

**A Study on the Assessment of Reason of Refusal for Indoor  
Residual Spray in Patna, Bihar**

**Internship Training  
at  
CARE India, Bihar Technical Support Programme  
(February 1 - April 30, 2014)**

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**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that Ms. Srutidhara Dhir Narendra, student of Post Graduate Diploma in Hospital and Health Management (PGDHM) from Institute of Health Management Research, Jaipur has undergone internship training at CARE India from 27<sup>th</sup> January 2014 to 30 April 2014

The Candidate has successfully carried out the study designated to her during internship training and her approach to the study has been sincere, scientific and analytical.

The Internship is in fulfillment of the course requirements.

I wish her all success in all her future endeavors.



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The Certificate is awarded to

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In recognition of having successfully completed her Internship at

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**A study on the assessment of reason of refusal for Indoor Residual Spray in Patna,  
Bihar**

From

27<sup>th</sup> January, 2014- 30<sup>th</sup> April 2014

She comes across as a Committed, Sincere & Diligent person who has a strong drive & zeal for learning

We wish her all the best for future endeavours

**Director Manager**  
**Sitamarhi BTSP**  
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**CERTIFICATE BY SCHOLAR**

This is to certify that the dissertation titled **A Study on the assessment of Reason of Refusal for Indoor Residual Spray in Patna, Bihar** and submitted by **Ms.Srutidhara Dhir Narendra** Enrollment No. **17-1385** under the supervision of **Professor Alok Mathur** for award of Postgraduate Diploma in Hospital and Health Management of the Institute carried out during the period from **27<sup>th</sup> January 2014** to **30<sup>th</sup> April** embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other Institute or other similar institution of higher learning.

*Srutidhara Dhir Narendra*  
Signature

## **TABLE OF CONTENTS**

| <b>S. No.</b>                             | <b>Contents</b>                       | <b>Page No.</b> |
|-------------------------------------------|---------------------------------------|-----------------|
|                                           | Acknowledgement                       | 7               |
|                                           | List of Tables                        | 8               |
|                                           | List of Abbreviations                 | 9               |
| <b>Part 1 : Introduction (Internship)</b> |                                       | <b>10</b>       |
| 1.1                                       | Introduction                          | 10              |
| 1.2.                                      | Organizational Profile                | 10              |
| 1.3                                       | Services provided by the Organization | 12              |
| 1.4                                       | Project worked on                     | 13              |
| 1.5                                       | Organizational Structure of SKAEP     | 14              |
| 1.6                                       | State profile for Bihar               | 15              |
| 1.7                                       | Other Projects Undertaken             | 16              |
| 1.8                                       | Observations on the field             | 16              |
| <b>Part 2: Dissertation</b>               |                                       |                 |
|                                           | Executive Summary                     | 18              |
| 1.                                        | Introduction                          | 19-21           |
| 2.                                        | Rationale                             | 22              |
| 3.                                        | Review of Literature                  | 23-24           |

|     |                                           |       |
|-----|-------------------------------------------|-------|
| 4.  | Research Question                         | 25    |
| 5.  | Objectives                                | 25    |
| 5.1 | General Objectives                        | 25    |
| 5.2 | Specific Objectives                       | 25    |
| 6.  | Methodology                               | 26-27 |
|     | Study Design                              | 26    |
|     | Study Area                                | 26    |
|     | Study Participants                        | 26    |
|     | Sampling                                  | 26    |
|     | Methods and Instruments of Data Gathering | 26    |
|     | Statistical Treatment                     | 27    |
|     | Ethical Consideration                     | 27    |
|     | Limitations of the Study                  | 27    |
| 7.  | Results and Findings                      | 28-31 |
| 8.  | Discussion                                | 32-34 |
| 8.1 | Microplan                                 | 32    |
| 8.2 | Insecticide and Equipment                 | 33    |
| 8.3 | Training and Monitoring                   | 33    |
| 8.4 | IEC/BCC                                   | 34    |

|    |                       |       |
|----|-----------------------|-------|
| 9  | Conclusion            | 35    |
| 10 | References            | 36    |
|    | <b>Annexure</b>       |       |
| 1  | English Questionnaire | 37-40 |
| 2  | Hindi Questionnaire   | 41-44 |

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Srutidhara Dhir Narendra

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## LIST OF FIGURES

| Table No. | Title of the Figure | Page No. |
|-----------|---------------------|----------|
| 1         |                     |          |
| 2         |                     |          |
| 3         |                     |          |
| 4         |                     |          |

## **LIST OF ABBREVIATIONS:**

ASHA- Accredited Social Health Activist

AWW- Angan-wadi Worker

BCC- Behavior Change Communication

DDT- Dichloro-diphenyl-trichloroethane

DPO- District Program Officer

GoB- Government of Bihar

GoI- Government of India

IEC- Information Education Communication

IRS- Indoor Residual Spray

KA- Kala Azar

KLW- Kala-Azar Link Worker

KTS- Kala-Azar Technical Supervisor

MO- Medical Officer

NRHM- National Rural Health Mission

NVBDCP-National Vector-borne Disease Control Program

PHC-Primary Health Centre

PKDL-Post Kala-Azar Dermal Leishmaniasis

PRI-Panchayati Raj Institution members

SKAEP-Strengthening Kala- Azar Elimination Program

VL-Visceral Leishmaniasis

## **PART 1**

# **INTERNSHIP REPORT**

## **1.1 INTRODUCTION:**

Internship is a part of the second year program, where we have to observe and learn the work culture of organization. Also it will be necessary to participate in various department/activities so we could orient our self with different departments that gives us first hand exposure.

Internship is the process, through which we can understand process of work and thereafter be able to involve in decision making.

I am appointed as a District Programme Officer for VL-Elimination Project, Bihar at CARE, India, an international relief organization that also works in the health sector. The organization aims to provide technical support to the Government of Bihar for VL-elimination project for better monitoring and quality outcome of the project

## **1.2 ORGANIZATIONAL PROFILE:**

**CARE** (Cooperative for Assistance and Relief Everywhere) is a major international humanitarian agency delivering broad-spectrum emergency relief and long-term international development projects. Founded in 1945, CARE is nonsectarian, impartial, and non-governmental. It is one of the largest and oldest humanitarian aid organizations focused on fighting global poverty. In 2013, CARE reported working in 86 countries, supporting 927 poverty-fighting projects and humanitarian aid projects, and reaching over 97 million people.

CARE's programmes in the developing world address a broad range of topics including emergency response, food security, water and sanitation, economic development, climate change, agriculture, education, and health. CARE also advocates at the local, national, and international levels for policy change and the rights of poor people. Within each of these areas, CARE focuses particularly on empowering and meeting the needs of women and girls and on promoting gender equality.

CARE International is a confederation of thirteen CARE National Members and one Affiliate Member, each of which is registered as an autonomous non-profit, non-governmental organization in the country. The thirteen CARE National Members are: CARE Australia, CARE Canada, CARE Denmark, CARE Deutschland-Luxembourg, CARE France, CARE India, CARE International Japan, CARE Nederland, CARE Norge, CARE Österreich, Raks Thai Foundation (CARE Thailand), CARE International UK, and CARE USA. The CARE Affiliate Member is CARE Peru. Programs in developing countries are usually managed by a Country Office, but

CARE also supports projects and may respond to emergencies in some countries where they do not maintain a full Country Office.

CARE has been working in India for over 60 years, focusing on ending poverty and social injustice. This is done through well-planned and comprehensive programmes in health, education, livelihoods and disaster preparedness and response. The overall goal of CARE is the empowerment of women and girls from poor and marginalized communities leading to improvement in their lives and livelihoods.

