permeable membrane (peritoneum) allows passage of some molecules while passage of other molecules is restricted. Molecules that can move through membrane move from the area of higher concentration to the area of lower concentration. The dialysate is a combination of treated water and electrolyte concentrates used with the dialysis machine and system. Dialysis is hazardous for the patient and for the staff that take care of the patient.

Dialysis treatment is accomplished by two primary mechanisms, hemodialysis (HD) and peritoneal dialysis (PD). HD utilizes an artificial dialyzer for removal of metabolic waste products and PD uses the patient's peritoneal cavity and membranes.

Dialysis can be hazardous for the patient as venous access and insertion of foreign bodies can increase risk of infection. Also the patient might be exposed to exogenous microorganisms or to endotoxin from contaminants in the water used to prepare dialysis. Personnel that care for the patient are at risk of occupational exposure to blood-borne pathogens as patients requiring dialysis can have a high prevalence of blood-borne diseases. Dialysis is used as a life sustaining treatment for patients with renal failure.

Patients undergoing dialysis are already at risk of certain types of infections resulting from underlying diseases or conditions such as:

- Diabetes
- Hypertension
- Cardiovascular disease
- Immunosuppressive therapy
- Other critical diseases

Furthermore, dialysis increases the patient's risk of infection because direct access into normally sterile areas, including the circulatory system or peritoneal cavity, is required. Infection can be caused by contamination occurring at various steps in the dialysis procedure or because of intrinsic contamination of any of the components of the dialysis system.

Most common types of dialysis-associated infections include:

- Access site infections
- Bacteraemia
- Peritonitis
- Pyrogenic reactions
- Infections with blood-borne pathogens

1.2 WHAT OF PROJECT

There are around 2.1 billion people are effecting from the chronic failure disease and they are on dialysis worldwide. And the previous research study says that the patient who had developed this disease and if they are on dialysis then there life will be last for only maximum 4-5 years in India. If the patient will be on regular interval of dialysis then also there life span is not more than 4-5 years. This happens because most of the hospital does not maintain the basic hygiene criteria in there dialysis unit, because of which any new microorganism born which effects the life span of patient very seriously.

1.3 WHAT FOR PROJECT

This project is initiated to measure that did the dialysis centre in the assigned area maintain the basic criteria of hygiene factor in there dialysis room and did the technician who are operating the patient are well qualified to do dialysis of patient and also to measure the quality of dialysis providing by hospital or private clinics.

It will help us to get the real picture that where does dialysis delivery stand in respect of in respect of “patient care”, “patient comfort” and “environment of dialysis room”.

2. ORGANIZATION PROFILE

Creating a future worth living. For people. Worldwide. Every Day.

Fresenius Medical Care is a German company specializing in the production of medical supplies, primarily to facilitate or aid renal dialysis. It is one of most world leading MNC company who is serving in dialysis sector since last three decades. It was formed in 1462 by Fresenius Family. In 1966 Fresenius starts to sell dialysis machines and dialyzers manufactured by various foreign companies and gains substantial market shares. Then in 1974 Fresenius starts to manufacture infusion solutions and medical disposables in St. Wendel, Saarland. Today, Fresenius produces highly innovative Polysulfone dialyzers in St. Wendel. In 1983 Fresenius takes up production of synthetic polysulfone fibre membranes for blood purification. These membranes today set the quality standards for dialyzers. Finally in 1996 Fresenius Medical Care is founded. And today Fresenius Medical Care is the world's largest provider of dialysis products and dialysis services for individuals with chronic kidney failure. It is 36% owned by the health care company, having network of 2,757 dialysis clinics in North America, Europe, Latin America, Asia-Pacific and Africa, Fresenius Medical Care treats more than 2 lakhs dialysis patients around the world.

Fresenius Medical Care in India have four offices that have total of 1112 partners. FMC in India had started in 1999 with its first office in Delhi, later in 2009 FMC opened its other two offices in Mumbai & Chennai, later this year in 2012 the company has opened its fourth office in Chennai.

