Assessment of wash practice in the maternity and O.T. unit of the LNJPN Sadar hospital in Bhagalpur district of Bihar

A dissertation submitted in partial fulfilment of the requirements for the award of

Post-Graduate Diploma in Health and Hospital Management

by

Dr. Shivangi Kaushik

PG/11/093

International Institute of Health Management Research

New Delhi -110075

April , 2013

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बिहार सरकार

DISTRICT HEALTH SOCIETY, BHAGALPUR
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NATIONAL RURAL HEALTH MISSION

Memo No..684...../ Date25/04/13../

TO WHOM IT MAY CONCERN

This is to certify that Mr./Mrs./Dr. Shivangi Kaushik has successfully completed her 3 months job as Hospital Manager in sadar hospital, Bhagalpur from 07 February, 2013 to till date.

During this period she has worked on HR. issues, Labour room functioning, capacity building of MAMTA & Family Counsellor & under the guidance of me and team at District Health Society, Bhagalpur. We found her to be hard working & responsible towards her work.

I wish her good luck for her future.

25/4/13

Civil Surgeon cum MS
D.H.S, Bhagalpur.

C

बिहार सरकार

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NATIONAL RURAL HEALTH MISSION

FEEDBACK FORM

Name of the Student	-	Dr. Shivangi Kaushik
Dissertation Organisation	-	Sadar Hospital, Bhagalpur, Bihar
Area of Dissertation	-	Water, Sanitation & Hygiene
Attendance	-	100%
Objectives Achieved	-	Management Skills, Team work, Capacity Building of management
Deliverables	-	Technical skills, Family Planning Counselling, Infection control
Strengths	-	Leadership skills, good presentation skills \ supportive working, willing to take responsbilities
Suggetions for Improvement	-	Need to learn more regarding administration skill , Need to work in adverse condition

25/4/13

District Programme Manager
Bhagalpur

Certificate from Dissertation Advisory Committee

This is to certify that **Dr. shivangi kaushik** , a graduate student of the **Post- Graduate Diploma in Health and Hospital Management,** has worked under our guidance and supervision. She is submitting this dissertation titled " **Assessment of Wash practise in the Maternity and O.T. unit of the LNJPN Sadar hospital in Bhagalpur District of Bihar.**" in partial fulfillment of the requirements for the award of the **Post- Graduate Diploma in Health and Hospital Management**.

This dissertation has the requisite standard and to the best of our knowledge no part of it has been reproduced from any other dissertation, monograph, report or book.

Faculty Mentor

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IIHMR Delhi
Date

Organizationa Advisor

Dr. Sanjay Kumar
M.O.I.C.
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M. O. I. C.
L.N.J.P.N. Sadar Hospital
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Certificate of Approval

The following dissertation titled "**Assessment of WASH practise in the maternity and O.T. unit of the LNJPN Sadar hospital while handling the newly delivered mothers and provide recommendations for improvement in WASH practise**" is hereby approved as a certified study in management carried out and presented in a manner satisfactory to warrant its acceptance as a prerequisite for the award of **Post- Graduate Diploma in Health and Hospital Management** for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed or conclusion drawn therein but approve the dissertation only for the purpose it is submitted.

Dissertation Examination Committee for evaluation of dissertation

Name	Signature
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Abstract

Background: Safe water is one of the prime and essential needs of the public health especially in developing countries. A WHO reports state that 10 percent of the global disease burden could be prevented by improving the water, sanitation, and hygiene and water resources management [(1)]. In today's era where we say that we are progressing in every sector and ensure better services to our citizen. We are far behind to achieve our MDG 7 "ensure environmental sustainability". So if we ensure access to safe drinking water and better sanitation and hygiene to poor's we will improve the quality of life with which they are living currently. Add on to this; Water scarcity leads to adverse health outcomes especially in the slums and village i.e. multiple studies of urban slums in Africa and South Asia have found Diarrhoea to be one of the top two causes of morbidity and mortality for children under five. [(2)] Hence, it has been estimated that diarrheal morbidity can be reduced by an average of 6-20 percent with improvements in water supply and by 32 per cent with improvements in sanitation. In India, approximately 72.7 per cent of the rural population does not use any method of water disinfection and 74 per cent have no sanitary toilets. [(3)] Therefore to fasten the programs and activities to address the MDG 7; the United Nations General Assembly declared 2008 as the International Year of Sanitation. The present study is undertaken to assess the WASH practise in the Maternity and O.T. unit of the hospital while handling the mothers. The specific objectives of the study are as follows:

a) To monitor the quality and quantity of water.
b) To assess the Infection control, Hand washing and hygiene practise by the staff and mothers.
c) To assess the accessibility of water and excreta disposal to the staff and mothers.
d) To assess the knowledge and behavior of staff about WASH.

Method: It is a cross sectional study conducted in the Bhagalpur region of Bihar State. The data were collected from newly delivered mothers and patient who has undergone family planning via pre-tested questionnaire and a Checklist including various aspects of WASH. The sampling was purposive random sampling in which we interviewed Hospital Staff (GNM's, ANM's, MAMTA and 4th Grade) Patients (mothers and patient undergone family planning procedure by filling 241 questionnaires detailed information about WASH was

asked along with the Knowledge Attitude and perception of respondents regarding WASH and most importantly awareness towards WASH.

Participants were explained in detail regarding the purpose of the study; informed consent was obtained and questionnaires were filled according to respondents' answers. The necessary steps were taken to maintain anonymity. Ethical clearance for the study was obtained from institutional ethical committee. The information thus obtained from the above questionnaire was entered in MS excel spreadsheet and Descriptive study is carried out to analyze results thus obtained. The information obtained was presented in terms of percentages.

Result: And majority of them knows that they should wash their hands. But at the same time only 36% wash their hands before taking meal and despite of so much awareness only 38% wash their hands before breast feeding their new born. And it was terrible to see that only 31% wash their hands after using the urinal. The above figure shows that only 41% dispose of their sanitary napkins in the dust bin and the rest of them through its open in the bathroom. However more than 60% was said those toilets are cleaned. Addition to this only 40% says that labour room and O.T. were clean during their presence and only 30% gets fresh bed sheets on the daily basis.