CARE India, Bihar is currently involved in two projects namely, Integrated Family Health Initiative (IFHI) and SKAEP. IFHI works in the sector of reproductive and child health services. SKAEP has been developed to eliminate KA from the endemic state of Bihar.

### **1.3 SERVICES PROVIDED BY THE ORGANIZATION:**

CARE programming falls into the following broad themes:

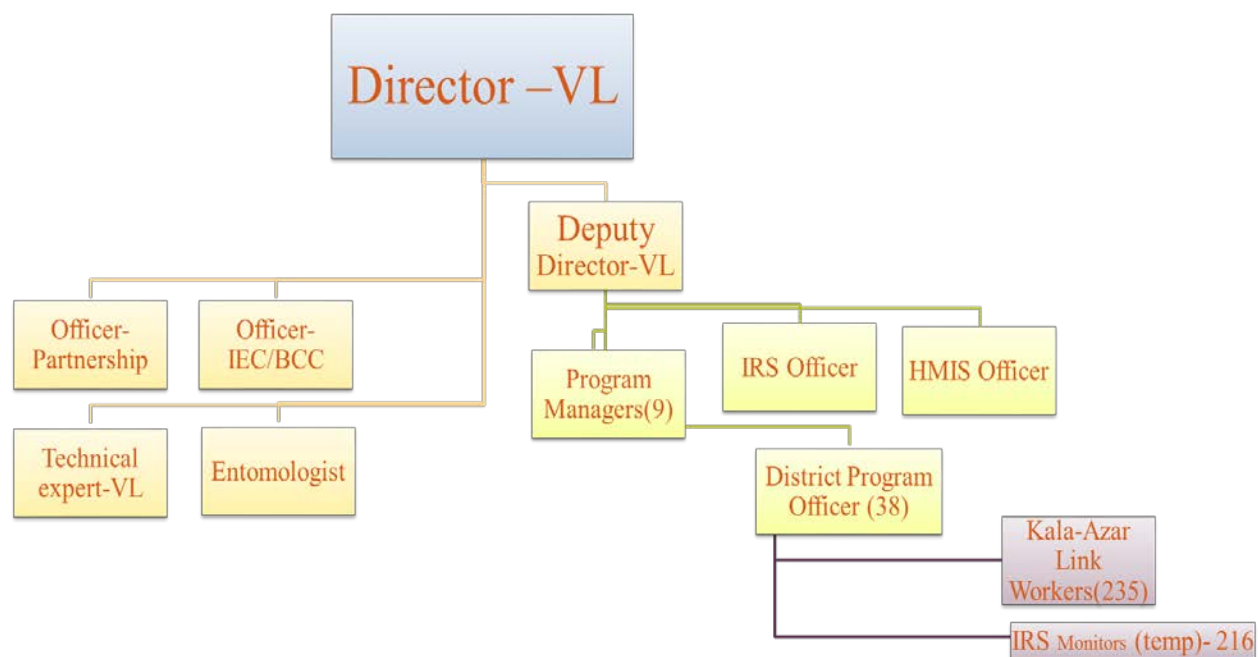
- **Gender and women's empowerment:** CARE lists the empowerment of women and girls as its first priority, and focuses its programming in other areas towards this. In 2006 CARE formed the CARE International Gender Network (CIGN) to improve the coordination and quality of CARE's work on gender equality.
- **Emergency response:** CARE supports emergency relief as well as prevention, preparedness, and recovery programs. CARE reported that in 2013 its emergency response and recovery projects reached over 4 million in 40 countries. CARE is a signatory of major international humanitarian standards and codes of conduct including the Code of Conduct for the International Red Cross and Red Crescent Movement and NGOs in Disaster Relief, the Sphere standards, and the Humanitarian Accountability Partnership (HAP) principles and standards.
- **Food security:** CARE provides emergency food aid and supports the prevention of malnutrition through demonstrating proper breast feeding, providing education focusing on the cultivation and preparation of nutritious food, and improving infrastructure.
- **Health:** CARE's health programs are focused on maternal health and HIV/AIDS, but also address other areas such as nutrition, safe drinking water, health education, and training local health workers.

- **Climate change:** CARE engages in climate-change advocacy and supports local mitigation strategies such as promoting early warning systems, helping communities to draft evacuation plans, providing technical equipment and information, supporting reforestation, and working with local governments to reduce pollution
- **Education:** CARE provides economic incentives to help parents keep their children in school, advocates for the importance of educating girls, and supports programs that ensure that girls receive a quality education and engage girls in extracurricular and leadership activities.
- **Water, sanitation and Hygiene (WASH):** CARE builds and maintains clean water systems and latrines, and provides education about hygiene and water-borne illnesses. These programmes aim to reduce the risk of water-related diseases and increase the earning potential of households by saving time otherwise spent fetching water.
- **Economic Development:** CARE supports increasing market linkages, promotes diversified livelihoods, organizes Village Savings and Loans Associations (VSLAs), and provides entrepreneurship training.
- **Advocacy:** CARE's advocacy for improved development policy is directed at local and national governments, as well as international organizations such as United Nations institutions, the European Union and other multilateral and international organizations

#### **1.4 PROJECT WORKED ON:**

**SKAEP** is a recently funded project by BMGF. The project intends to address critical challenges affecting Kala Azar elimination, identified in 8 districts where CARE's Integrated Family Health Initiative (IFHI) is currently operational, to support the Government of Bihar to reduce morbidity and mortality due to Kala Azar and scale it up to the entire state and accelerate progress towards eliminating the disease. The challenges include lack of execution capacity to increase coverage of treatment in the public and private sector, poor performance in vector control in the public sector, under reporting of cases, no quality monitoring of Indoor Residual Spraying (IRS), Post Kala Azar Dermal Leishmaniasis (PKDL) cases, weak referral system and no proper active case search. Thus under this project CARE intends to provide technical support to the government to help achieve the goal of elimination by 2015 and sustain the elimination. CARE thereafter also aims to increase ownership of the government towards the project.

### 1.5 Organizational Structure of SKAEP:



### ORGANOGRAM OF SKAEP

## **1.6 STATE PROFILE- BIHAR:**

**Bihar**, located in eastern India, is the 12th largest state in terms of geographical size of 38,202 sq mi (98,940 km<sup>2</sup>) and 3rd largest by population. It is bounded by Uttar Pradesh to its west, Nepal to the north, Northern part of West Bengal to the east and by Jharkhand to the south. The Bihar plain is divided into two parts by the river Ganges which flows from west to east. Bihar has forest area of 6,764.14 km<sup>2</sup>, which is 7.2% of its geographical area. In 2000, southern Bihar was bifurcated to form a new state of Jharkhand

The state of Bihar has an area of 94,163 sq. km. and a population of 103.8 million. There are 9 divisions, 38 districts, 101 sub divisions, 533 blocks and 45,098 villages. The State has population density of 881 per sq. km. (as against the national average of 312). The decadal growth rate of the state is NA (against 21.54% for the country) and the population of the state continues to grow at a much faster rate than the national rate.

The literacy rate of Bihar is 63.8 %. SC population in Bihar is 1.3 crore and ST population is 0.076 crore. The Total Fertility Rate of the State is 3.7. The Infant Mortality Rate is 44 and Maternal Mortality Ratio is 261 (SRS 2007 - 2009) which are higher than the National average. The Sex Ratio in the State is 916 (as compared to 914 for the country).