Fresenius Medical Care is a 30,000 USD company at present. It is the 1st company to sell 1000 units in one single financial year (in 2010). FMC has the largest man power in Renal Health care segment.

Fresenius Medical Care has the total market share of 75 % (± 5%) & the nearest competitor have 18% share.

3. Objective:

To know the Hygienic Conditions & Recreation Activity provided to patients at the time of Dialysis Therapy.

4. Methodology and data

4.1 Research: - The research was descriptive in nature

4.2 Data Sources: Primary – Survey method was used for the collection of Data for the purpose of primary research.

4.3 Sampling Design:

Population: Dialysis patient

Sampling: Convenient sampling

Sample size: 65 Hospitals

Varanasi	Allahabad	Gorakhpur	Jaunpur	Bhadohi	Basti	Sonbhadra	Renukoot
25	21	10	4	2	1	1	1

4.4 Contact method: Observational and Personal

4.5 Tool used for Data Collection:

Research Instrument – Designed questionnaire on the basis of extensive literature review.

4.6 Type of Questionnaire- Structured non-disguised.

Design of Questionnaire: Open ended

4.7 Tools used for Data Analysis: MS-Excel

5. Questionnaire



HOSPITAL NAME:

SURVYOR NAME:

DATE :

DIALYSIS UNIT APPRAISAL

		1	2	3	4	5
PATIENT CARE						
Response time to patient's emergencies						
Check-ups at regular intervals during dialysis						
Behaviour of technician towards patients						
Qualified staff attending patients		☐ YES		☐ NO		
PATIENT COMFORT						
Patient's bed/chair						
Ambient noise level						
Quality of food for patient (if in case provided)						
Mode of recreation (if in case provided)	a.					
	b.					
	c.					
Remarks :						
Privacy for patients						
DIALYSIS UNIT ENVIRONMENT						
Safe disposal of clinical waste						
Hygiene						
a. Clinical dress for staff		☐ YES		☐ NO		
b. Footwear allowed inside the unit		☐ YES		☐ NO		
c. Isolated windows inside the unit		☐ YES		☐ NO		
d. Operates while gloves on		☐ YES		☐ NO		
Ambience						
Ventilation						
Power Back-Up facility		☐ YES		☐ NO		

6.1 Analysis, Interpretation, Result

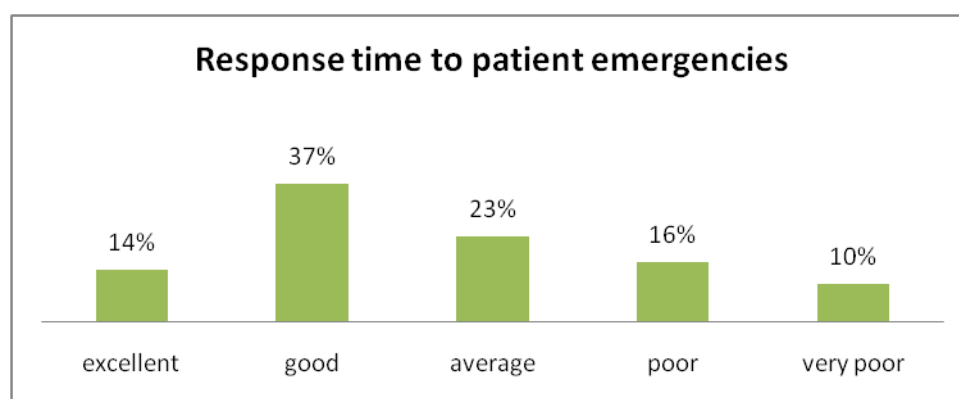
With the help of MS-excel we calculate the survey data and make the interpretation in this report. Also the final result by statistical analysis is given below.

As i had visited 65 hospitals in allotted cities in U.P. Out of 65 hospitals there were 10 hospitals where the dialysis was unit was permanently closed or some had refused to give data and there were 6 hospitals where dialysis unit was there but they had not any patient for dialysis. So we are analysing the data of 49 hospitals. In this 65 hospitals most of them was private and very less was government hospitals.