Conclusion: The past studies suggest that access to water and sanitation independently contribute to child and maternal mortality outcomes. If the world is to seriously address the Millennium Development Goals of reducing child and maternal mortality, then improved water and sanitation accesses are key strategies. This study has also come out with that the WASH is poorly compromised. Despite of all the facilities and arrangements the beneficiaries are not getting safe water for hygiene and drinking. Rather they are taking infection in some or the other way.

We should focus on providing better facilities to the patients by planning the polices focusing on WASH. To avoid infection we should provide the patients with portable drinking water and continuous water supply in the wash rooms and labour room. We should be accountable to provide a healthy environment and good sanitation facilities.

Key words: Water Quality, Sanitation, Hygiene, Mother and Child Mortality, Millennium Development Goals.

Acknowledgement

I have taken efforts in this project. However, it would not have been possible without the kind support and help of many individuals and organizations. I would like to extend my sincere thanks to all of them. I am highly indebted to Ms. Anupama Sharma for her guidance and constant supervision as well as for providing necessary information regarding the Project & also for her support in completing the project. I would like to express our gratitude towards our parents & member of Lok Nayak Jai Prakash Naryan Hospital, Bhagalpur for their kind co-operation and encouragement which helped me in completion of this project.

Our thanks and appreciations also go to my friends and mentors in the organization in developing the project and people who have willingly helped me out with their abilities.

Dr. Shivangi Kaushik

CONTENT

List of Tables

List of Abbreviations

WHO	World Health Organization
MDG	Millennium development goal
UNICEF	United Nation children's Fund
WASH	Water Sanitation and Hygiene
CDR	Crude Death Rate
IMR	Infant mortality rate
MMR	Maternal Mortality Rate
O.T.	Operation Theatre
GNM	General Nurse and Midwifes
ANM	Auxiliary Nurse Midwife
BPL	Below Poverty Line

1.1 Introduction to organization and its profile

The Lok Nayak Jai Prakash Narayan hospital is in operations since British period. The infrastructure of the hospital was built in British style and is still present. The main building of the hospital is known as Victoria building. It is located in the heart of the city Bhagalpur. It is easily accessible from road and is well connected to the nearby PHC APHC and sub divisional hospitals. It is commonly recognised as Sadar hospital Ghanta Ghar. Being a district hospital it has to be 500 bedded but currently only 25 bedded is functional.

It is present in a huge area but due to lack of administration it is all encroached by the local people for their self interest. Because of this reason we have only 2 small buildings under which we run out door and in-door facilities for the patients. The outdoor department runs in the morning from 8am to 12pm as well as from 4pm to 6pm in the evening. Hence there is no contingency of running the national programmes other than JBSY.

1.2 where were engaged during the Internship

Routine

- There was not a fixed protocol to carry out the day to day activity. It used to vary as per the need. But most frequently i use to monitor the working of ANM's and Mamta's in the ward and labour room
- Ensuring the availability of essential medicines and material for Labour room, Dressing room and O.T.
- Monitoring the TOR of family planning counsellor and motivating the patients to opt for birth spacing method or tubectomy as a birth control measure.
- Cross checking the pathology and radiology coupons for fake procedures.

1.3 Managerial Task

- Daily reporting the number of deliveries discharges and payments to mothers under JBSY.
- Reporting for the number of family planning procedures and Copper –T insertions.
- Developing roasters for the Doctors, ANM's 4^{TH} Grade and Mamta.
- Authenticating the 102 ambulance service.

- Sending FRU monthly reporting to DHS
- Sending Gap Analysis report monthly to the DHS.
- Identifying issues to be address under the Coming RKS meeting; formulating the agenda and taking the follow up of the last agendas of the meeting.
- Presenting monthly report of the facility to DM.
- Arranging various campuses to serve the urban slums, prisoners, girl's hostel etc.
- Organising pulse polio week in the hospital premises, thereby compilation and reporting of the event to the DHS.
- Procuring medicines and managing indents from the Labour room and O.T.
- Forecasting and weekly assessment of store regarding weekly reporting of the medicine in Oder to avoid stock outs.
- Solving out various HR issues.
- Designing and printing of IEC regarding various facilities available to the patients.
- Monitoring the JBSY and family planning payments.

1.4 Reflective learning during Internship

- Gained experience about ground level issues in public health.
- Real experience with rural population.
- Gained confidence and experience to motivate the ill irate people of the community regarding various health schemes and programmes.
- Learned various aspect of quality issues in the public health facilitates.
- Attained confidence to present my facility in front of the higher authorities at district level.
- Got experienced to manage the health facility on your own shoulders.
- Knowledge and various process involved in performing any activity for your facility i.e. how to write a note sheet and various channels to achieve your set target.
- Experience to arrange health campus at individual level.
- Experienced about the conduction of Rogi kalian meetings in the facility.
- So much of knowledge regarding various funds allocation under NRHM Part A B C.

1.0 INTRODUCTION

Safe water is one of the prime and essential needs of the public health especially in developing countries. A WHO reports states that 10 percent of the global disease burden could be prevented by improving the water, sanitation, and hygiene and water resources management [1]. In today's era where we say that we are progressing in every sector and ensure better services to our citizen. We are far behind to achieve our MDG 7 "ensure environmental sustainability". So if we ensure access to safe drinking water and better sanitation and hygiene to Poor's. We will improve the quality of life with which they are living currently. Add on to this ; Water scarcity leads to adverse health outcomes especially in the slums and village i.e. Multiple studies of urban slums in Africa and South Asia have found Diarrehea to be one of the top two causes of morbidity and mortality for children under five [2]. Hence, it has been estimated that diarrheal morbidity can be reduced by an average of 6-20 percent with improvements in water supply and by 32 per cent with improvements in sanitation. In India, approximately 72.7 per cent of the rural population does not use any method of water disinfection and 74 per cent have no sanitary toilets[3]. Therefore to fasten the programmes and activities to address the MDG 7; the United Nations General Assembly declared 2008 as the International Year of Sanitation. The five key messages of the International Year of Sanitation are:

- Sanitation is vital for human health
- Sanitation generates economic benefits
- Sanitation contributes to dignity and social development
- Sanitation helps the environment
- Sanitation is achievable.

