

**मन लगाऊ, मुटु बचाऊ**  
**Have a Heart, Save a Heart.**

*Nepalese youths in fight against Rheumatic Heart Disease*

**Proceeding of**  
**"Have a Heart, Save a Heart" Project**

Edited by  
**Dr. Prakash Raj Regmi**

**Published by: South Asian Youth Summit (SAYS) 2011**

**Supported by: US Embassy, Kathmandu, Nepal**

**Technical Support: Nepal Heart Foundation**

**Edition: First 2012**

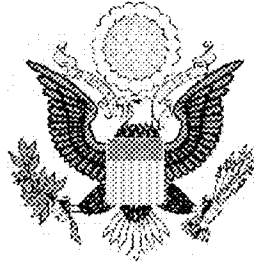
**Copies: 100**

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*Embassy of the United States of America*

Kathmandu, Nepal  
June 18, 2012

Dear Friends and Colleagues:

The U.S. Embassy in Kathmandu is pleased to support the participants of the South Asian Youth Summit (SAYS) for 2011 and their Community Action Plan, an awareness and prevention program designed to save countless Nepalese from Rheumatic heart disease. Following their travel to the United States under a U.S. Department of state exchange program, these promising young leaders developed the "Have a Heart, Save a Heart" campaign under the exceptional mentorship of Dr. Prakash Raj Regmi. As you will read in the report that follows, the group's success have been noteworthy and has likely saved many Nepalese lives from this dangerous disease.

The U.S. Department of State and USAID have worked in partnership with the Government of Nepal to advance the quality of public health in this country for more than five decades, and our work continues today. Our efforts in Nepal have been strengthened in recent years by President Obama's Global Health Initiative, a \$63 billion investment from the American people to improve the quality of life in Nepal and more than 40 countries around the world. Here, we are partnering with the local health sector in working to lower child mortality, improve maternal health, and constrain the spread of infectious diseases such as HIV, tuberculosis, and malaria, among others.

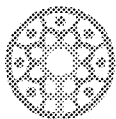
In order to be sustainable and effective, we recognize the importance of involving young people in our efforts to help Nepal become a healthier place to live, grow, and prosper. That's why the efforts of the SAYS 2011 group are so essential to this cause, and we commend their dedication and enthusiasm.

Sincerely,

A handwritten signature in black ink, appearing to read "Cain Harrelson".

Cain Harrelson  
Cultural Affairs Officer  
Public Affairs Section





## MAGEE WOMANCARE INTERNATIONAL

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Dear Friends and Colleagues,

It has been Magee Womancare International's great pleasure to work with such a talented and motivated group of students from Nepal. Each and every member of the "Have a Heart, Save a Heart" community action plan has proven to be not only true leaders in their community, but also to have enormous hearts of their own.

Mentoring this group on the South Asia Youth Leadership Summit (SAYS) during their 3-week stay in the United States was a rewarding experience for all. The Nepali SAYS team worked extremely hard on developing their community action plan by integrating lessons presented on leadership and civic engagement during their U.S. exchange. The results of their hard work have proven to be noteworthy. This group of promising young leaders has managed to educate and create awareness in the community about Rheumatic Heart Disease, partner with specialist physicians to conduct Rheumatic heart disease screenings, and administer treatment to those children found to be carrying the disease. This community action plan has truly saved lives.

I can only hope that the 2011 SAYS team is as proud of their achievements as we are Magee Womancare International. Our hope is that these young leaders will continue to work in their communities for the benefit of the common good. The success of this project only proves how valuable young people are to the development and prosperity of their communities.

With great respect,

Nicole Travis, MS.Ed  
Administrative Director  
Magee Womancare International



# **Rheumatic Heart Disease Prevention**

*Coordination of Community Action Plan of South Asia Youth Summit 2011*

**Krisada Kanjanwat,**  
*Founder and Director of Nepal Break Dance Foundation*

The US Embassy in Kathmandu, Nepal, selected Nepal Break Dance Foundation (NBF) as the local partner organization for implementing the South Asia Youth Summit 2011 (SAYS) Nepal. NBF was responsible for the selection of potential candidates and orientation of the final selected candidates for the programme. The Programme was primarily targeted to give students from Sri Lanka, Maldives and Nepal youth leadership training with especial focus on democracy. The major part of the project was the implementation of a Community Action Plan (CAP) upon returning to Kathmandu. NBF's role regarding the CAP - Have a Heart! Save a Heart! was mainly financial management and overall coordination among the SAYS 2011 team, the US Embassy Kathmandu and Magee Womancare International in the US.

The role of NBF went well beyond the given parameters. Facilitation to ensure participatory leadership, team work and ensuring the completion of a committed task emerged as issues that needed attention rather than just mechanically going through a process of doing a project. The most important task of the adult facilitator, Nepal Heart Foundation and NBF proved to be that of motivation and creating conducive environment to enable the team to complete their CAP.

Nepal Break Dance Foundation (NBF) was established in 2009 with the aim of preventing youth from become victims of drug abuse and violence through engaging them in activities that are of interest to them, primarily in the area of entertainment and sports. NBF mission is to transform untapped youth energy by providing attractive alternative to anti social activities such as drug abuse and violence. NBF's goal is to create a niche in the entertainment and sports industry for youth by building their capacity and skills, making them employable and actually getting them employed. The main objectives are to prevent youth from drug abuse and violence through skills training and employment generation; involve youth in social issues through means that are interesting to them and establish NBF as a production house covering both entertainment program and technical production units. NBF provides skills training in: 5 Hip Hop elements and technical film production skills. NBF also supports with developing marketing skills and job placements. All activities are linked with social issues. The NBF strategy for youth in particular is Learn-Earn- through Fun. NBF also adheres to the strict policy of not taking assignments for promoting alcohol and tobacco products.



**Nepal Break Dance Foundation**

**SAY NO TO DRUGS AND VIOLENCE**



# **Rheumatic Heart Disease – Involvement of Nepalese Youths in Prevention**

**- Dr. Prakash Raj Regmi, MD**  
*President, Nepal Heart Foundation*

Cardiovascular Disease is the number one killer in the world responsible for 17.3 million deaths per year. Once thought to be the problem of developed countries, today it is a global health problem adding extra burden in developing countries like Nepal. Congenital Heart disease, Rheumatic Heart disease, Hypertension and Coronary artery disease are common cardiac problems in Nepal.