The state has 9696 sub centres or health sub centres as known here (shortage of 8837 SCs). The state has 3083 PHCs (shortage of 1220 PHCs). There is a huge shortage of all level of health workers in the state including doctors, nurses, health workers, ASHAs, AWWs, pharmacists



## **1.7 OTHER PROJECTS UNDERTAKEN:**

Though I was appointed as District Programme Officer for SKAEP, I was assigned the task of managing the data for the whole state for the project and placed at the State office. I was involved in analysis of different data for the project and report the gaps to the team for them to take further decisions to address the gaps. I was also involved in planning strategies for the districts along with the state team for reporting coverage and quality of the forthcoming IRS.

## **1.8 OBSERVATIONS ON THE FIELD:**

I had the opportunity of visiting 6 districts during my period of internship to observe the progress and quality of ongoing IRS. Below are some of the observations:

- The quality of the spray was not up-to the mark. Uniform spray was being maintained in very villages/households
- The guidelines for maintaining a proper spray was only followed in a few villages.
- Except in one district, nine of the spray squads were found to use personal protective equipment
- The spray squads in some districts were not satisfied with the job owing to very low wages and lack of appreciation from the government
- Acceptance and participation of district government officials in monitoring the spray squads along with DPOs
- Appreciation of district government officials of the project and work done by DPOs and KLWs

**Part-2**

**DISSERTATION REPORT**

**A STUDY ON THE ASSESSMENT OF REASON OF REFUSAL  
FOR INDOOR RESIDUAL SPRAY IN PATNA, BIHAR**

## **EXECUTIVE SUMMARY:**

Visceral Leishmaniasis, often referred to as a poor man's disease, is endemic in the state of Bihar, India. The first target for elimination of the disease in the year 2010 could not be achieved due to lack of utilization of proper resources provided by the government. Hence the new set target for achieving the elimination of the disease, needs adequate utilization of resources. One of the major factors influencing the elimination of the vector and thus the elimination of the disease is Indoor Residual Spray of households, mainly the kuccha and semi-pucca houses, with DDT. Previous studies have shown the resistance and low level of acceptance of household members for DDT. Although IRS has been conducted in the state in the past, it was more on reports than actually happening. The places where IRS had actually taken place, were not properly sprayed, i.e. the IRS was not a quality spray and most of the prerequisites necessary for a quality IRS always lacked at the block level.

## **1. INTRODUCTION:**

Visceral Leishmaniasis or more widely known as Kala-Azar is a slow progressing indigenous disease caused by a protozoan parasite of genus *Leishmania* (*L. Donovanii* in India) which resides in a vector called sandfly. It is the second largest parasitic killer in the world, only after malaria. It is one of the World's most neglected and poverty-related diseases, affecting the poorest people in developing countries associated with malnutrition, weakness of the immune system, displacement, poor housing, illiteracy, gender discrimination, and lack of resources. *Kala azar* is spread over a large geographical area across the globe with estimated yearly incidence of *Kala azar* of 500,000 cases, which lead to loss of nearly 2.4 million disability-adjusted life years (DALYs) each year. Since the last century several outbreaks of *Kala azar* have affected South-East Asia. Various programmes to control the disease have failed despite considerable efforts being done for prevention and control of the disease.

In India, out of the four states where Kala Azar is prevalent i.e, West Bengal, Jharkhand, Bihar and Uttar Pradesh, Bihar contributes to more than 80% of the cases, reason being its low economic status, thus increasing the vulnerability of poverty, which is one of the main factors responsible for the poor living conditions, leading to this deadly disease. Though the situation has improved over the years, still the poorest sections of the society e.g, the musahar tolas, BPL families, SC and ST populations and other marginalized populations are at a higher risk

Government of India had been able to lower the cases to a very less number in the 1950s owing to the IRS through Malaria Control Programme. However in the 1970s, due to reduction in IRS, the number of cases surged up. Thus in 1992, due to high incidence rate, centrally sponsored Kala-azar Control Programme was launched which was merged with NRHM in 2005 under NVBDCP. Government of India in 2002 National Health Policy had set a goal to eliminate *Kala azar* by year 2010, which could not be attained. India, Bangladesh and Nepal have demonstrated strong political will and commitment towards elimination of *Kala azar* by signing a Memorandum of Understanding (MoU) during the World Health Assembly in Geneva in 2005. The goal of Tripartite MoU was to contribute for improving the health status of vulnerable groups and population at risk living in *Kala azar* endemic areas of Bangladesh, India and Nepal by the elimination of *Kala azar* so that it would no longer be a public health problem.

Presently the Tripartite MoU aims towards reducing the annual incidence of *Kala azar* and post *Kala azar* dermal Leishmaniasis (PKDL) to less than one per 10,000 population at the district (or sub-district) level by the end of the year 2015.

Kala-Azar is a slow progressing indigenous disease caused by a protozoan parasite of genus *Leishmania* (*L.Donovani* in India) which resides in a vector called sandfly. There is only one sandfly vector of Kala-azar in India *Phlebotomus argentipes*. They prefer high relative humidity, warm temperature, high subsoil water and abundance of vegetation. Sandflies breed in favourable micro-climatic conditions in places with high organic matter that serve as food for larvae. These are ecologically sensitive insects, fragile and cannot withstand desiccation and thus this disease is associated with the weaker vulnerable sections of the society.

Over the years, the cases of Kala azar has been declining in a rapid rate. However the number of new cases occurring every year is still of great concern and so is the number of deaths. Thus the elimination of the disease becomes all the more necessary. Moreover, Kala azar is referred to as a poor man's disease, since it occurs among the weakest vulnerable parts of the societies mostly in tribal areas and Musahar tolas. Thus the main reason for spread of this disease being the environment of these communities which is an ideal place for breeding of sand flies. Additionally the literacy levels of the people of these communities, thus the knowledge about the disease is low and thus the acceptance for the prevention of the disease.

From previous literatures and field observations, it has been found out that people in these communities are not prepared to accept support provided by government in providing IRS for free. Since people have less knowledge about the disease, they do not prefer treatment until late stage and after that even, most of them seek treatment from quacks. It has been scientifically proved that delay in treatment of Kala Azar, causes death in maximum patients. Although treatment for the disease is available free at the PHC level and the drug is also made available free, people do not prefer to go to public hospitals for numerous reasons, and thus the treatment gets all the more delayed.

Efforts have been made by GoI to provide free treatment to patients at PHC level by providing the drug Miltefosine free of cost and also the loss of wages incurred to the patient for getting admitted for treatment. One of the major ways of preventing the disease is Indoor Residual Spray. GoI has

made two rounds of IRS mandatory for elimination of the disease, one in the month of February-March and the other in the month of June-July.

However, despite all such efforts by GoI, incidence of Kala-Azar is still high in most districts of Bihar and some tribal areas of Jharkhand. So GoI, has entrusted CARE, an international organization with the task of providing technical assistance and much needed human resource to help them achieve the goal of elimination of Kala-Azar by 2016. Thus CARE India, has started a project **Strengthening Kala Azar Elimination Programme (SKAEP)**, under its Family Health Initiative project, funded by Bill and Melinda Gates Foundation, to help GoI achieve its goal of elimination. Through this program, the government aims to maintain quality IRS rounds which are necessary for the elimination of the disease. The organization aims to provide adequate resources to maintain quality IRS and supportive supervision and monitoring for the same

## **2. STATEMENT OF THE PROBLEM:**

High rates of refusals for IRS among community users have led to low quality and coverage of IRS in the district leading to high incidence of cases of Kala Azar in the district.