If we talk about progress to achieve the MDG target them at the current rate, the world will miss the MDG sanitation target by over 700 million people. To meet the target, at least 173 million people on average per year will need to begin using improved sanitation facilities. As per WHO report More than 2.5 billion people do not use an improved sanitation facility; almost 1.8 billion of them are in Asia. Another estimates report that 4.0% of all deaths and 5.7% of total disability-adjusted life years can be attributed to water, sanitation, and hygiene. But at the same time Sharing sanitation facilities is three times more likely in urban than in

rural areas of the developing world[4]. Worldwide, 1.4 million children die each year from preventable diarrheal diseases and some 88% of Diarrehea cases are related to unsafe water, inadequate sanitation, or insufficient hygiene Pregnant women face a similar, equally dire situation, particularly because of their vulnerability to anemia, vitamin deficiency, trachoma and hepatitis, all of which can lead to increased morbidity and mortality . The provision of safe water for medical purposes to treat such illness can improve newborn and child health in addition to maternal health. Currently, health centres providing maternal and delivery care can expose women to unsafe water, poor sanitation and poor management of medical waste: 15% of all maternal deaths are caused by infections in the 6 weeks after childbirth and have mainly been found to be due to unhygienic practices and poor infection control during labour and delivery .Despite the importance of water and sanitation and the availability of interventions, 2.6 billion people in the world currently lack access to basic sanitation, while 884 million people lack access to safe drinking water . In order to promote access to improved water and sanitation, the Millennium Development Goals (MDG), including access to safe drinking water and basic sanitation (target 7 C), infant and child health (MDG 4), and maternal health (MDG 5) guide development and planning policies[5.] Despite progress, the WHO/UNICEF Joint Monitoring Programme reported that at the current rate, the world will miss the MDG sanitation target by 13%, with 2.7 billion people lacking basic sanitation. Even if the target is met, there will still be 1.7 billion people without access to improved sanitation. More positively, the world will meet the MDG water target at the current rate. However, even if the goal is met by 2015, there will still be 672 million people without access to improved water sources. Although links have been made between water and sanitation and newborn, child, and maternal health, there have not been studies quantifying these relationships globally using country-level data[5.]

The importance of sanitation is indisputable. It is a crucial stepping stone to better health: sanitation offers us the opportunity to save the lives of 1.5 million children a year who would otherwise succumb to diarrhoeal diseases, and to protect the health of many more. It is fundamental to gender equity as it protects women’s dignity. And it is key to economic development: investments in sanitation protect investments made in other sectors, such as education and health, and bring measurable economic returns[4.]

2.0 Statement of Problem

The Safe drinking water is essential for maintenance of good health. Availability of safe drinking water is an important Public Health requirement. In the last one decade a number of studies have regarded the various health related mortality in India. India is the country where more number of communicable and non-communicable diseases occurs at a higher rate than any other region in the world. Presently, we are more than 1 billion and our population is growing at a rate of 18 million every year. Though the crude death rate has been constantly declining, yet the crude birth rate has not come down. When we review the mortality rates of the country, we find that the mortality rates especially CDR, IMR, and to some extent maternal mortality rate have shown a decreasing trend. However , still major causes of the morbidity and mortality among children's in the country is because of unsafe drinking water , sanitation and hygiene , it includes Diarrehea followed by Acute lower respiratory infections, cholera , typhoid , malaria , dysentery and other infectious diseases. WASH is a major preventable cause of many infectious and water born diseases causing death of more than 5million people annually in the world. According to an assessment commissioned by the United Nations, 4,000 children die each day as a result of diseases caused by ingestion of filthy water around the globe and 1000 per day in India. The report says four out of every 10 people in the world, particularly those in Africa and Asia, do not have clean water to drink.

In Bhagalpur, a large number of people have access to functional sources of water. Most of the people us wells, rivers and hand pumps and the provisioning of piped water is very low. The poor people have to commute to fetch water for their use. The Dalits and landless people, marginal farmers are dependent on other classes and communities for availing water. The wells and tube wells are not regularly cleaned and sanitized. In the interest of the common people, and reduce frequent disease occurrences in the district, it is very important that more and more people are provided with safe drinking water. And number of studies has been conducted to assess the sanitation and water but none of them has completely studied the hygiene practise focusing the mothers during and after delivery. Hence this study will assess the WASH practise in the Maternity and O.T. unit of the hospital. And via conducting this study we would use the conclusion to implement and formulate various policies and help different organization to decrease its consumption and health related issues associated with it.

3.0 Rationale of the Study

This study is done to assess the WASH practise in the Maternity and O.T. unit of the hospital while handling the mothers. As this group of population is more vulnerable to infectious diseases constant in the country, So Through this study we could be able to know:

- The reasons of un-availability of safe drinking water, sanitation and hygiene,
- Knowledge and practises by staff with reference to WASH,
- Awareness regarding SAFE wash practise among mothers.

So that in the future this study can help us to provide adequate data and information to know where our government is lacking and why there is still so many gaps persist after so many policies and financial assistance.

4.0 **Review of literature**

Everyone has the right to water. This right is recognized in international legal instruments and provides for sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic uses. An adequate amount of safe water is necessary to prevent death from dehydration, to reduce the risk of water-related disease and to provide for consumption, cooking, and personal and domestic hygienic requirements. The right to water is inextricably related to other human rights, including the right to health, the right to housing and the right to adequate food. As such, it is part of the guarantees essential for human survival. States and non-state actors have responsibilities in fulfilling the right to water. In times of armed conflict, for example, it is prohibited to attack, destroy, remove or render useless drinking water installations or irrigation works.