According to current scenario of heart disease in Nepal on the basis of available studies, the prevalence of Rheumatic Heart disease and Congenital heart Disease are 1.2 per 1000 and 1.3 per 1000 in school children. The prevalence of hypertension is 19.7 in suburban adult population and Coronary heart disease is estimated to be 5 percent in adult population in Kathmandu according to hospital data. There is geographic variation in the prevalence of diseases. In general Rheumatic heart disease is more prevalent in rural areas, Hypertension and Coronary artery disease are more prevalent in urban areas.

Rheumatic Fever (RF) causes 25 – 40% of all cardio vascular disease in developing countries. Disability and death from Rheumatic Heart Disease (RHD) are mainly caused by recurrent attacks of RF. Because of the impact of this disease on public health and the proven efficacy of preventive measures the World health Organization has helped to establish programmes for prevention of RF in developing countries. Ministry of Health & Population of Nepal in technical support from Nepal Heart Foundation is running a National programme on prevention and control of RF/RHD in Nepal since 2007.

The main cause of Rheumatic heart disease is throat infection (Tonsillitis and pharyngitis). More than 90% of Nepalese are unaware of this fact. Throat infection is left untreated in most of the Nepalese children. This leads to Acute Rheumatic fever-a condition with migrating joints pain, Swelling of joints and fever. This is a very serious condition & if left untreated may lead to Rheumatic Heart Disease (a condition when one or more heart valves are permanently damaged). Much efforts are needed to raise awareness on RHD. Dissimination of a simple message can do a lot in RHD prevention. This simple message is "Tonsillitis, pharyngitis and joints pain in children if not treated may lead to RHD". The main objective of "Have a Heart, Save of Heart" project was to disseminate this message among school children, teachers, mothers and public. I feel, the project was successful in fulfilling its objectives. Well done SAYS Team 2011 and keep it up ! We are very glad to involve Nepalese Youths from SAYS 2011 team in fight against Rheumatic Heart Disease. We found this method involving the Youths very effective in creating Public awareness on RHD. We hope such activities will continue in future. Nepal Heart Foundation will always support Nepalese Youths and Play a key role in fight against Rheumatic Heart Disease in Nepal.

Kathmandu, Nepal  
April 2012



**Nepal Heart Foundation**

# Implementation of “Have a Heart, Save A Heart”

**Anupama Mukhia**

Teacher, St. Xavier’s School, Lalitpur, Nepal



**Keywords.** Community Action Plan • South Asian Youth Summit • Nepal Breakdance Foundation • Godavari Alumni Association (GAA) • Rheumatic Heart Disease

## ABSTRACT

*The SAYS Team, 2011 implemented its CAP on a health issue through its project entitled "Have A Heart, Save A Heart" to create general awareness on Rheumatic Fever (RF) and Rheumatic Heart Disease (RHD) among students and teachers of some selected public schools in Lalitpur district followed by survey on two private schools of the same district on the same topic to compare and contrast the level of knowledge on RF and RHD. The project included planning, budgeting, orientation to the SAYS Team by the cardiologist, implementation of awareness programme, mass screening, eventual diagnosis of the suspected students and evaluation. The Nepal Heart Foundation (NHF) was the core support of the project.*

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## INTRODUCTION

With the approval of the project entitled "Have A Heart, Save A Heart" undertaken by the SAYS Team 2011, the budget of \$2400 was sanctioned by the US State Department in coordination with Magee Womancare International and Amizade, Ltd in the US, US Embassy and Nepal Breakdance Foundation in Nepal. The SAYS Team, 2011 had a sequence of meetings on preliminary planning on the implementation of the project at GAA, Thamel. The SAYS Team approached the Nepal Heart Foundation and received abundant support for the selection of public schools, preparation of questionnaire, pamphlets, posters and calendars, orientation and training to SAYS Group and practical implementation of the project that included general awareness, mass screening, eventual diagnosis of the suspected students and evaluation.

## OBJECTIVE

1. To generate awareness among students and teachers of some selected public schools in Lalitpur district and common people through questionnaire, pamphlets, posters, calendars, Teachers’ Training and Street Drama.
2. To conduct mass screening of the students of the selected schools by a team of

cardiologists, health assistant and technicians.

3. To perform eventual diagnosis of suspected students with modern medical technology.
4. To compare and contrast the level of knowledge on RF and RHD between public and private schools.

## **METHODOLOGY**

1. Selection of public schools and proposal to the selected schools to conduct the project through NHF.
2. Orientation to SAYS Team on RF and RHD by the cardiologist.
3. Preparation and collection of materials to generate awareness on RF and RHD such as questionnaire, pamphlets, posters and calendars.
4. Visit to selected schools and conduct awareness on RF and RHD through talk programme, questionnaire, pamphlets, calendars and posters . Conduct mass screening of the students simultaneously and identify the suspected students.
5. Eventual diagnosis of the suspected students and their treatment ( ? ).
6. Conduct Heart Diseases Prevention Volunteer ( HDPV) Training for school teachers by the cardiologist.
7. Preparation of Street Drama to generate awareness among public to generate awareness among public on RF and RHD.
8. Conduct Street Drama in public places.
9. Media coverage to highlight the project.
10. Evaluation of survey done through questionnaire and derivation of conclusion.
11. a survey on two private schools in Lalitpur district on RF and RHD and compare and contrast the result with that of public schools.
12. Preparation of a report on the project by assigning each SAYS participant a topic and compilation of the reports.
  - a. Anjali Thapa Magar: Introduction on RF and RHD in Nepal.
  - b. Shashank Sharma: Level of awareness among school children on RF and RHD.
  - c. Rebecca Tamang: Level of awareness among school teachers on RF and RHD.
  - d. Prasen Shakya : Youth involvement on generating awareness on RF and RHD.
  - e. Aarjit Adhikary: Prevalence of RHD and Congenital Heart Diseases among school children of Lalitpur.
  - f. Kunchok Lhundup Lama and Tashi Chhoden Lama: Efficacy of Street Drama in generating awareness among public on RF and RHD.
  - g. Anupama Mukhia: Review of all the reports and their compilation.

## **DISCUSSION**

Rheumatic Fever and Rheumatic Heart Disease is one of the commonest heart diseases among schoolgoing children aged 5 to 15 in underdeveloped and developing countries. According

to WHO among 1 lakh children in developing countries, approximately 100 children suffer from this disease annually and 100 of them die. Every year in Nepal 300 to 500 children among 1 lakh suffer from RF and RHD and 10% of them die. It has been estimated that if we take young and adolescent people suffering from RF and RHD into consideration, there are about 75,000 victims of this disease in Nepal.