## **3. RATIONALE:**

Government of India had been able to lower the cases to a very less number in the 1950s owing to the IRS through Malaria Control Programme. However in the 1970s, due to reduction in IRS, the number of cases surged up. Thus in 1992, due to high incidence rate, centrally sponsored Kala-azar Control Programme was launched which was merged with NRHM in 2005 under NVBDCP. IRS is one of the major controlling methods for the vector of VL. It is a simple and cost effective method of controlling endophilic vectors and DDT remains the insecticide of choice for the control of leishmaniasis in India. IRS has been conducted by GoB since 2002 across all districts of Bihar, but it was more on reports than actual happening. The coverage of IRS was more focused on rather than quality and thus the goal of eliminating KA by 2010 was not achieved. Thus there was a need to have quality IRS to eliminate the vector and subsequently eliminate the disease. The new set target to achieve elimination is thus by the year 2016 and for this GoB has approved CARE to provide technical assistance for maintaining quality IRS. From a situational assessment conducted across a few districts of Bihar, it was found that level of knowledge about Kala Azar is very low among community members and so is the acceptance of IRS which is being done in the district since the past two years. Since IRS is one of the major and cost effective ways to eliminate the vector and thus subsequently lead to elimination of the disease, high rates of refusals to accept IRS, will be a hindrance in achieving the overall goal for elimination. Thus this study was conducted with an aim to assess the most common reasons for refusal of IRS. Through this study various IEC tools can be developed to increase awareness about the disease and help increase in acceptance of IRS. The results of the study will also aim to advocate with the government for designing and developing appropriate resources to reduce the refusal rate of IRS. The study also aims to assess the level of involvement of KLVs in converting refusals, since along with providing supportive supervision to spray squads for maintaining a quality IRS, the KLVs are also responsible for maintaining the refusal rate at a bare minimum.

#### **4. REVIEW OF LITERATURE:**

- Kala-azar incidence in many districts was reduced after the DDT spray. 2 rounds of IRS was conducted in three study districts of Bihar. Need for good quality IRS and community acceptance for the same, where community acceptance have been found to be very low - V Kumar, S Kesari, S D Dinesh, Journal of Vector Borne Diseases, Sept 2009
- Indoor residual spraying is a simple and cost-effective method of controlling vector. DDT still remains the insecticide of choice because of its low cost, high efficacy, long residual action and relative safety when used for indoor residual spray. DDT however is not accepted in the community- Indian J Med Res, March 2006
- Important shortcomings for quality IRS included insufficient training of spraying squads and supervisors, deficient spray equipment, poor spraying performance, lack of protective clothing, limited coverage of houses resulting in low bioavailability of the insecticide on sprayed surfaces, and reduced vector susceptibility to DDT in India, which limited the impact on vector densities- M. Mamun Huda, Dinesh Mondal, Journal of Tropical Medicine ,Volume 2011
- There is a need to generate mass awareness through Behavioral Change Communication (BCC) about IRS operations in order to overcome the shortcomings (high refusal rates, lack of technical knowledge of spray squads) .IRS operations should be carried out in accordance with World Health Organization (WHO) and National Programme guide lines on the subject under strict supervision.- S.K Pattnaik, A K Mukhopadhyay- Evaluation of Ongoing IRS in Some Malaria endemic districts of Andhra Pradesh, Jan 2014
- Prevention measures practiced by the respondent in a study conducted on KAP for KA was not found satisfactory because 66% did not know about the prevention measures, and only 19.7% use mosquito net as prevention measure. Only 20% of the households had at least one usable bed net in their family. That DDT spray can control the disease was believed by 17.1% of the subjects, while 10.8% had the wrong impression that only cleanliness can be used as a preventive measure-N A Siddique, Narendra Kumar, RMRI, Awareness about KA and related preventive attitudes and practice in highly endemic district of Bihar



- Vector Control is solely done by Indoor Residual Spray using DDT. In spite of so many years of control operations, we have not been able to contain this disease in the State. Of increasing significance is the spreading of Kala-azar foci to newer districts in Bihar which were previously free from the disease. Lack of community participation has been a big lacuna in successful implementation of kala-azar Control Programme. There is an urgent need to revise the strategies used in Kala-azar Control Program with special focus on community participation in targeting areas like case detection, case reporting and referral to appropriate health facilities as well as in Vector control strategies like Indoor Residual Spray. –Prashant Shoni, Ragini Mishra, Kala-Azar Elimination in Bihar: Adoption of Newer Evidence-based Strategies Required for Elimination, 2013
- The levels of knowledge on malaria and IRS were 84.2% and 80.9%, respectively. However, the level of IRS utilisation was 57.8%. The common reasons given for not having a house spray were: not available at home (36.8%) and did not want the house to be sprayed (27.6%). Further results show that 41.1% of the respondents were not happy when the house was sprayed; 58.9% did not like the IRS strategy; 94.6% were concerned with the smell of the chemical used in IRS; 88.6% were concerned that the chemical was bad for children; and 96.1% were concerned that IRS causes walls to be dirty- Linda Malulu, A Knowledge, Attitude and Practice Survey on Indoor Residual Spraying (IRS) in Linda compound
- No reduction of mosquito bites and increase in number of bed bugs were the perceived main arguments against IRS, and most villagers that perceived no benefits lived in DDT treated villages. Most of the interviewees welcomed spraying (83.7%), but the smell and having to remove furniture from houses were the also major arguments against IRS - Américo David Rodríguez, PhD; Rosa Patricia Penilla, PhD, Acceptability and perceived side effects of insecticide indoor residual spraying under different resistance management strategies, Jul 2006

## **5. RESEARCH QUESTION:**

1. What is the reason for high rate of refusal for Indoor Residual Spray among community users in Patna?
2. What is the level of involvement of KLVs in converting the refusals into positives?

## **6. OBJECTIVES:**

### **6.1 GENERAL OBJECTIVE:**

General objective of the study is to find out the reason for refusal of IRS among community users/villagers and to design appropriate tools to increase awareness about IRS so as to bridge the gaps

### **6.2 SPECIFIC OBJECTIVES:**

- To assess the reason for refusal of Indoor Residual Spray
- To assess the level of knowledge about the disease
- To assess the involvement of KLV in converting the refusals.

## **7. METHODOLOGY:**

- ***Type of study-***

Descriptive Cross-sectional study was undertaken to study the elements under the sample undertaken and study was conducted within the limited specified time period (of three months from February- April).

- ***Study Area-***

Study was conducted in 16 blocks of Patna which had reported more than one caseload of Kala Azar in the previous year at the block level.

- ***Study Subjects-***

Households reported to refuse to spray during the ongoing IRS

- ***Sample-***

Purposive sampling was undertaken for the study as only those households were interviewed for the study which had refused for IRS. A purposive sampling of 200 households was chosen for the study from the coverage data of the district which had been reported as refusal households initially. 16 blocks were chosen from the district where IRS was being conducted. 2 villages from each block were chosen where the refusal rates had been reported to be high. 6 households which had refused IRS, were chosen from each village

- ***Methods and Instruments of Data Collection-***

A structured questionnaire was used as data collection tools for this study. This study was a questionnaire-based survey. A self-developed, pretested questionnaire consisting of both open and closed-ended items, addressing the specific objectives of the study, was used for the study. The study subjects comprised of those households in 16 blocks of Patna, who had refused for IRS. The questionnaires were printed and given to the KLTWs to be filled up and send to the State office for analysis and thereafter taking decisions on how to decrease the rate of refusal.