There was a study conducted in Australia with objective to examine the epidemiological evidence for a relationship between various hygiene and public health intervention strategies, separately or in combination, and the occurrence of common preventable childhood infectious diseases. The purpose was to determine what intervention/s might most effectively reduce the incidence of skin, diarrhoeal and infectious diseases experienced by children living in remote Indigenous communities. And they came up with the result that there is clear and strong evidence of effect of education and Hand washing with soap in preventing diarrhoeal disease among children (consistent effect in four studies). In the largest well-

designed study, children living in households that received plain soap and encouragement to wash their hands had a 53% lower incidence of diarrhoea (95% CI, 0.35, and 0.59). There is some evidence of an effect of education and other hygiene behaviour change interventions (six studies), as well as the provision of water supply, sanitation and hygiene education (two studies) on reducing rates of diarrhoeal disease[6]

As per one of the studied entitled" Study of water supply & sanitation practices in India using geographic information systems: Some design & other considerations in a village setting":
Water in the village was found to be microbiologically unfit for consumption. Analysis using direct observations supplemented by GIS maps revealed poor planning, poor engineering design and lack of policing of the water distribution system causing possible contamination of drinking water from sewage at multiple sites.[3]
Public health importance of hand washing was known since 19th century. Many researchers also highlighted how hand washing could bring down the incidence of Diarrehea, ARI & other diseases. 100% respondents interviewed practiced hand washing after defecation either with soap (59%) or with plain water, ash & mud (41%). But 64%, 51.6% and only 21.7% practiced hand washing before preparation of food; after using urinals; after changing the babies' nappies and disposing their feces respectively. Only 16.1% respondents washed their hands as per the recommended time of 15-30 seconds. Majority (75%) dried hands with apparently unclean materials. 90.7% followed step1 but none followed all the steps. Swab collection before and after hand washing was revealed a decrease in colony count in 60% of the samples. It can be concluded that extent of desirable practices regarding hand washing is still lacking and needs to be emphasized[7.]

Hand washing with soap, particularly after contact with excreta, can reduce diarrhoeal diseases by over 40 per cent and respiratory infections by 30 per cent. Diarrhoea and respiratory infections are the number one cause for child deaths in India. Hand washing with soap is among the most effective and inexpensive ways to prevent diarrhoeal diseases and pneumonia. With 638 million people defecating in the open and 44 per cent mothers disposing their children's faeces in the open, there is a very high risk of microbial contamination (bacteria, viruses, amoeba) of water which causes diarrhoea in children. Children weakened by frequent diarrhoea episodes are more vulnerable to malnutrition and opportunistic infections such as pneumonia. About 48 per cent of children in India are suffering from some degree of malnutrition. Diarrhoea and worm infection are two major health conditions that affect school age children impacting their learning abilities[8.]

India is home to 638 million people defecating in the open; over 50 per cent of the population. Two hundred and Eleven Million people gained access to improved sanitation in whole of India between 1990-2008 Only a quarter the total population in India has drinking water on their premise. Women, who have to collect the drinking water, are vulnerable to a number of unsafe practices. Only 13 per cent of adult males collect water. Sixty seven per cent of Indian households do not treat their drinking water, even though it could be chemically or bacterially contaminated. According to the Public Health Association, only 53 per cent of the population wash hands with soap after defecation, 38 per cent wash hands with soap before eating and only 30 per cent wash hands with soap before preparing food. Only 11 per cent of the Indian rural families dispose child stools safely. 80 per cent children's stools are left in the open or thrown into the garbage. Only 6 per cent of rural children less than five years of age use toilets. WASH Interventions significantly reduce diarrhoeal morbidity; statistically it has been shown that: Hand washing with soap reduces it by 44 per cent, Household water treatment by 39 per cent Sanitation by 36 percent, Water supply by 23 percent and Source water treatment by 11 percent. [8]

One study was conducted in India which evaluated and quantified the economic benefit attributable to improvements in water supply and sanitation in rural India. It found that Three years after programme initiation, the number of households using piped water and private pit latrines had increased by 10% on average, but no changes in hygiene-related behaviour had occurred. The behavioural changes observed suggest that the average household in a programme community could save as much as 7 United States dollars per month (or 5% of monthly household cash expenditures) in coping costs, but would not reduce illness costs. Poorer, socially marginalized households benefited more, in alignment with programme objectives. Hence Given the renewed interest in water, sanitation and hygiene outcomes, evaluating the economic benefits of environmental interventions by means of causal research is important for understanding the true value of such interventions.[9]

In a another study titled "Using Child Health Outcomes to Identify Effective Measures of Hand washing" ruled out that mainly three indicators were independently associated with reduced child Diarrehea or respiratory disease. In multivariate analysis, three hand washing indicators were independently associated with less child Diarrehea—mothers reporting usually washing hands with soap before feeding a child, mothers using soap when asked to

show how they usually washed their hands after defecation, and children having visibly clean finger pads.[10]

The Drinking Water and Sanitation Department of Government of Jharkhand published one "Environmental Assessment Draft Report" stating that only about 10 percent of the rural Jharkhand households report water supply. Sanitation remains another significant challenge with the proportion of rural Jharkhand households reporting latrines being as low as 7%, the corresponding all India figure being about 22% (Census 2001). Lack of toilets and poor sanitation in Jharkhand causes 7.5 crore man-day loss every year and results into an estimated loss of Rs 1200-odd crore annually. The status of sanitation in Jharkhand is very dismal, with only about 8% households having access to sanitation in the rural areas and the balance still resorting to open defecation.[11]

Though it is unlikely that the world will meet the MDG sanitation target by 2015, encouraging progress is being made. Globally, 63 per cent of the population use improved sanitation facilities, an increase of almost 1.8 billion people since 1990. This means that we are within 10 per cent of being 'on track'. At current rates of progress, we will reach 67 per cent coverage in 2015, better than previous projections but still far from the 75 per cent needed to reach the target. Unless the pace of change in the sanitation sector can be accelerated, the MDG target may not be reached until 2026. In 2010, an estimated 2.5 billion people were still without improved sanitation. Progress in China and India is highlighted, since these two countries represent such a large proportion of their regional populations. While China has contributed to more than 95 per cent of the progress in Eastern Asia, the same is not true for India in Southern Asia. Together, China and India contributed just under half of the global progress towards the MDG target in sanitation[12.]