Tonsillitis and Pharyngitis occur frequently among children. And this is the root cause of RF which is accompanied with symptoms of pain and swelling of big joints and occurrence of fever. If not treated in this stage, the valves in the heart get damaged and this is called Rheumatic Heart Disease.

The disease can be controlled if it is prevented in the primary stage.

As RF and RHD is a major health problem in Nepal, SAYS Group 2011, takes an initiative to generate awareness among school children and teachers and public with selfless support from NHF.

## **CONCLUSION**

Awareness generation on RF and RHD by youth involvement is very effective. The SAYS participants used different means to achieve the goal of their project, such as talk program, distribution of pamphlets, posters and calendars, survey through a questionnaire and street drama. The SAYS participants assisted a team of cardiologists to conduct mass screening that went successfully. They enriched themselves with the knowledge on RF and RHD through this project.

## **ACKNOWLEDGEMENT**

On behalf of SAYS Group Nepal 2011, I extend my sincere gratitude to the US State Department for organizing SAYS Program and providing grant to SAYS Team Nepal 2011 which has helped the group to bring a small difference in the lives of Nepalese children. My gratitude to Nicole Travis, Administrative Director, Matt Kiss, Program Coordinator, Magee Womancare International, Sara Noel, Program Manager, Amizade, Ltd for coordinating the SAYS Program and guiding us for our CAP, Amanda Jacobson, Cultural Affairs Officer then and Cain Harrelson, Cultural Officer now, US Embassy for coordination and supervision of our project, Ms Ishu Lama, Cultural Affairs Staff, US Embassy for her visitation during one of our field work, Mr. Manoj Manandhar, the CEO of Godavari Alumni Association for his constant support, guidance and motivation, Ms Kesang Renchen, the Director of Nepal Breakdance Foundation for her selfless support and motivation, she was the source of inspiration to the SAYS Team through her regular supervision and coordination, Ms Sangita for her assistance on strategic planning of our project, the Rotary Club Patan for its support we received specially during Teachers' Training, the Principals of schools and colleges of SAYS participants allowing the latter to participate in this project, the Principals, teachers and students of public and private schools where the AYS Group conducted the project, the parents of SAYS participants for their unconditional support and encouragement to their children to be actively involved in this project.

I pay my utmost gratitude to Dr. Prakash Raj Regmi, the President of Nepal Heart Foundation for his unconditional support and motivation throughout the project in spite of his busy schedule. I appreciate his caliber which inspired the SAYS Team to move ahead. I thank him for providing us orientation, information for questionnaire, pamphlets, posters, calendars, venue for SAYS Team meeting and Teachers' Training, for selecting and getting appointment of the public schools

for the field work, for conducting mass screening and diagnosing the suspected students, for guiding SAYS Group in Report Writing.

My sincere gratitude to a team of cardiologists, medical assistants and technicians for their contribution in mass screening of thousands of children. My special thanks to Ms. Bimala Maharjan, Program Officer and Mr. Suman Shrestha, Office Assistant, Nepal Heart Foundation, Babar Mahal for their constant support in providing us necessary materials and assisting us in the field work and Teachers' Training.

My sincere gratitude goes to the Principal, teachers, Tashi and Kunchok and all the cast of the street drama, from Sri Mangal Dvip for directing the street drama, which truly generated awareness among public on RF and RHD.

Last but not the least I owe my sincere gratitude to all the SAYS participants for their contribution to this project in spite of their busy schedule, study pressure and examination.

## **REFERENCE**

Progress Report on National Rheumatic Fever/Rheumatic Heart Disease Prevention and Control Program, 2067/2068 B.S. Dr. Prakash Raj Regmi.

# Rheumatic Fever and Rheumatic Heart Disease in Nepal

**Anjali Thapa Magar**

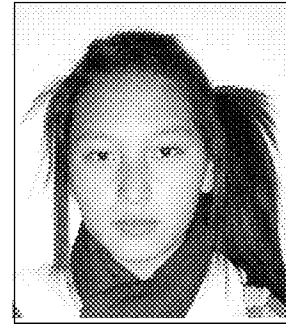
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Incidence of heart disease is disproportionately increasing all over the world. In Nepal about 15% of the population is suffering from heart diseases and the number is increasing year after year. Basically, Nepali people suffer from three types of heart diseases: congenital, rheumatic and coronary heart disease. The lack of awareness among the people has added to the number of heart patients in Nepal. Ignorance and negligence are the major reasons the people in Nepal suffer from heart diseases.



Rheumatic Fever is an inflammatory syndrome mainly affecting the throat which characteristically tends to recur. The name rheumatic fever emphasizes involvement of the joints, but it is the involvement of the heart that makes it important. The attack of RF may affect the heart, causing damages to the heart valves and leading to high morbidity and mortality. RF and RHD are common in Nepal as well as other developing countries. They are more common in children and young adults belonging to low socioeconomic class. Many of them do not have access to proper medical care because of poverty and ignorance. The shortage of medical facilities also prevents them from receiving adequate treatment.

Medical research in Nepal has shown that RHD and CHD remain significant health problems in school-going children of Nepal. According to a research (1990-2003) conducted by the Nepal Heart Foundation (NHF), an increase in the prevalence of these diseases has been reported. Another research (November-December 2003) centred in Kathmandu Valley (which incorporates Lalitpur) conducted by the Department of Cardiology at Shahid Gangalal National Heart Centre reveals that the prevalence of RHD and CHD among schoolchildren is 1.2/1000 and 1.3/1000 respectively.

RF and RHD are preventable diseases and have already been eradicated in the developed countries. In Nepal the cost of the Secondary Prevention for an affected child is approximately NRs 400 ( USD 6 ) per year, but the surgical treatment of the damaged heart valve requires about NRs. 200000( USD 3000 ) . Therefore, Prevention of RF and RHD not only decreases morbidity and mortality in the children but is also economically beneficial.

It is in this context the National RF/RHD prevention & control program was launched by the Ministry of Health in cooperation with the Nepal Heart Foundation (NHF). NHF is the main authorized organization for implementation of this program.