Our questionnaire is divided into three subparts in which first part deals with the “Patient care” second deals with “Patient comfort “and third part with “Dialysis unit environment”, through which we had analysed that how does the technician response towards the patient and do they maintain the hygienic condition in the dialysis unit.

A) Patient Care:-

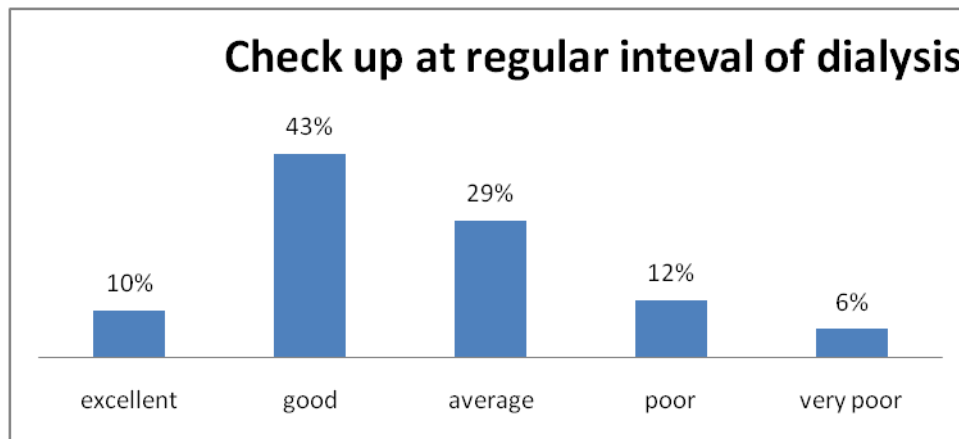
1. With the help of observational study we had find out that how was the response time of technician for patient whose dialysis was on process



Interpretation: as from the above result we can easily find out that there were only 14% of hospitals who are excellent in response time for patient emergencies 37% are good 23% are average 16% are poor and 10% are very poor. As this figure show us that this is not satisfied because during dialysis the response of technician towards patient is very

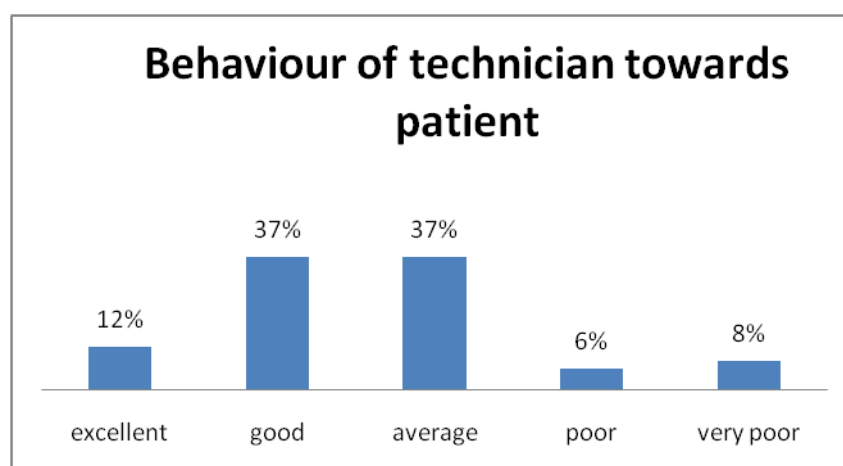
important because there must be any kind of inconvenience to patient related to blood tubing, needle or anything else.

2. As by observational and by personal contact to patient we had tried to find out that did technician do the regular interval check up of patient



Interpretation: As on the base of above result we can see that there are only 10% of hospitals where the technician do the regular check-up of patient who are on dialysis, 43% are good 29% average 12% poor and 6% are very poor. By analysing the above data we can say that there were not even half of the technician were attentive during the dialysis towards patient