With this scenario of the health situation, it is important to study the burden of disease due to WASH like Diarrehea, septicaemia etc using Indian data to know the real dimensions of the problem and work towards preventive measures. This will help in strengthening the scientific and empirical basis of planning sound strategies to manage risk uncertainties and for consideration of ethical and other issues.

5.0 objective of study

5.1 General objective - The present study is undertaken to assess the WASH practise in the Maternity and O.T. unit of the hospital while handling the mothers.

5.2 Specific objective - The specific objectives of the study are as follows:

a) To monitor the quantity of water.

b) To assess the Infection control and hygiene practice by the staff and mothers undergoing procedures.

c) To assess the excreta disposal practise system by the staff and mothers.

d) To assess the knowledge of staff about WASH and

e) To asses the adequacy of water in the facility.

Definitions

Infection Control In hospital : During the study it was defined by using sterile equipments for the procedure , safe injection and infusion practises (one syringe , one needle , one time) , segregation of human anatomical waste as pr BMW, frequency of cleaning of labour room and labour table by disinfectants , restricted entry to O.T. and Labour room from other then patients and staff.

Hygiene Practise: wash hands as per standardized hand wash technique before touching every new patients, ensuring perineal hygiene of the mothers by providing sterile gauze and cotton for the purpose of sanitary napkins, using elbow tap for washing hands before any procedure, washing hands after urinal and before feeding new born baby and providing fresh bed sheets to the patients daily.

Excreta Disposal: disposing of the excreta in the pit or flushing after every time they defecate in the latrines and disposing of the used sanitary napkins in the dustbin.

WASH: stands for WATER SANTITATION AND HYGIRNE. It includes

6.0 METHODOLOGY

6.1 Study Design: Cross sectional study

6.2 Study Area: Sadar hospital Bhagalpur, Bihar

6.3 Study population: newly delivered mothers and women admitted for who has family planning procedure between the age group of 16-40yrs

6.4 Sampling and sample Design: Purposive sampling of all the indoor patients of the obstrectian department.

6.5 Data Collection Tool and Technique: It is a cross sectional study conducted in the Bhagalpur region of Bihar State. The data was collected from Staff, newly delivered mothers and patient who has undergone family planning procedure via pre-tested semi structured questionnaire, a Checklist for observation including various aspects of WASH and Desk Review for guidelines, conceptual framework and Research. The sampling was purposive sampling in which we interviewed Hospital Staff (GNM's, ANM's, MAMTA and 4^{th} Grade) Patients (mothers and patient under gone family planning procedure by filling 241 questionnaire detailed information about WASH. The respondents were asked regarding Knowledge Attitude and perception w.r.t WASH and most importantly awareness towards WASH.

Participants were explained in detail regarding the purpose of the study; informed consent was obtained and questionnaires were filled according to respondent's answers. Necessary steps were taken to maintain anonymity.

6.6 Ethical Clearance: Ethical clearance for the study was obtained from institutional ethical committee.

6.7 Data Management and Analysis: Information thus obtained from the semi-structured questionnaire was entered in MS excel spreadsheet and then coding was done to enter the data in SPSS. Descriptive study is carried out to analyze results thus obtained. The information obtained was presented in terms of percentages.

7.0 Study Findings

7.1 Demographic Profile of Respondents

Table .1 showing the general information of the Respondents.

GENERAL PROFILE	Number of respondents N=100 (% in Parenthesis)
RELIGION	
HINDU	51(51%)
MUSLIM	45(45%)
OTHERS	3(3%)
CAST	
S.C.	60(60%)
S.T.	24(24%)
O.B.C	16(16%)
CATEGORY	
BPL	93(93%)
GENERAL	7(7%)

The patients equally belong to the Hindu as well as Muslim community. However the majority of patients were from the BPL population which contributes to 93% of the total respondents. Addition to this the S.C. population accounts for 60% of the total interviewed patients.

7.2 KNOWLEDE ATTITUDE AND PERCEPTION OF PATEINTS REGARDING WASH

The figure:1 shows that patient awareness of practising Hand wash.

Majority of them knows that they should wash their hands. But at the same time only 36% wash their hands before taking meal and despite of so much awareness only 38% wash their hands before breast feeding their new born. And it was terrible to see that only 31% wash their hands after using urinal.