The need for an organization to work against the heart disease was of high priority in Nepal, so some doctors, concerned authorities and stakeholders established the Nepal Heart Foundation (NHF) in 1988. It is a member of the World Heart Federation. It has more than 30 district offices with more than 10,000 life members. NHF has been conducting programs ranging from awareness campaign to treating patients with heart diseases through community, district, zonal and national level hospitals.

# Prevalence of Rheumatic Heart Disease in the Schoolchildren of Lalitpur District, Nepal

Aarjit Adhikary

A levels, Rato Bangala School, Lalitpur, Nepal;



**Key words.** Prevalence • schoolchildren • Rheumatic Heart Disease (RHD) • Congenital Heart Disease (CHD) • Ministry of Health (MoH) • Lalitpur

## ABSTRACT

*Rheumatic heart disease and congenital heart disease are common causes of cardiovascular diseases among the children and young adults in Nepal. In the project 'Have a Heart! Save a Heart!' implemented by the 2011 SAYS (South Asian Youth Summit) team from Nepal in cooperation with Nepal Heart Foundation (NHF) in the months of October-December, 2011. A mass-screening program was conducted among 3002 schoolchildren of Lalitpur to devise the prevalence rate of RHD. The results show that the devised prevalence rate of RHD among schoolchildren in Lalitpur is 2.3/1000. The issue of CHD came as an outcome of the screening for RHD when students with CHD were also detected. Hence, as an additional outcome of the study, the devised prevalence rate of CHD among schoolchildren in Lalitpur is 3.3/1000.*

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## INTRODUCTION

RHD and CHD remain significant health problems in school-going children of Lalitpur Sub-Metropolitan City. According to a research (1990-2003) conducted by NHF, an increase in the prevalence of these diseases has been reported. Another research (November-December 2003) centered in Kathmandu Valley (which incorporates Lalitpur) conducted by the Department of Cardiology at Shahid Gangalal National Heart Centre reveals that the prevalence of RHD and CHD among schoolchildren is 1.2/1000 and 1.3/1000 respectively. With the increasing cases of RHD every year, this program was primarily launched in order to alleviate the prevalence of RHD by generating awareness adjunct to determining the prevalence rate of RHD in the schoolchildren of Lalitpur. The *Have a Heart! Save a Heart!* project is one of the collaborative efforts that NHF has with other partners such as the MoH (Government of Nepal) and the Rotary International.

## OBJECTIVES

The following were the main objectives of the research study:

- To visit seven public schools in Lalitpur for screening approximately 3,000 schoolchildren for RHD with the help of a team of cardiologists and health professionals from NHF.
- To refer the suspected cases of RHD for secondary screening via Doppler Echocardiography.
- To direct confirmed cases to the Department of Cardiology, Shahid Gangalal National Heart Centre, Kathmandu for prophylaxis.
- To determine the prevalence of RHD in the schoolchildren of Lalitpur.

## METHODOLOGY

The research was conducted in seven randomly selected public schools in Lalitpur Sub-Metropolitan City during a time period of five weeks (November-December 2011). The study team had taken permission from all the schools prior to the school visits. A total of 3,002 students including both boys and girls from classes 1 to 10 were screened by a team of cardiologists from NHF. The suspected cases of screening were convened to Lalitpur Heart Clinic for further diagnosis through Doppler Echocardiography. Apart from screening, the research also comprised of a survey followed up by awareness generation on RHD by SAYS participants. The time taken for the visit in each school ranged from one to five hours.

## RESULTS AND ANALYSIS

The Tables 1.1 and 1.2 (below) show the results of the study in their respective schools. Table 1.1 shows a general outcome of the study; whereas, table 1.2 provides the requisite details.

Total Schools Visited			7
Total Students Screened			3002
Total Suspected Cases			83
Total referred for Echocardiography			80
Total Cases confirmed /3002 schoolchildren	17	RHD	7
		CHD	10

Table 1.1

S.N.	Name of School	Total # students Screened	Total # of Suspected cases	# cases referred for Echocardiography	RHD/CHD confirmed
1	Trigadma Vidhyashram	767	28	22	4
2	Shree Padma Prakash	313	27	31	1
3	Jalpa Secondary School	161	6	6	3
4	Samata Sikshya Niketan	632	8	0	3
5	Mahendra Bhikuti School	523	8	8	2
6	Shree Shanti Vidhyashram	411	12	11	4
7	Lalit Bikash Lower Secondary School	180	4	4	0

Table 1.2



## DISCUSSION

Despite the sophisticated measures undertaken to prepare the study, some aspects of qualitative data were overlooked. The cases of RHD and CHD were not segregated on the basis of Sex (Male or Female) nor were they partitioned on the basis of Age (5-16). These overlooked aspects, if applied, could have provided significant qualitative outcomes for further research and understanding on the prevalence of RHD and CHD. Nevertheless, it is agreed that the outcomes generated by this unique study initiated by Nepali youth with the aid of United States' State Department, US Embassy (Kathmandu), Nepal Break Dance Foundation (NBF) and most importantly, NHF, will prove to be valuable in forthcoming national and international research in analogous fields.

## CONCLUSION

The aim of the study was to determine the prevalence rate of RHD in the schoolchildren of Lalitpur. The study revealed that the prevalence rate of **RHD** among schoolchildren in Lalitpur is **2.3/1000**. An additional outcome was the prevalence rate of **CHD** i.e., **3.3/1000**.

## ACKNOWLEDGEMENTS

This study was a part of *Have a Heart! Save a Heart!* Project conducted by the SAYS 2011 team in cooperation with NHF. The project was funded by the Bureau of Educational and Cultural Affairs, US Department of State. NBF provided overall coordination and fund management and the preliminary planning sessions were hosted by the Godavari Alumni Association.