- ***Statistical Treatment-***

The returned questionnaires were checked for completeness of data. The data obtained from the completed questionnaires were analyzed in the computer by using Statistical Package for Social Sciences (SPSS) program Version 16. Cross tabulation was used to analyze the data.

- ***Ethical Consideration-***

- Informed consent was taken from the subjects
- Confidentiality of the subjects was maintained
- Names and personal information was not taken

- ***Limitations of the Study-***

The study was conducted in one district of Bihar so it might not represent the situation of the whole state. Also since the KLWs were asked to fill the questionnaires, there could be a possibility of false reporting. However every effort was made to motivate the KLWs to prevent this.

## **8. RESULTS/FINDINGS:**

### **8.1 Socio Demographic Characteristics of Population**

About a fifth (18.5 percent) was in the age group of up to 30 years. A major chunk, about two fifths of the population (41.5 percent) was of the age group 31 to 45 years and a third (34 percent) fell in the age group 46 to 60 years.

The population of Hindus was more in the district than the population of Muslims (56.7% Hindus and 43.3% Muslims).

More than 30 percent of the population were in the SC/ST category and around a quarter of the respondents (23.5 percent) were in the OBC category. A few of the respondents (8 percent) fell in the extremely backward caste (*Mahadalit*) and minor proportion of respondents (2.5 percent) did not know their caste.

About two fifths (40 percent) of the population was illiterate and a little less than a thirty (29 percent) had education only up to primary level. Very few of the respondents (3.5 percent) had education up to graduation or post graduation.

Around one quarter (24 percent) of the people lived in kuchcha houses in villages while 43 percent of the respondents lived in semi-pucca houses. 33 percent people lived in pucca houses.

**Table-1: Socio Demographic Characteristics of Study Population (n = 200)**

| <b>Characteristics</b> |                        | <b>Percentage of respondents</b> |
|------------------------|------------------------|----------------------------------|
| <b>Age</b>             | Upto 30 Years          | 18.5                             |
|                        | 31 to 45 Years         | 41.5                             |
|                        | 46 to 60 Years         | 34.0                             |
|                        | 61 and Above           | 6.0                              |
| <b>Religion</b>        | Hindu                  | 56.7                             |
|                        | Muslim                 | 43.3                             |
| <b>Caste</b>           | SC/ST                  | 30.5                             |
|                        | OBC                    | 23.5                             |
|                        | Others                 | 35.5                             |
|                        | EBC(Mahadalit)         | 8.0                              |
|                        | Don't Know             | 2.5                              |
| <b>Education</b>       | No education           | 40.0                             |
|                        | Primary                | 28.5                             |
|                        | Middle                 | 17.0                             |
|                        | Secondary              | 11.0                             |
|                        | Graduate/Post Graduate | 3.5                              |
| <b>Type of House</b>   | Kuchcha                | 23.7                             |
|                        | Semi Pucca             | 43                               |
|                        | Pucca                  | 33.3                             |

## **8.2 IRS, IEC and REASON OF REFUSAL:**

### ***8.2.1 Respondents/households who know about IRS***

**Table 1: Respondents who know about IRS (n=200)**

| Response                         | Percentage of Respondents |
|----------------------------------|---------------------------|
| People who know about IRS        | 65.5                      |
| People who do not know about IRS | 34.5                      |

About two-thirds of the respondents interviewed (65.5%) were reported to have heard of IRS.

### ***8.2.2 Households where spray squads had come to spray (n=200)***

**Table 2: Households where spray squads had come to spray**

| Response                                            | Percentage of Respondents |
|-----------------------------------------------------|---------------------------|
| Households where spray squads had come to spray     | 77.5                      |
| Households where spray squads had not come to spray | 22.5                      |

In more than three-fourths of the households (77.5%) spray squads had come to perform IRS.

### ***8.2.3 Time of Spray (n=155)***

Out of all the respondents to whose houses, spray squads had come, almost two thirds (64 percent) of the houses were visited up to 12 noon. The remainder third of the houses were visited after mid noon. This might have led to a increase in refusal cases as the villagers tend to rest post noon.

#### **8.2.4. Prior information about spraying:**

**Table 3: Households who had prior information about spray (n=200)**

|              | Frequency | Percent |
|--------------|-----------|---------|
| Valid    yes | 30.0      | 15.0    |
| no           | 170.0     | 85.0    |

Only 15 percent of the households interviewed responded to be informed about IRS before hand while majority of the households did not have any information about date nor time of spray beforehand.

#### **8.2.5 Information of spray (n=30)**

Out of all the respondents who were informed about the spraying to be taking place, a large majority (87 percent) were informed by the Kala Azar Link Workers. The remaining were informed by the spray squad members on the morning of spraying. This shows that the health workers nor the PRI members were much involved in informing the villagers about spraying to be taking place in their village.

#### **8.2.6 Importance of IRS (n=200)**

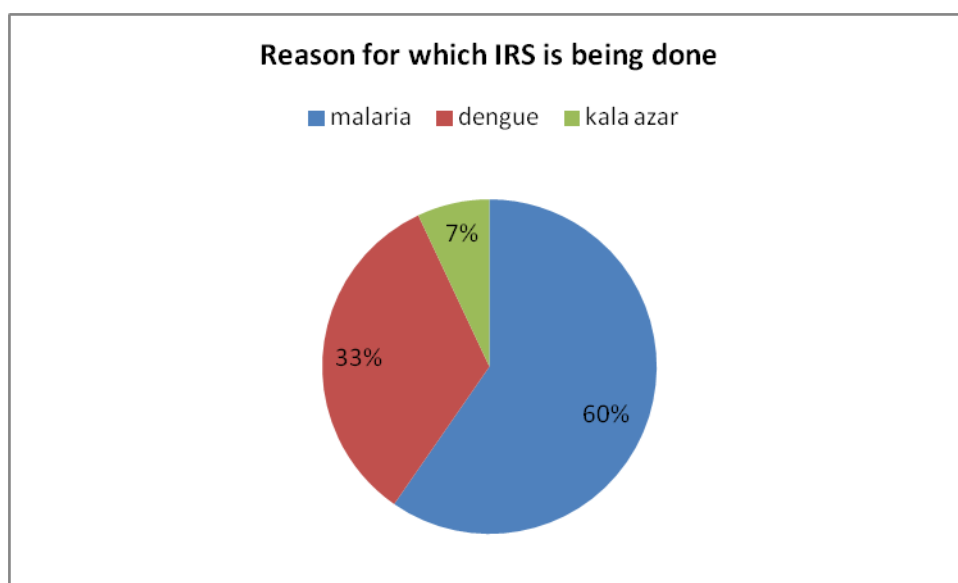
**Households who know the importance of IRS (n=200)**

|              | Frequency | Percent |
|--------------|-----------|---------|
| Valid    yes | 171       | 85.5    |
| no           | 29        | 14.5    |

A majority of the households interviewed (around 86%), reported to be aware about the importance of IRS. Thus they were asked to mention the reason they know for which IRS being done, which was asked in the following question. The households where spray squads had not gone were also included for this particular question.