Figure:2 showing Hand wash practise to prevent infection

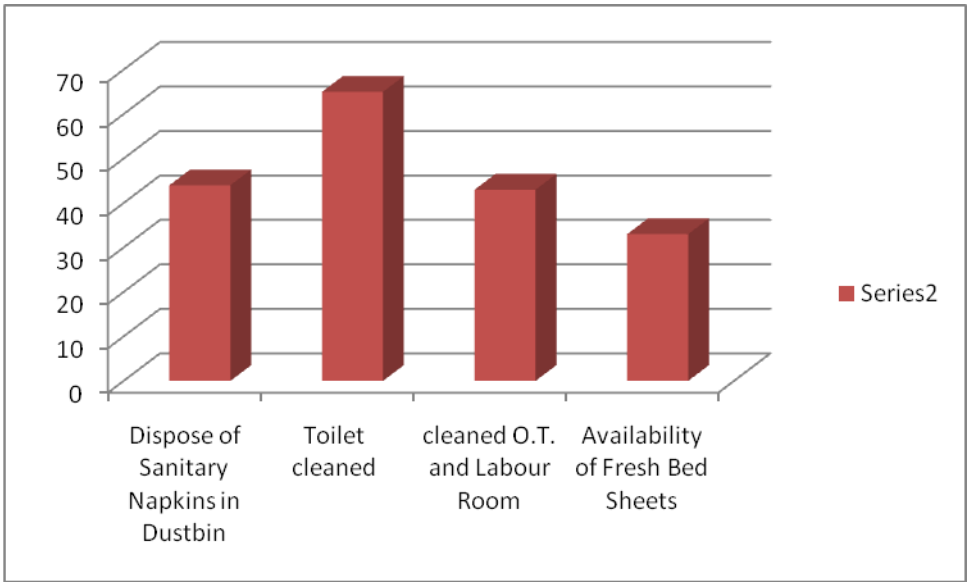
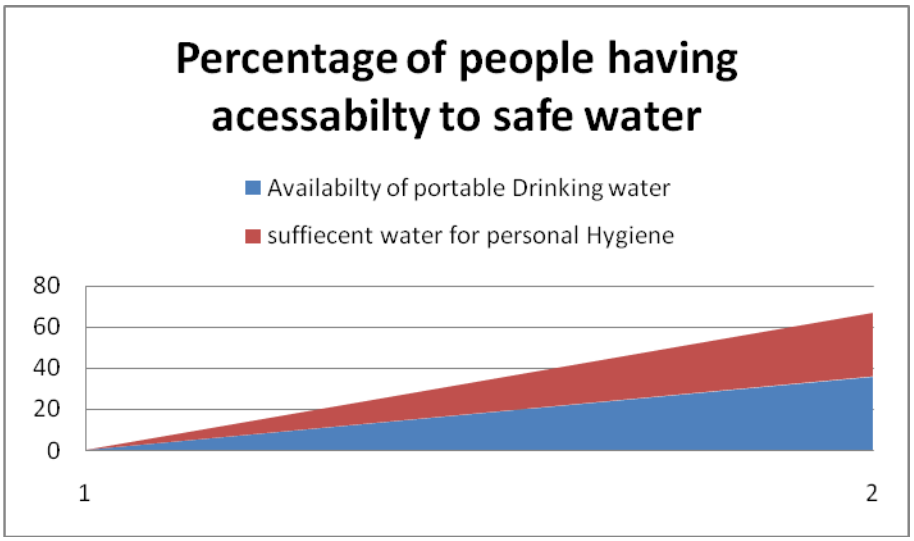


Figure:3 showing sanitation and hygiene practise

The above figure shows that only 41% dispose of their sanitary napkins in the dust bin and rest of them through it open in the bathroom. However more than 60% says those toilets are cleaned. Addition to this only 40% says that labour room and O.T. were clean during their presence and only 30% gets fresh bed sheets on the daily basis.

7.3 Accessibility to water for drinking and Personal Hygiene



The figure: 4 is showing that only 31% gets the portable drinking water and only 33% gets the sufficient amount of water for their personal hygiene.

7.4 Assessment of WASH in Maternity Unit as per Checklist

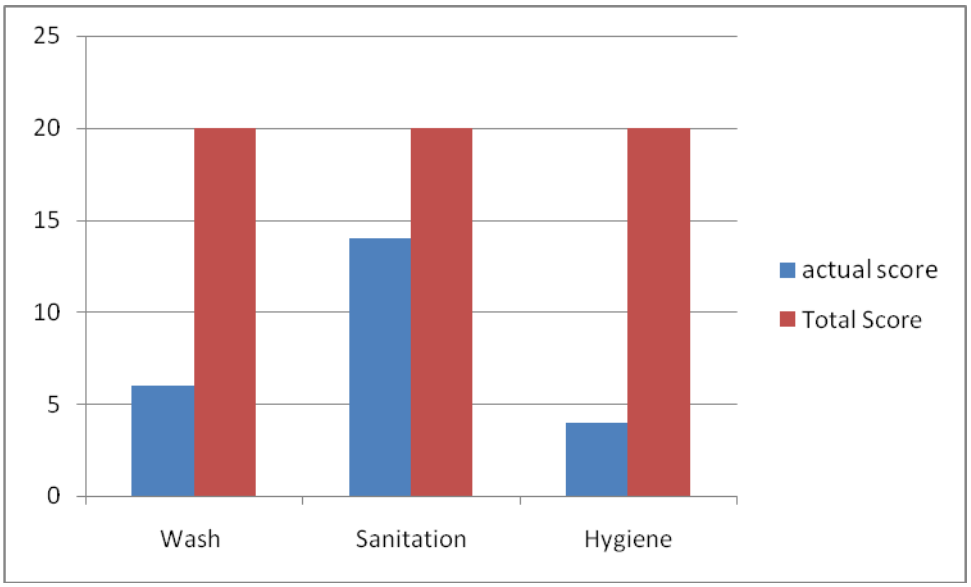


Figure: 5

The results of checklist are showing that the wash and hygiene practise are very much compromised in the institution however the sanitation aspect is still better. The wash and hygiene scored 6 and 4 out of 20 and sanitation in the better position with 14 out of 20.

7.5 Practises by Staff w.r.t. Hygiene

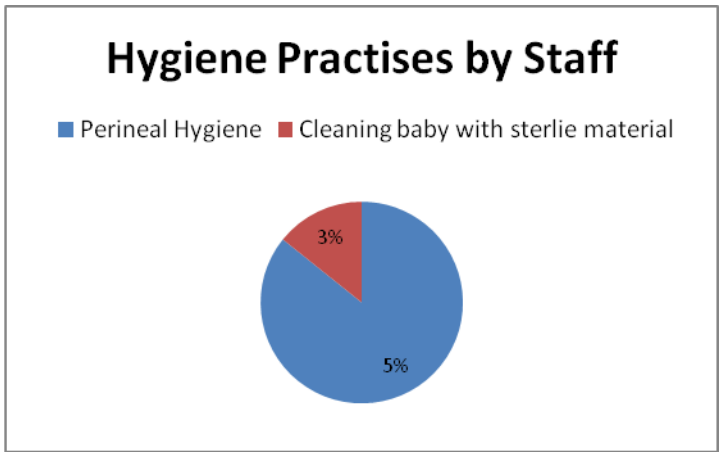


Figure: 6 shows that only 3% of staff ensures the perineal hygiene of the patient by providing the sterile gauze or cotton or napkin to the mothers , whereas only 5% clean the new born baby sterile cloth or cotton.