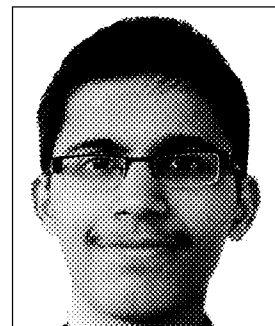
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# Level of Awareness about Rheumatic Heart Disease in Schoolchildren of Lalitpur, Nepal

**Shashank Sharma**

A levels, Rato Bangala School, Lalitpur, Nepal



**Key Words.** Awareness • Schoolchildren • Rheumatic Heart Disease (RHD)  
• Lalitpur Heart Diseases • Health Awareness

## ABSTRACT

*The paper examines the level of awareness about Rheumatic Heart Disease in schoolchildren of grades 8, 9 and 10 from five public schools in Lalitpur, Nepal. Results were based on questionnaires about RHD and general heart information distributed to the students. The study concluded that the level of awareness is poor, with 301 out of 525 students not being able to answer even half of the questions correctly.*

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## INTRODUCTION

Rheumatic heart disease is a major ailment in Nepali children below the age of 15, and its prevalence rate has been found to be 1.2 per thousand in a previous survey involving 4376 pupils. In patients having rheumatic heart disease, the heart valves are damaged due to rheumatic fever. In its early stage, the disease can be easily cured and the high prevalence rate is therefore mostly attributed to ignorance about the disease in the general population.

The study aimed to measure the level of awareness about Rheumatic Heart Disease(RHD) in the schoolchildren of five randomly selected schools.

## OBJECTIVES

The major objectives of the study were as below:

1. To find out the level of awareness about RHD in students of Lalitpur, Nepal.
2. To generate awareness about RHD in selected government schools through informative talks with doctors and volunteers
3. To put up materials and hoarding boards relating to RHD in publicly viewable areas in schools so that future students that this study could not reach can also be made more aware.

## METHODS

Five schools were randomly selected for the survey. The only common trait they shared was that they are all publicly funded. The group went to different classes in these schools and distributed questionnaires in Nepali with 12 questions. Six of them were basic and six were specific to rheumatic heart disease. The students were informed that their answers were anonymous, and were monitored to minimize plagiarizing answers. A total of 525 students from classes 8, 9 and 10 were surveyed.

After the survey, students underwent a brief awareness session with the surveying group and were handed with informational materials. They were also instructed to inform their siblings and parents about what they learned. All the visited schools were also provided with hoarding boards, calendars and other materials containing information about Rheumatic Heart Disease and contact information to the Nepal Heart Foundation.

## RESULTS

The grading system for the questionnaires is as the following:

No. of correct answers	Grading
Below 6	Poor
6 to 9 inclusive	Satisfactory
Greater than 9	Good

The questionnaires were checked and the results were counted. The results are tabled as below:

Grading	No. of students	Percentage
Poor	301	57.33
Satisfactory	224	42.67
Good	0	0

## DISCUSSION

The survey results show that the awareness in teachers is largely poor. The majority of the teachers (67.47%) could not even answer half of the questionnaire correctly and so were considered to have poor knowledge. Just 31.32 percent of the teachers confirmed satisfactory knowledge. Of the total teachers only one teacher had a good knowledge about heart anatomy, RF and RHD.

Even in simple questions like the two mentioned earlier, awareness was very low. The knowledge being low among the teachers, we cannot expect better from the students. Due to the majority of the teachers demonstrating a poor knowledge we also conducted a "Teacher's Training Workshop" conducted by Dr. Prakash Raj Regmi where the volunteers also performed a drama.

## **CONCLUSION**

The poor level of awareness shows a dire need for various awareness programs to eradicate the disease in Nepal. If the people have the knowledge then the early treatment can help avoid the disease. The low level of awareness among the teachers made us to expect less from the students or their parents. The study concludes that the results of the awareness about RF, RHD and basic human heart anatomy is much lower than expected, and that raising awareness among teachers must be a priority for future projects so that they could aware their students and the parents.

## **ACKNOWLEDGEMENT**

The awareness generation was a part of Have a Heart! Save a Heart! Project conducted by Nepali SAYS (South Asian Youth Summit) 2011 group in cooperation with Nepal Heart Foundation. Nepal Break dance Foundation provided overall coordination and budget management. Mentor Anupama Mukhia coordinated the team activities. United States Department of State provided the budget.

## **REFERENCES**

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# Level of Awareness on Rheumatic Heart Disease Among School Teachers of Latipur

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## Abstract

*Nepali Says group of 2011, did their CAP(Community Action Project) on awareness generation of Rheumatic Fever and Rheumatic Heart disease and health check up of children in randomly selected five public schools in Lalitpur district of Nepal. The teachers were asked to answer questionnaires about RF, RHD and general heart information. The study concludes that the level of awareness among the teachers was poor, with 56 out of 83 teachers not even being able to answer half of the questions correctly.*

## Introduction

Rheumatic Fever is an inflammatory syndrome related to the beta-hemolytic Group A streptococcal infection, mainly of the throat. The attack of RF may affect the heart causing damages to the heart valves and leading to high morbidity and mortality. In its early stages of RF, the disease can be easily cured but the ignorance leads to RHD which is even fatal if not treated. RF and RHD are common in Nepal and other developing countries. They are common in children and young adults belonging to low socio-economic class. Many of them do not have access to proper medical care because of poverty and ignorance.

## Objectives:

1. To find out the level of awareness about RF and RHD among teachers of Lalitpur, Nepal.
2. To generate awareness about RHD in the selected public schools through distribution of pamphlets and informative talks with doctors and volunteers.
3. To put up Hoarding boards and posters relating to RHD in noticeable areas of the school for everyone to see and get knowledge from.

## Methodology:

With the help of Dr. Prakash Raj Regmi of NHF, five public schools were randomly selected for the survey. The group went to classes 8, 9 and 10 and the staff room and distributed the questionnaires containing 12 questions to the students and the teachers. As to minimize plagiarism the students and teachers were told that the questionnaire didn't have their name and it was not any sort of exam. Altogether 83 teachers were surveyed.

**Result:**

The grading system for evaluation of level of awareness was as the following:

No. of correct answers	Grading
Below 6	Poor
6 to 9 inclusive	Satisfactory
Greater than 9	Good

The results of the survey are as the following:

Grading	No. of teachers	Percentage
Poor	56	67.47
Satisfactory	26	31.32
Good	1	1.21

Of the total 83 teachers, 71(85.54%) of them did not even know the correct location of the heart. 24 teachers(28.92%) had never heard about Rheumatic Heart Disease.

**Discussion:**

The survey results show that the awareness in teachers is largely poor. The majority of the teachers (67.47%) could not even answer half of the questionnaire correctly and so were considered to have poor knowledge. Just 31.32 percent of the teachers confirmed satisfactory knowledge. Of the total teachers only one teacher had a good knowledge about heart anatomy, RF and RHD.