### 8.2.7 Reason for which IRS is being done:

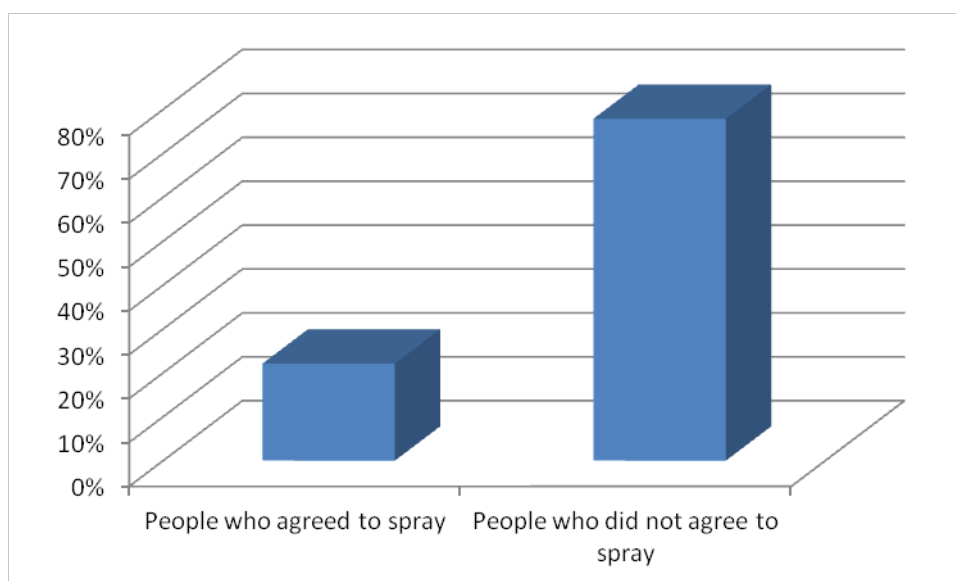
| Reason of IRS (n=171) |           | Frequency | Percent |
|-----------------------|-----------|-----------|---------|
| Valid                 | malaria   | 102       | 59.6    |
|                       | dengue    | 57        | 33.3    |
|                       | kala azar | 12        | 7.0     |



About half (51 percent) of the respondents reported that malaria was the reason for which IRS was being done while more than one-fourth of respondents mentioned dengue being the reason for IRS in their village. Only 6 percent of the respondents reported the actual reason i.e Kala Azar for which IRS is being done



### **8.2.8 Agree to Spray (n= 154)**



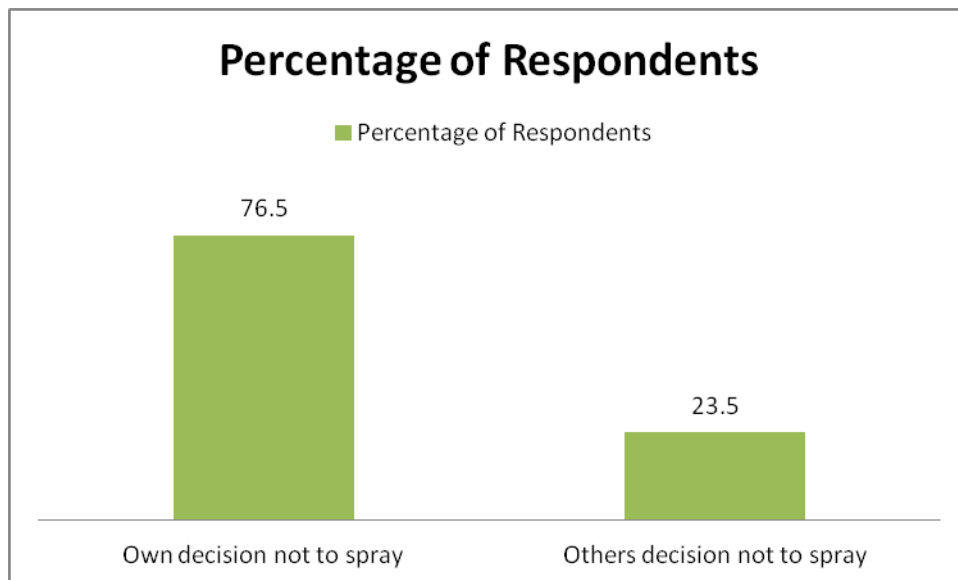
More than three-fourths of the respondents interviewed (78 percent) to whose houses the spray team had come for IRS, reported not to agree for IRS. Only less than one-fourth of the respondents agreed to spray

### **8.2.9 Reason for refusal (n=120)**

Almost a third (29 percent) of the respondents said that the reason for their refusing was that no prior information was given to them about the spraying taking place in their area. And about a quarter refused because of the bad smell of DDT. Among the other reasons were, and increase in bed bugs, mosquitoes not reducing even after spraying, discolouration of walls and no trust on government run programs. This shows that there is a need of better IEC among the community to make them aware about the spraying and its importance.

### **8.2.10 Decision to refuse (n=119)**

| Response                     | Percentage of Respondents |
|------------------------------|---------------------------|
| Own decision not to spray    | 76.5                      |
| Others decision not to spray | 23.5                      |

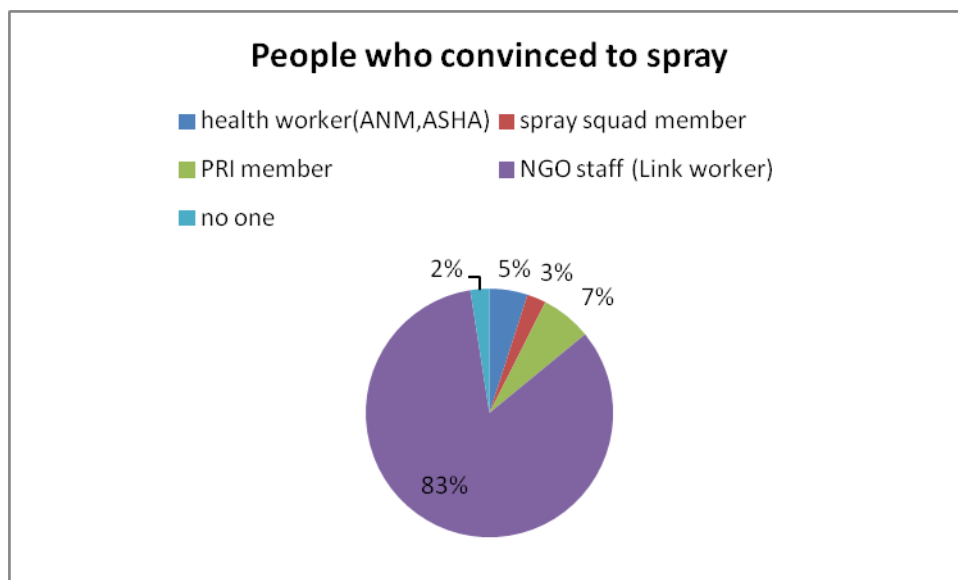


Of the 78 percent people who had refused for IRS, more than two-thirds of them (76.5 percent) informed that it was their own decision not to spray their household. Around 23.5 percent respondents that it was not their own decision not to spray their household