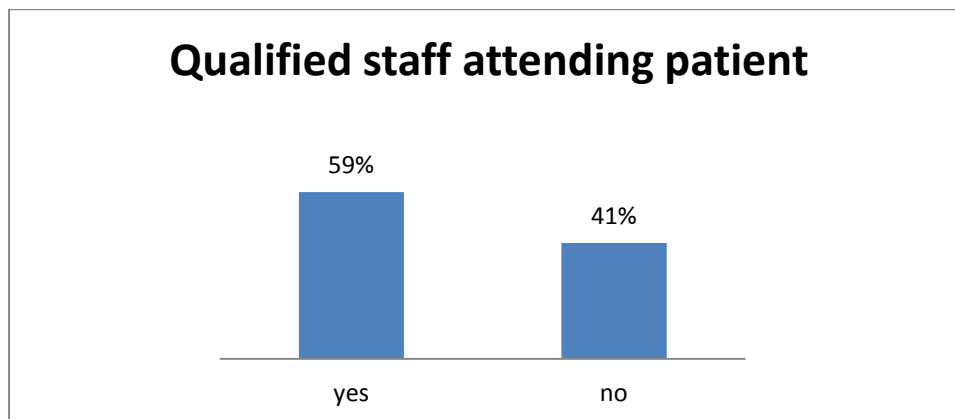
3.



Interpretation: Here we can see the same result of 37% for good and average result for behaviour of technician towards the patient and there were only 12% of technician whom behaviour towards patient is excellent 6% poor and 8% very poor. As this is not good for

patient because only technicians are present in dialysis unit and it is painful to patient if the technician will not behave properly to patient.

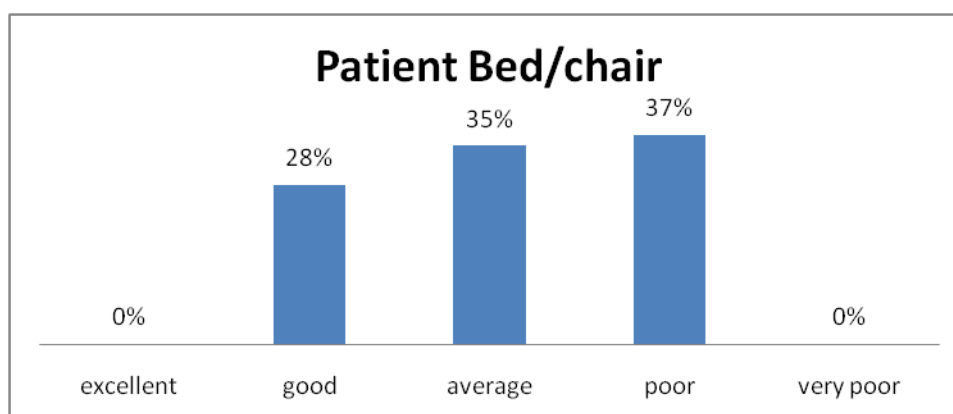
4. As by taking the technician qualification status we got result i.e



Interpretation: Here we can see that there were 59% of technician who were qualified for doing dialysis it mean that they had done diploma in dialysis or they had got 10-15 years experience in dialysis and there were 41% of technician who were not qualified to do dialysis means they had only completed their 12th and doing dialysis which is not good for patient.