Even in simple questions like the two mentioned earlier, awareness was very low. The knowledge being low among the teachers, we cannot expect better from the students. Due to the majority of the teachers demonstrating a poor knowledge we also conducted a “Teacher’s Training Workshop” conducted by Dr. Prakash Raj Regmi where the volunteers also performed a drama.

**Conclusion:**

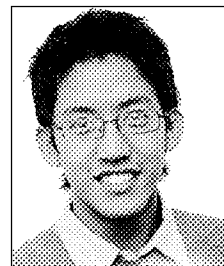
The poor level of awareness shows a dire need for various awareness programs to eradicate the disease in Nepal. If the people have the knowledge then the early treatment can help avoid the disease. The low level of awareness among the teachers made us to expect less from the students or their parents. The study concludes that the results of the awareness about RF, RHD and basic human heart anatomy is much lower than expected in school teachers and that raising awareness among teachers must be a priority for future projects so that they could aware their students and the parents.

**Acknowledgement:**

The awareness generation was a part of Have a Heart! Save a Heart! Project conducted by Nepali SAYS(South Asian Youth Summit) 2011 group in cooperation with Nepal Heart Foundation. Nepal Breakdance Foundation provided overall coordination and budget management. Mentor Anupama Mukhia coordinated the team activities. United States Department of State provided the budget.

# Efficacy of Street Drama on Public Awareness on Rheumatic Fever and Rheumatic Heart Disease

Kunchok Lhundup Lama, Tashi Chooden Lama  
Shree Mangal Dvip Boarding School, Kathmandu, Nepal



**Keywords.** Rheumatic Heart Disease • Rheumatic Fever

• Dr. P. R. Regmi

## ABSTRACT

*This project involves the initiation of youths of Nepal in generating awareness of Rheumatic Heart Disease and Rheumatic Fever which a large number of school children in the Kathmandu valley are prone to. These youths performed a street play on RHD and RF (script compiled from a book "Rheumatic Fever and Rheumatic Heart Disease" by Dr. P. R. Regmi in four different places of Kathmandu valley.*

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## OBJECTIVE

The objective of our Street Drama was to inform the unaware citizens, Teachers, Parents, Teenagers and children about RHD and RF and also to attempt to generate awareness on the prevalence of rheumatic Heart Disease and Rheumatic Fever among the school going children of the Kathmandu valley in Nepal.

## METHODOLOGY

Street drama was chosen as an effective way of raising awareness among the general public regarding RHD. The street drama was performed at the Training for Teachers on RHD and in three public spots in the center of Kathmandu. Flyers on RHD were distributed to the audience and those passing by.

**Activities:** On the 3<sup>rd</sup> December, Youth Leadership Program (YLP) group along with the help from Dr. Prakash Raj Regmi organized a teachers training workshop in Lalitpur Heart Clinic. The Program was entitled Heart Diseases Awareness Campaign; Heart Diseases Prevention Volunteer (HDPV) had a street play on Rheumatic Heart Disease and Rheumatic Fever at the end of the work shop by the students of Shree Mangal Dvip Boarding School (SMD School).

On the 4th December, the students of SMD School and the YLP group again performed the street play (the play taken from the book "Rheumatic Fever and Rheumatic heart disease" written by Dr. P. R. Regmi) in three different places: One at the courtyard of Bir Hospital, the other around the vicinity of Bir hospital and the next at the Rangamanch, Tudikhel.

### ***Street Drama on Rheumatic Heart Disease (RHD) and Rheumatic Fever (RF)***

*Kunchok and Tashi took the responsibility for the street drama. Their school, Shree Mangal Dvip provided support by allowing other students to take part in the drama. The drama was based on a illustrated skit in a book on RHD by Dr. Prakash Regmi. Script adaptation, actor selection, direction, props were all done by the two SAYS 2011 members.*

*On 3<sup>rd</sup> December the drama was performed at the Teachers' Training on RHD before an audience of 60 people. On 4<sup>th</sup> December the team performed at three spots in the center of Kathmandu i.e. courtyard of Bir Hospital, on the road under a hoarding board on RHD and finally at Rangamanch (open theatre) in Tudikhel. The audience in the public spots ranged from 50 to 100 in each place. A wide variety of people were in the audience: age, gender, caste, class, urban, rural, educated and illiterate. Flyers were distributed.*

*One of the most important outcomes was people coming up asking for contact number for the Nepal Heart Foundation. Many people were curious and came up to ask what the drama was about. SAYS 2011 and NHF team members mingled with the audience who appeared to be out of the hearing range and answered questions about the drama and RHD. Placard with NHF contact number was made on the spot in response to the queries and displayed by the team members. Banner on the project was displayed prominently in the background.*

*Dr. Regmi arranged for media coverage. The drama performed on the road was covered by the national channel Nepal Television and aired in the evening prime time news slot.*

### **RESULT**

With the immense effort from Dr. P. R. Regmi, Bimalaji, Kesang Ma'am, all the SMD school Performers and the YLP group, the teachers training workshop and the street drama awareness program has come to the apex of success in generating Public awareness Program on RHD and RF. The keen faces of audience from all ages seen around us defined us the trust, eagerness and vigilant expression proved that the awareness program is achieving its goal and objective.

### **CONCLUSION**

In conclusion, the street drama project that focused on raising awareness for rheumatic heart disease and rheumatic fever was successful. The street drama project raised awareness by the informative and provocative script, as well as tragic endings that emphasize the impact of RHD and RF on people.

The public response was very positive as the play itself explains the whole information about the RHD and RF. The public were enjoying the awareness generation play forfeiting their five to ten minutes in the play rather than attending their regular destination. Public were busy reading the distributed pamphlets on RHD and RF and even asking for more pamphlets for their friends. Even after the play we can see the public demanding for more information and asking Dr. Regmi lots of questions. So, we conclude that the street drama went successfully and achieved our goal as expected.

### **ACKNOWLEDGEMENT**

For making this street drama project on Rheumatic Fever and Rheumatic Heart Disease successful, our first and foremost appreciation and gratitude goes to Dr. Prakash Raj Regmi



(Cardiologist, Nepal Heart Foundation) for his infinite support and contribution to this project. We are also very thankful to Bimalaji of NHF for her assistance and organizing for the field works. Also we must acknowledge Kesang Rinchen Ma'am for her absolute enthusiasm, support and encouragement and correspondingly to YLP group: Anupama Mukhia Ma'am for her maximum effort and support she extended to the Project, Prasen Man shakya, Rebecca Tamang, Aarjit Adhikari, Shashank Sharma and Anjali Magar for their support during the performances. Finally boundless thanks to all the street drama performers of the SMD school for their great effort and contribution on this project.