#### **8.2.11 Decision to refuse** (response from others) (n=31)

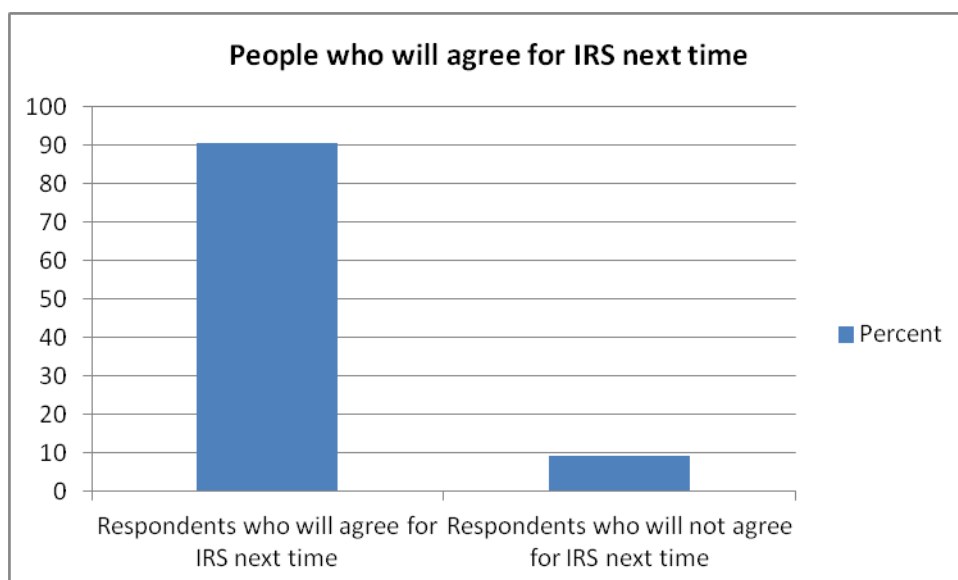
Among the persons who refused, it was found that more than three quarters (77 percent) of the refusals happened due to the influence of the mother or the wife of the household head. Very few refusals were influenced by the male members. This result shows that the perception of the female members of the house in the community needs to be cleared. The help of field workers with due training may be taken.

### 8.2.12 People who convinced to spray (convert refusal) (n=121)



Respondents who refused for IRS were convinced to spray. A majority of the respondents (83%) reported to be convinced by KLWs. Only 7 % of respondents were convinced for IRS by PRI members of their village while the involvement of ASHAs in convincing people for IRS was very low (2 %). Spray squads convinced only 3 percent of the respondents, while 5 % respondents were not convinced by anyone

### 8.2.13 Accepting IRS next time (n=193)

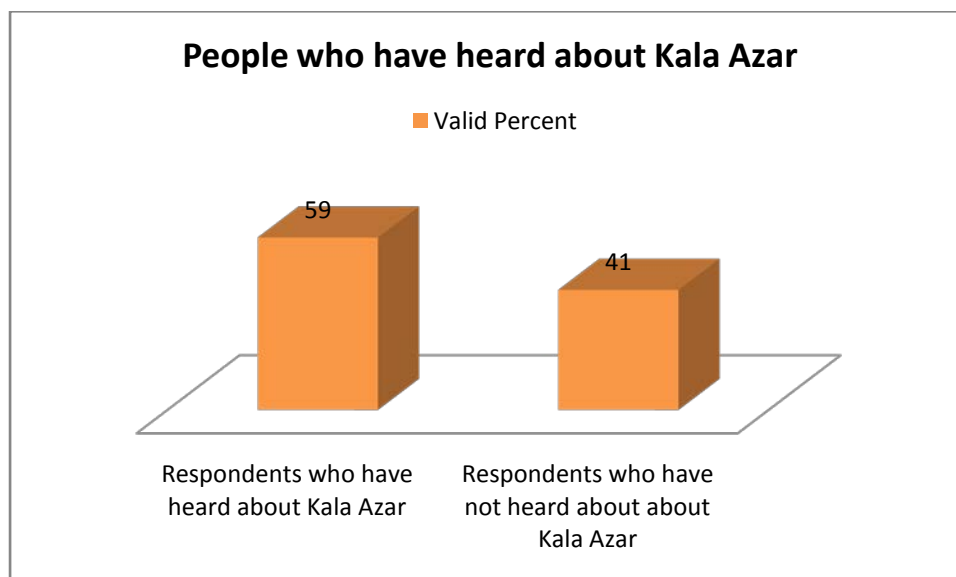


Almost 91 percent of the respondents interviewed reported that they would agree for IRS , if it happens the next time while about 10% respondents that they would not agree for IRS next time.

#### **8.2.14 Acceptability of spraying next time (n=17)**

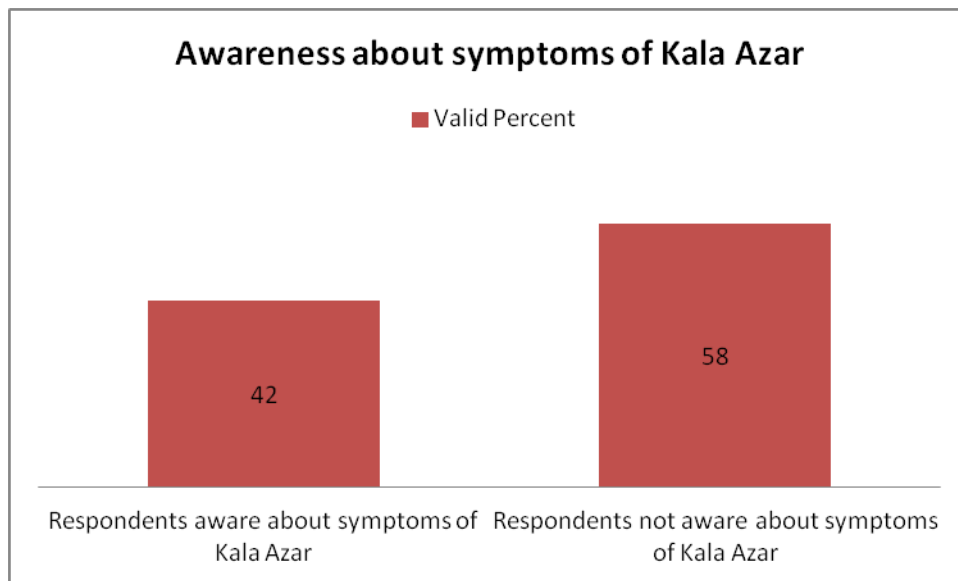
Out of all the people who said they would not want spraying to occur in their houses the next time, it was found that that two fifths (41 percent) thought that the spraying had no effect and hence were not ready to let spraying happen again in their villages. Almost a quarter (24 percent) said they had no trust in the government implemented scheme and about 30 percent said that the smell of DDT was the major factor for their refusal. The results show that there is a need to generate awareness among the community about the effects it has so that they become more acceptable to it.

#### **8.2.15 People who have heard about Kala Azar (n=200)**



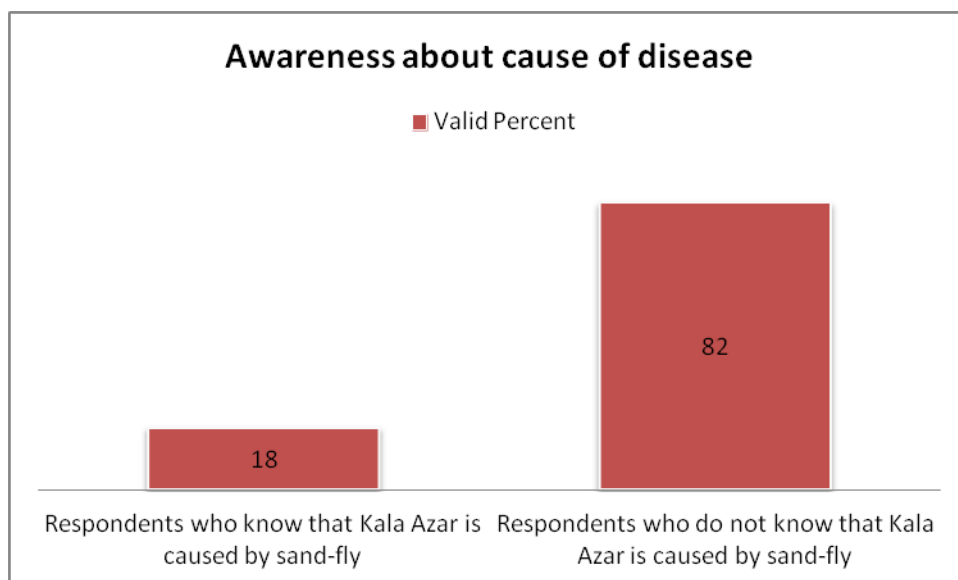
More than half of the respondents interviewed (59 percent) reported to have heard about Kala Azar while around 41 percent had never had heard about the disease