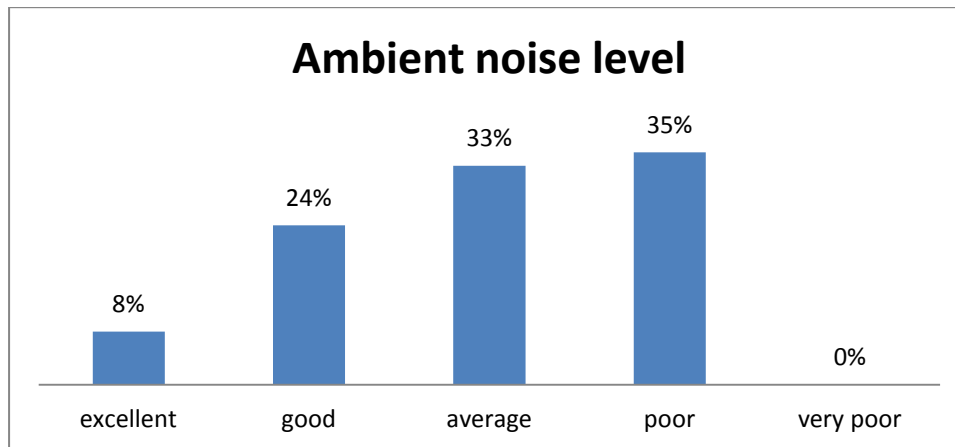
B) Patient Comfort:-

5. As by the observation we had find out the condition of bed or chair where the dialysis of patient was done



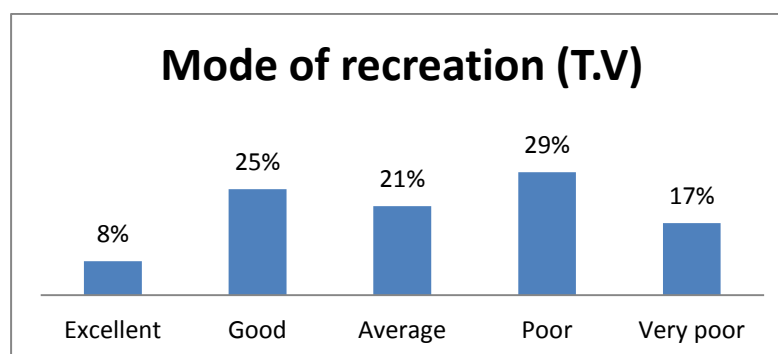
Interpretation: Here we can see that there is 0% for excellent column for bed/chair and also for 0% for very poor level 28% for good 35% for average and 37% for very poor. As the highest percentage for the very poor level as because they were not having proper mattress or pillow for bed and there bed sheet was not clean.

6.



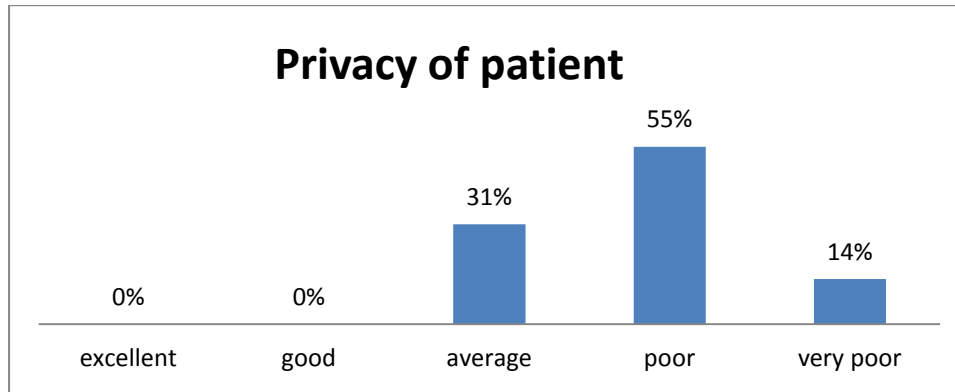
Interpretation: While collecting the survey data we had find out the surrounding noise level of dialysis unit. As there were only 8% of dialysis unit where we had find out excellent 24% good 33% average 35% poor and 0% for very poor. As the highest percentage is poor which is not good because during dialysis the patient needs the silent in there surrounding so that they feel relax but there are some positive site that there were 24% of hospitals who were maintaining the surrounding properly during the dialysis

7. As I had covered 65 hospitals but there were only 49 hospitals from where i had got the data in this 49 hospitals there were 24 hospitals were i had got the T.V as an mode of recreation for patient and in other hospitals they were not having any kind of recreation



Interpretation; From this we can say that there were only 8% of hospitals which are providing the best quality of recreation to patient. Means that the T.V which they had put was visible to patients and the sound was not very high which will give some kind of difficulty to patient and in this 25% of hospitals are good 21% are average 29% are poor 17% are very poor means that the T.V which was there was not in good condition or they are using by the technician for their personal recreation.