## REFERENCE

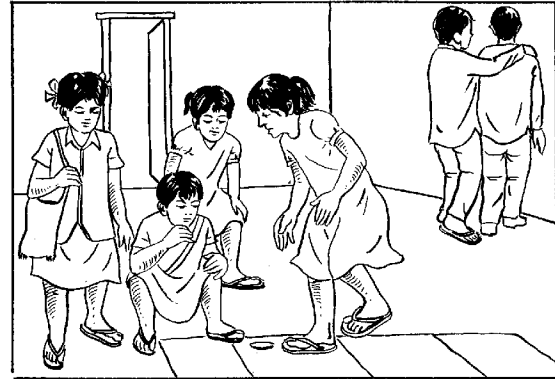
- [1] Dr. P.R. Regmi, Rheumatic Fever and Rheumatic Heart Disease, fourth edition, (Palpa, Tansen: Sahitya tatha swasthya pratishthan, 2063)

## Story of Street Drama (Writer: Dr. P. R. Regmi)

### चित्र कथा

### रुपाको घाँटी र जोर्नीहरु दुख्ने रोग

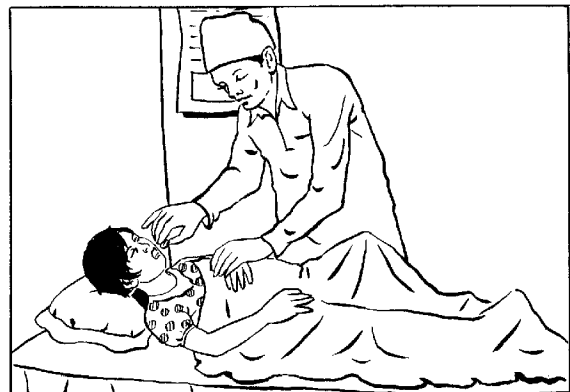




पसलबाट किनेर ल्याएको २०/२५ रूपैयाको औषधीले छोरीको ज्वरो र घाँटी  
दुखाइ ठिक भयो। अब छोरी रुपा पहिले जस्तै स्कूल जाने खेल्ने रान थालिन्।



फेरी १४/१५ दिन पछि रूपालाई ज्वरो आयो। आज त रूपाले जोर्नीहरु दुखेको  
कुरा पनि आमा बुबालाई बताइन्।



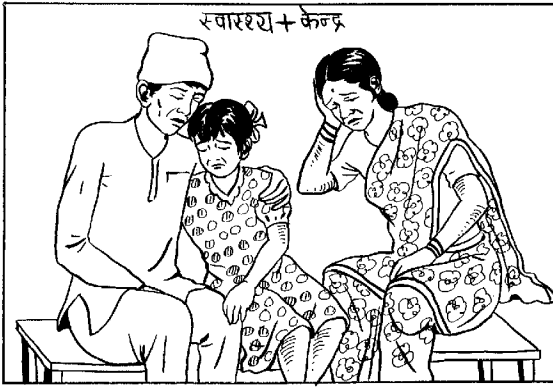
रुपाका बाबुले छोरीलाई ब्रफेन र सिटामोल खान दिए। रोग २/४ दिनमै ठिक  
भयो।



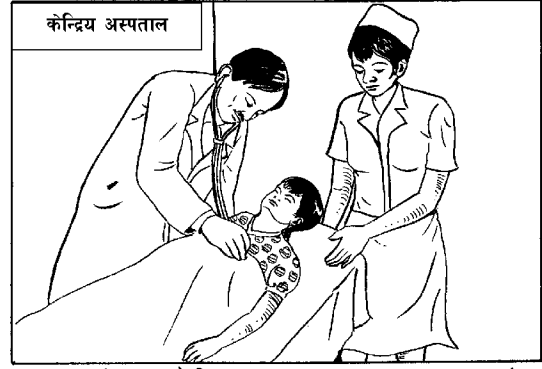
पसले बाबुले आफूले जाने अनुसार औषधी दिए- ब्रफेन र सिटामोल



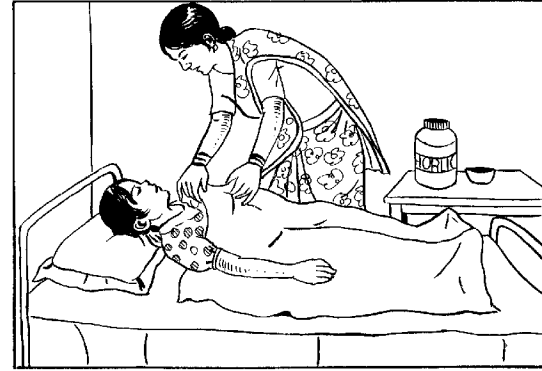
छोरीको रोग ठिक भएको देखेर रुपाका बाबु दङ परे आफैँ डाक्टर भएको  
देखेर।



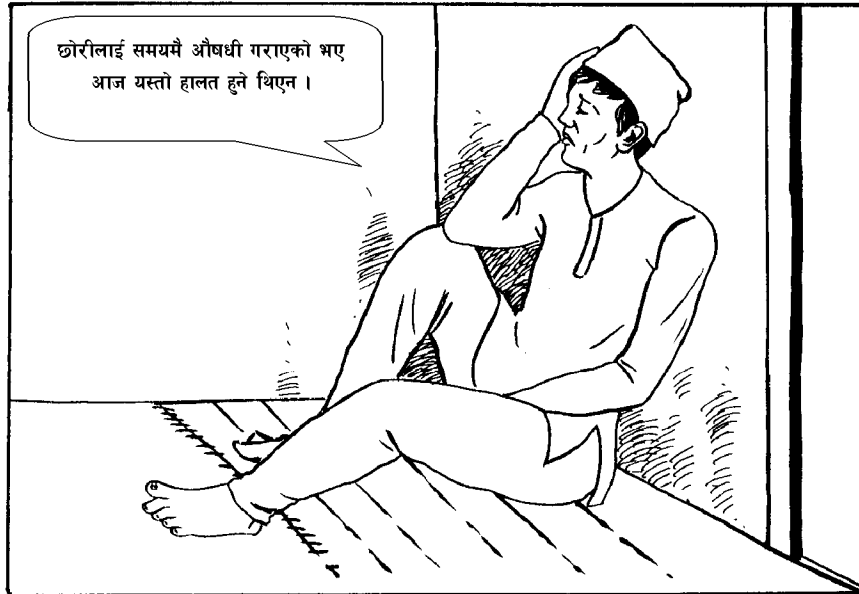
रूपालाई १०/१५ दिनपछि फेरी ज्वरो आयो र जोर्नीहरू दुख्ने भयो । साथै दम बढ्ने, मुटु हल्लिने पनि भयो । रूपाका बाबु फेरी पसले कहाँबाट औषधी ल्याएर खुवाउने सोचाईमा थिएँ तर आमाले जिल्ला अस्पताल लिएर गइन् ।