7.6 Various indicators showing hygiene practise by staff

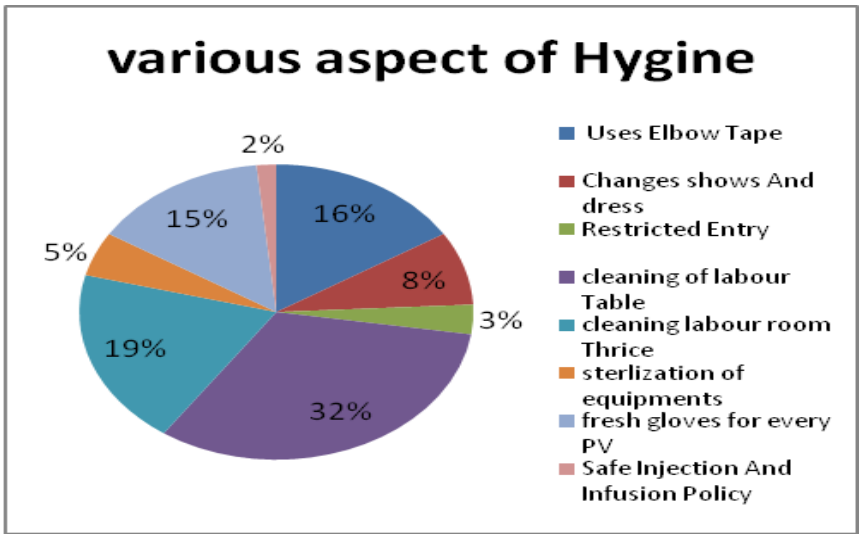


Figure .7

It is very much clear from the picture only 2% of the staff dispose of the needles and syringes into the hub cutter and needle cutter. And only 5% of the staff actually sterilized the equipments or use sterilized equipments for any clinical procedure. Addition to this only 2% uses elbow tap to wash their hands before touching any mother in the O.T. and labour room. Only 16% of the staff actually maintains the hygiene of the unit by keeping it wiped at least 3 times in a day. While conducting PV only 19% of the staff uses fresh gloves to prevent the infection.

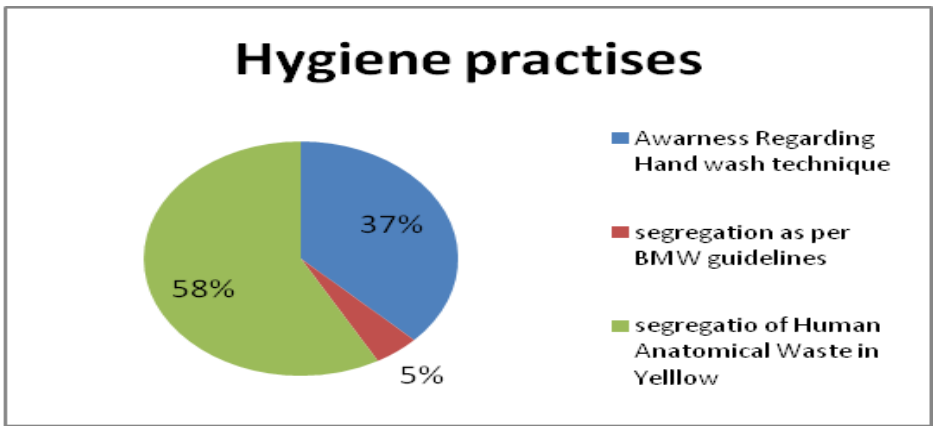


Figure: 8

Despite of so many trainings given to the staff, the figure shows that only 37% of the staff is aware of the hand wash technique and only 5% staffs segregates the waste generated as per BMW management. However 58% knows that human anatomical waste are disposed off in the yellow colour coded dustbins.

8.0 DISCUSSION

Study findings indicate that the water and hygiene aspect of the WASH is much compromised. Finding shows that the 80% of the patients are ware of the importance of hand washing but still they do not wash their hands before meal and after using urinal. If we look at overall picture of the maternity ward then there is increase chances of infection as their is no sterilization of equipments and only 5% of the staff uses fresh gloves to conduct pv every time. Hence it would lead to higher rate of infection among mothers which might be cause of MMR across the globe.

The mothers do not even get the sufficient amount of water for drinking and personal hygiene so they are totally trapped in the web of infectious medium. The new born has the higher chances of infection. Despite of that the ANM's clean the baby with the clothes that are brought by the attendants. It is not because they do not know and their is shortage of sterile material but they are not self motivated towards their job. During assessment of perineal hygiene of the mothers, the staff has mentioned that they do not provide any thing from the unit rather they asked the patients to manage it by them self.

So we should focus more on the monitoring of the staff and try to motivate and educate the patients to focus more on WASH. As per the patients they do not even get portable water they just collect the water from the direct tap that is in place outside the ward. So it would increase the chances of diarrheal or other hazardous water born diseases.

There has been studies in the past that has proven that It has been estimated that 30,000 newborns die each year in Nepal during the neonatal period where the neonatal mortality rate is approximately 39 deaths per 1,000 live births Furthermore, the WHO has estimated that 39% of deaths among neonates in Nepal are attributable to pneumonia, meningitis, sepsis/septicemia, and diarrheal disease.

The WHO data suggest that a substantial proportion of these deaths may be preventable with routine hand-washing practices. If the population attributable risk percentages of between 12% and 56% observed in one of the study can be applied to the 4 million annual neonatal deaths world wide, promotion of appropriate hand-washing practices in developing countries

like India ,Nepal, Bangladesh may have a tremendous impact in reaching Millennium Development Goal 4.

Further more; Birth attendant hand-washing with soap and water is well accepted as the standard of care in developed country settings. In developing countries, where most births take place at home, the concept of washing with soap before delivery to protect against infection is not well understood. As hand-washing behaviours are notably complex, indicators are also needed to evaluate and validate the compliance of hand-washing promotion when moved to programs and policy. So this is important for any national level control program-I or state level polices to do a deep research on the above said issues as India is one of the most prevalent country with regards to water born and infectious diseases.