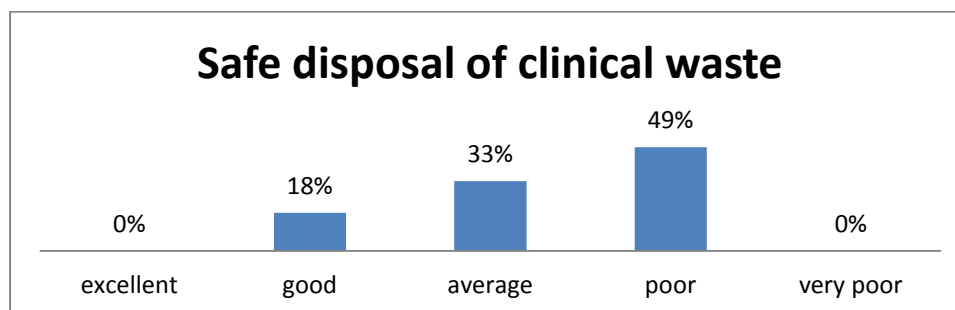
8. By doing the observational survey we had seen the privacy of the patient of the patient while they were on dialysis, the graph below shows the graph of it



Interpretation: Here we can see that there is 0% for the excellent and good column and highest is for the poor one which is not satisfied because while dialysis patient were not getting any privacy part. Here anyone can see them and some of the patient don't like this thing.

C) Dialysis Unit Environment:-

9.

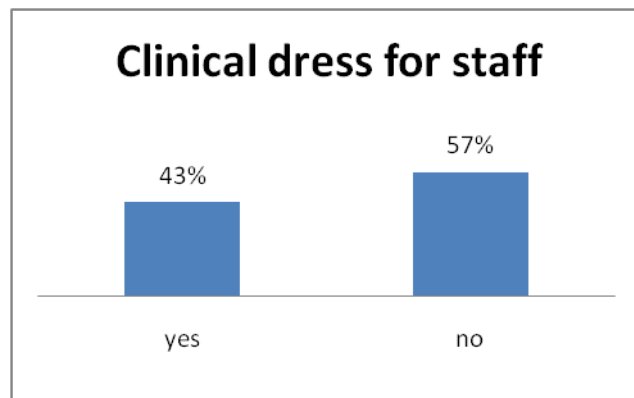


Interpretation: We can see in graph that there is 0% for excellent level of disposal of waste and 18% for good 33% average 49% poor and 0% very poor. as by seeing the surrounding areas of dialysis unit we get this figure that there were highest number of hospital who were not concern for safe disposal of waste which not good as per to the aspect of hygiene factor because if the disposal of waste will not be done properly there will be chance for several kinds of disease to get born from which the patient will get affected and also the other peoples in dialysis unit.

10. Hygiene:-

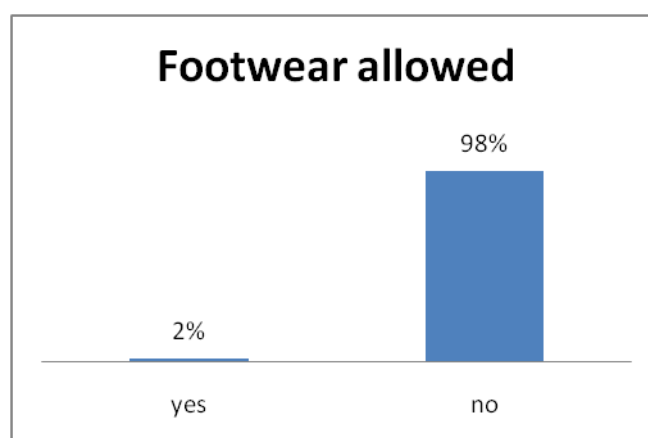
Under hygiene there were four criteria through which we had observed and analysed the level of cleanliness and hygienic environment of dialysis unit.

a)