#### **8.2.16 Awareness about symptoms of Kala Azar (n=118)**



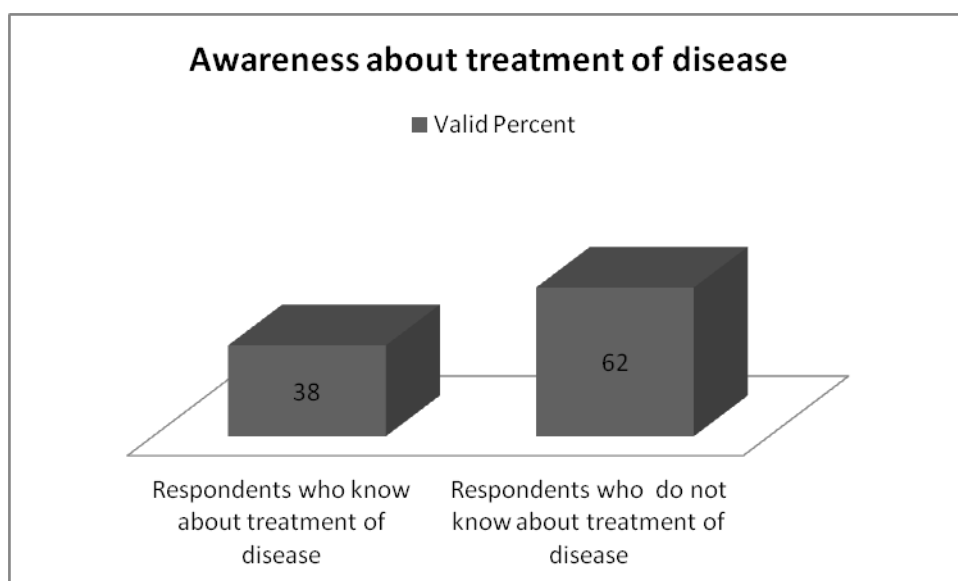
More than half of the respondents who had heard of the disease were however not aware about the symptoms of the disease. Only 42 percent of the respondents had some knowledge about the symptoms of the disease.

#### **8.2.17 Awareness about cause/vector of disease (n=118)**



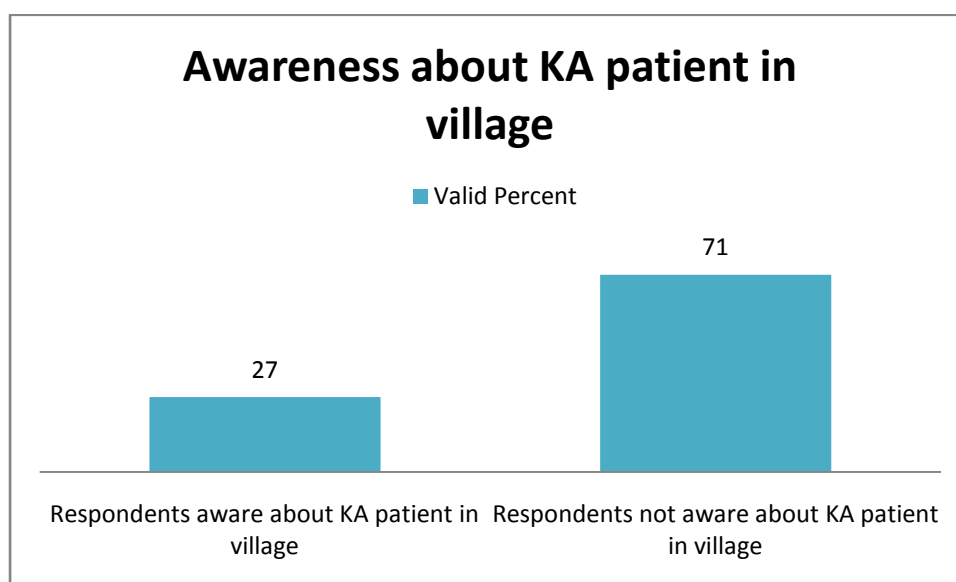
Majority of the respondents who had heard about Kala Azar, were however not aware that the disease is caused by sand fly. Only 18 percent of respondents were aware about the cause of the disease.

#### 8.2.18 Awareness about treatment of disease (n=118)



Around two-thirds of the respondents who had heard about Kala Azar were however not aware about the treatment for the disease. About 38 percent of people knew about the treatment for the disease.

#### 8.2.19 Awareness about Kala Azar patient in the same village (n=118)



A little less than three-fourth of the respondents were not aware about any Kala Azar patient in their village, while more than one quarter (27 percent) of the respondents seemed to know at least one Kala Azar patient in their village

## **9. DISCUSSION:**

The objective of the study was to find out the reason of high refusal rates for IRS in the district and to assess the level of involvement of Kala Azar Link Workers in converting the refusals.

Having a proper coverage of the households is one of the key indicators to measure the impact of IRS. High rate of refusals lead to low coverage of households. Thus the achieving the goal of elimination of the disease could be jeopardized.

The study covered 200 households in district Patna of Bihar. These households were purposefully chosen since these households had refused for IRS. Structured questionnaire were prepared addressing the reason for refusal, the attitude of households members towards IRS and the involvement of K LWs in converting the refusals.

The study showed that almost 40 percent of the respondents were illiterate and about a quarter of the respondents lived in semi-pucca houses. The low literacy levels of the respondents can be one of the reasons for not accepting IRS.

The study also showed that only about two-thirds of the respondents interviewed (65.5%) were reported to have heard of IRS. This indicates a low level of awareness about one of the most important techniques of eliminating the vector i.e IRS. Since the households selected for the study had been purposefully taken from the registers of SFWs, where they reported these households as refusal, however when interviews were conducted at these households about a quarter of them reported that spray squads had not come to their households to perform IRS. This shows that false reporting is being done to increase the coverage. Out of all the respondents to whose houses, spray squads had come, almost two thirds (64 percent) of the houses were visited up to 12 noon. The remainder third of the houses were visited after mid noon. This might have led to an increase in refusal cases as the villagers tend to rest post noon. The households who had refused IRS during morning hours might have done so because villagers generally got out to work during morning hours.

From the 200 households, only 30 households (15 percent) reported to have been aware of IRS in their village beforehand. A majority (85 percent) of them were not informed about IRS. This shows the low level of awareness among community members about dates of IRS and this can also be a reason for refusal, since if the households are not informed on a prior basis, they might not be available on the date of spray and be prepared. Out of all the respondents who had been informed about the spraying beforehand, a large majority (87 percent) were informed by the Kala

Azar Link Workers. The remaining were informed by the spray squad members on the morning of spraying. This shows that the health workers nor the PRI members were much involved in informing the villagers about spraying to be taking place in their village. This also shows the involvement of KLWs in informing villagers about date of spray to ensure low refusal rates. The 3 percent respondents who had been informed by spray squads were informed on the date of the spray itself, a little earlier than the spray squads arrived at their houses.