On the other hand; study has some of the limitations. The main limitation is the small sample size. Because of the time limitation i was not able to conduct study on a large scale. Also there is a need to conduct the focused group discussion among all the patients to assess the various loop holes in the delivery system. Furthermore the WASH was assessed on little aspect governing to morbidity related to water sanitation and hygiene.

9.0 Conclusion and Recommendations

The past studies suggest that access to water and sanitation independently contribute to child and maternal mortality outcomes. If the world is to seriously address the Millennium Development Goals of reducing child and maternal mortality, then improved water and sanitation accesses are key strategies. This study has also come out with that the WASH is poorly compromised. Despite of all the facilities and arrangements the beneficiaries are not getting safe water for hygiene and drinking. Rather they are taking infection in some or the other way.

We should focus on providing better facilities to the patients by planning the polices focusing on WASH. To avoid infection we should provide the patients with portable drinking water and continuous water supply in the wash rooms and labour room. We should be accountable to provide healthy environment and good sanitation facilities.

The organization is the government institution where we get so much of funds and support from the NGO'S and state government hence we should try best to procure all the necessary material to overcome the issues related to WASH.

We should timely conduct these assessments in the institution to provide better hygienic conditions to the mother and child who are more prone to water born diseases. The beneficiaries need to be educated and counselled regarding WASH. Because the literacy rate of Bhagalpur is below 64.96 and the local people are not aware of the consequences of the un-hygienic and poor sanitation practises.

To monitor and motivate the staff with respect to WASH we should prepare schedules and policy to evaluate them on regular basis and conduct competition between the staff as a best performer of the month.

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11.0 ANEXURE -1

CHECKLIST

WATER

- Days since last water tank was cleaned <2yrs , >2yrs or 2yrs.....**last year**
- Filter based water purifier set? yes or no**....no**
- Is water available to patients for drinking and is it sufficient
- Water available for personal hygiene**.... yes or no**

- Is it easily accessible yes or No**...**
- Point source of water: tap, hand pump , direct pipe ; any other**...**

- How far collection point from the ward 50ms , <50ms , >50ms **50ms**

- Is their any proper storage of water by hospital Yes or No , if yes then how**..**
- Was chlorination done and when?**...**

- 24*7 water supply available..**yes or no**

SANITATION

- Proximity to water supply 0ms 0-10ms >10mss.....**>10ms**
- Defecation zones / trench latrines....**yes or no**

- Latrines: pit , community or pour flush**.....**
- Is there any separate drainage for water disposal yes or no**?..**

- Medical waste disposal (as per BMW management guidelines) yes or No...
- Toilets for disabled? Yes or no...

- Separate toilets for ladies? yes or no **.....**
- Number of toilets sufficient? If yes then how much?
- Toilets are attached to ward yes or no ...
- Is toilet attached to labour room yes or no...

HYGINE: current practise on key hygiene behaviour

- Washing hands after each clinical procedure ; yes or no....
- Scrubbing hands before touching new patient? Yes or no....
- Proper sterilization of equipments? Yes or no **.....**
- Mother wash their hands before feeding the new born? Yes or no...
- Labour room and O.T. are wiped three times in a day? yes or no.....
- Does segregation on linen is as per guidelines yes or no.....
- Does mother wash their hands after changing the dipper of their child? Yes or no**...**
- Do they wash their after every time they use urinal**.....**
- Do they wash their hand with soap or any other disinfectant after defecation**?...**
- do they wash their hands before taking their meal with soap...**yes or no**

Water score =`20
Sanitation score = 20
Hygiene = 20
Total score 60

Interview schedule for staff

Demographic profile

- Name .....
- Age / sex .....
- Designation.....
- Department .....

Quantitative question

- Are you aware of hand wash technique? yes or no
- Is water available 24*7for labour room?
- Do you segregate the waste as per BMW guide lines?
- Where do you segregate human anatomical waste? yellow, black , red ...
- Do you wash your hands as per standardized hand wash technique after every per vaginal examination? YES OR NO
- Is sterilization of the equipments done in your shift? **YES OR NO**
- Are sterilized equipments used during conduction of labour or Copper- T insertion? **YES OR NO**
- Do you practise safe injection and infusion practises (one needle , one syringe , one time) **yes , No**

Qualitative question

- How frequently O.T. or labour room is cleaned by disinfectant in a day??? Once, twice or more.
- Labour room or O.T. is cleaned after every delivery? yes or no
- Do you have provision restricted entry to enter the labour room? YES OR NO, if No then explain.

- Whether you have different shoes and cloths to enter the labour room or O.T ? Yes or no if no explain?

- How do you clean the new born baby? With cleaned cotton cloth , cotton and gauze or others? Explain?
- Do you ensure the perineal hygiene of the mother? How explain,,,,

- Do you use elbow tap to wash your hands before conducting labour or any procedure in O.T. yes or no if No explain

Interview Schedule for Mothers

Demographic profile

Name.....

Address.....

IPD No.....

Category : BPL , General or others..

Cast: SC , ST , OBC , others.

Religion: Hindu , Muslim , Christian , Sikh or others ..

Knowledge Attitude and Perception

- Do you think you should was your hands before and after taking your meal : yes or No , Do not know...
- Do you wash your hands before touching or Feeding your new born baby: Yes or No...
- Is there sufficient supply of water for your personal hygiene in the hospital : yes or No , do not know...
- Is your in and around environment cleaned: yes or No..
- Do you get portable drinking water: yes or No..
- was the labour room or O.T. clean during your presence : yes or No , if No then explain
- do you think the food provided to you is healthy and eatable : very good , good , bad , not eatable :
- Do you wash your hands every time urinate : yes or no...
- Is bathroom easily accessible : yes or no.
- Do you get required quantity of sanitary napkin ...yes or no...
- Do you think your ward toilet is cleaned daily : yes or no...if No then explain...

- Where do you dispose off your sanitary napkins : dustbin , you throw it in bathroom . Any other..
- do you get clean and fresh bed sheet every day : yes or No

- Any comments or suggestion for improvement .....