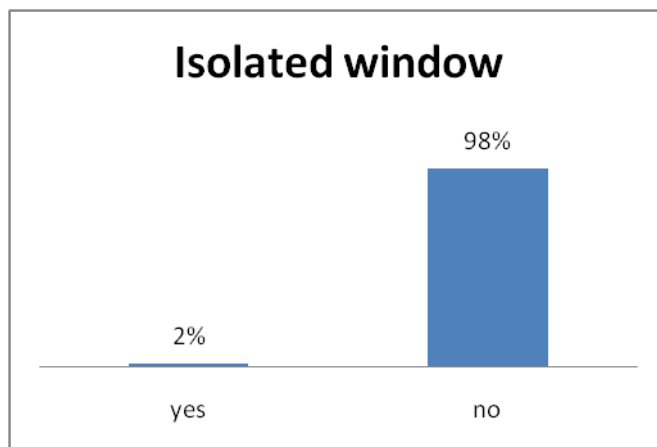
Interpretation: By doing observational study we find out the that there were 57% of hospitals who were not providing the clinical dress to staff while doing the dialysis and only 43% of hospital are providing it. As the dress of the staff is important because it is got cleaned in special form of detergent and got sanitize by chemical so that there will be not any chance for any disease to get born in there dress which will effect to patient.

b)



Interpretation: In this we had got the 98% of the hospital who were not allowing the footwear inside the dialysis unit. This is one the positive result for maintaining the hygiene inside the dialysis uint.

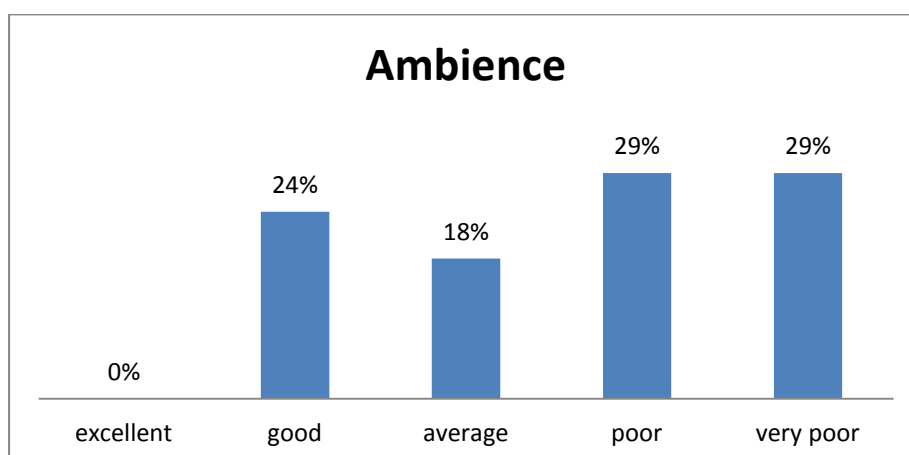
c)



Interpretation: By observing we got that there were 98% of hospitals who had not got the isolated windows inside the dialysis room and only 2% hospital had got the isolated window.

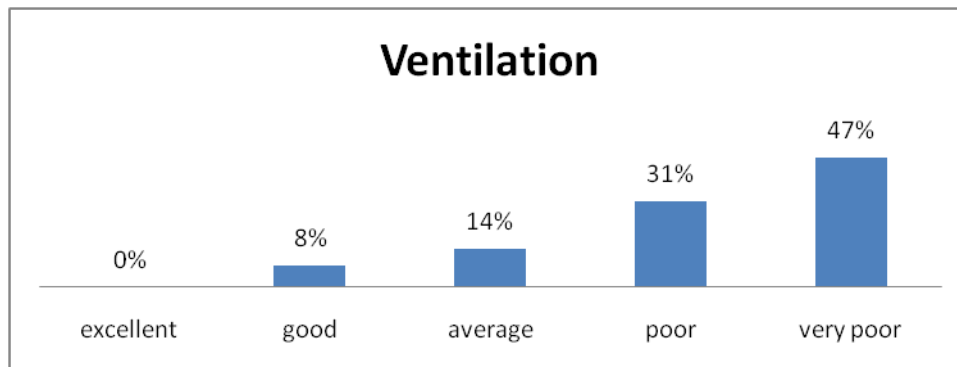
d) The last part for analysing the hygienic condition of dialysis unit was do the technician operates while gloves on. Under this criteria there were all technician of the 49 hospital were using the gloves when they were operating to any dialysis patient.

13. While asking the questions to technician we observe the ambience level of dialysis room of hospital. Were we found the following result



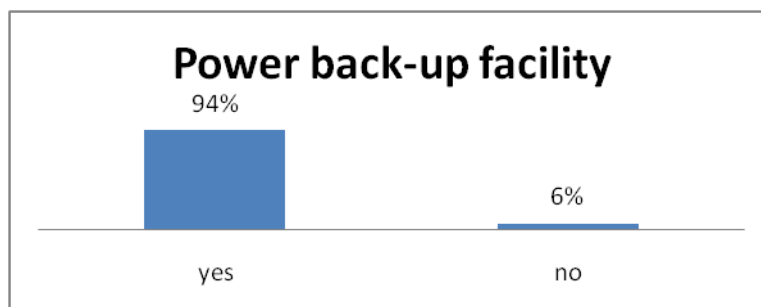
Interpretation: Here we can see that there is 0% for excellent, 24% for good, 18% average, 29% for poor and also 29% for very poor. By analysing this figure we can see that only 24% of hospital are maintain the surrounding environment clean with fresh air and 18% of them fall under the average level and same for poor and very poor level of 29%, where the surrounding environment is not fresh and clean which is not good for the patient whose dialysis is going on and also for the visitors who are present during the dialysis.

14.



Interpretation; As for the ventilation we can see that there is 0% for excellent 8% for good 14% for average 31% for poor and 47% for very poor. As the ventilation is the one of the important way to get the fresh air in the dialysis room and there were 47% of hospitals were not having this facility because most of the hospitals are running there dialysis unit in basement in close area where the ventilation of air is proper. This is not healthy for the dialysis patient.

15.



Interpretation: In the case of power back-up facility we had got the positive result that there were 94% of hospitals who providing the power facility to the dialysis machine when there is power cutting during the dialysis of patient and only the 6% of hospitals are unable to provide the power back-up facility.

NOTE: In patient comfort part of our questionnaire we had also included that is there any food facility provided to patient by hospital, but there was not any such kind of hospital in my assigned areas who were providing food facility to patient.

7. Conclusion:

Key learning's:- In the whole internship period we learn actually so many thing from company to field but the most important learning for us as a fresher was:-

1. Practical experience after come out from the theoretical world of management, which would be great helpful for our future work.
2. Practical experience of survey and face to face discussion about the research to doctors.
3. Know about the working profile of organization and its research work.
4. And get the knowledge about that how does the hygiene is one the most important contributing factor in safe and effective dialysis.

Suggestion: As we all know that most the HD patient dies within few span of years even if they are on regular dialysis. And this happens somewhere because of not maintain to proper hygiene factor in dialysis. And also by analysing the whole criteria of maintaining the basic hygiene factor in the dialysis unit we can easily says that there were maximum numbers of hospital who are not maintaining it. And this thing is happening due to lack of information to hospital management and the technician who are doing dialysis in respect of hygiene factor. So we can suggest that there must be some kind of workshop or seminar should be conducted through which we can give the basic knowledge to them regarding to how does a hygienist dialysis can add more and more years to the life of patient.

8. APPENDIX & BIBLIOGRAPHY

Project on Hygienic Conditions & Recreation Activity provided to patients at the time of Dialysis Therapy

A Project Report Submitted By

Abhishek Anand

IIHMR Jaipur

8.1 BIBLIOGRAPHY:

a) Article on Dialysis

www.ems.org.eg/esic_home/data/giued_part2/Dialysis.pdf

b) CDC guideline to maintain the basic hygiene in clinics

www.premierinc.com › ... › [Tools & Services](#) › [Safety Institute](#)

c) Article on Incidence of bloodstream infection in multicenter inception cohorts of haemodialysis patients.

<http://www.phac-aspc.gc.ca/nois-sinp/pdf/bloodstream-eng.pdf>

d) Article on Incidence and risk factors for bloodstream infections stemming from temporary haemodialysis catheters.

<http://journals.tubitak.gov.tr/medical/issues/sag-10-40-6/sag-40-6-2-0908-236.pdf>