बुबाले रूपालाई काठमाडौँ लिएर गए । ठूलो अस्पतालमा डाक्टरले जाँच गरि सकेपछि मुटुको भल्भ खराब भएको कुरा बताए । अप्रेशन गर्नु पर्ने र धेरै नै खर्च लाग्ने थाहा दिए । ढिलो भईसकेको हुँदा अप्रेशन पछि पनि रूपालाई बचाउन गाह्रो पर्ने कुरा बताए ।



बिचरा रूपा स्वाँ-स्वाँ गर्दै, खाउँ खाउँ र लाउँ लाउँको उमेर मै मृत्युसंग लड्दै छिन् । रूपालाई समयमै अस्पताल लगेको भए यस्तो अवस्था हुँदैन थियो होला ?

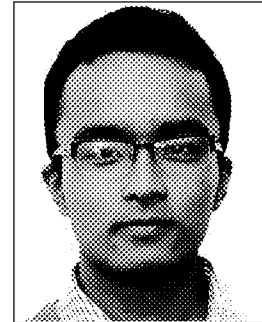


रूपाका बुबा पुपुँरामा हात राखेर रुदै-विगतलाई सम्झिरहेका छन् । मनमनै कसम पनि खाइरहेका छन् । “मेरो छोरीको त यो हालत भयो अब अरु बालबालिकालाई सहि सल्लाह दिएर बचाउने छु । घाँटी दुख्ने, ज्वरो आउने, हात खुट्टाका जोर्नीहरू दुख्ने हुने बित्तिकै डाक्टर कहाँ लगी औषधी गराउनु पर्छ भन्ने कुरा सबैलाई बताउने छु ।”

# **‘Have a Heart, Save a Heart’.**

## **A Team effort in preventing, Rheumatic Heart Disease**

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I must say, that the Rheumatic Heart Disease awareness program has been a wonderful experience for me; indeed it was awe-inspiring to be involved from the inception of the idea to this moment of writing the report. Everyone involved in the *"Have a Heart, Save a Heart"* campaign have had their own unique experiences that were encouraging, exciting and something new. Working in a group of people with remarkable talent and knowledge has inspired me to do more in the future; and especially when the group involved people that ranged from teenagers to adults who are professionals in their own fields.

"Have a Heart, Save a Heart", the title was suggested by Mr. Manoj Manandhar of GAA stating that this was what we were aiming for. Also, an equally powerful message was given by our group member Aarjit Adhikary after ‘extensive thought and time’ citing the title in Nepali "Man lagau, Mutu bachau." *"Have a heart, save a heart: the message is simple yet powerful,"* is what Shashank Sharma stated on our core message and indeed it was.

There was an overwhelming sense of belongingness towards this project which all of us in the group felt and this has promoted the dedication that was required of us and has garnered the support of many old and new acquaintances. On a similar note Aarjit said, *"I am glad that the SAYS exchange program brought us close together, but surprisingly, I have realized that it also brought me closer to the children of Kathmandu."*

Tashi Chhoden Lama said *"the values that I have learnt, the challenges that I have faced, the work that I have done with my group has not only helped me for a year, rather have presented me tool to use for the rest of my life"* on her shared experience in the project. For some of us it was a new experience and for some it was a new form of similar experiences: *"I would say that being involved in this project was very experience able, fun and felt very proud working with my group for the betterment and welfare of youths of our community. I felt surprised working in the field with others as I have not done project like this before apart from this"* said Kunchok Lhundup Lama. And Shashank said, *"Although I had engaged in numerous community service works before, I have spent the most time and effort on this project and it's gladdening to see that it's paid off. When we started the project, I knew we would be taking the next step in eradicating RHD from Kathmandu, but actually going to the government schools, screening the children,*

*and teaching them about heart diseases brought on a whole different feeling of satisfaction that I hadn't comprehended before."*

On our fruitful efforts and findings Shashank shared, *"We were saving lives as well as equipping young children with precious knowledge that they in turn transferred to their family and community. We were making a difference, and it was exciting and empowering to know that. I am thankful as well as pleased that I was able to be part of this project that has morphed into something much bigger than we initially envisioned."* And, Aarjit couldn't have put it more aptly when he said, *"After all our efforts, it indeed feels great to have helped save lives and realize that you've actually made difference. "*

Starting the project and planning ahead was not as easy as anyone would have thought, but we were saved by the constant support provided by Ms. Keshang Renchen from the moment the program was initiated. And, we surely would not have achieved so much without the huge encouragement and assistance of Dr. Prakash Regmi and the Nepal Heart Foundation. All of this effort and work would not have been possible without the root holding us together. And that strong root of our beautiful tree is Ms. Anupama Mukhia. She has been immensely responsible for keeping each and every member close together and coordinating with them.

There are things we always learn when we do something different and important, and Tashi had this to say: *"This program has let me know better by working with people with I have never met and go to learn lot from them and the team. I have got to embrace life along challenges and difficulties without which life isn't fruitful as we assume. It has truly shown the potential in me to change the direction in a positive way starting from small and a simple will."* Just to know the fact that we, as a team, generated awareness about Rheumatic Heart Disease and helped save lives of children, and most importantly be involved is truly 'empowering'.

# **Acute Rheumatic Fever, Rheumatic Heart Disease**

*World Heart Federation (Updated 2008)*

## **INTRODUCTION**

Acute Rheumatic Fever (ARF) and Rheumatic Heart Disease (RHD) is the most common cardiovascular disease in children and young adults and remain a major public health problem in developing countries. Recent research estimates that about 15.6 million people are affected worldwide, 2.4 million of who are children between 5 and 14 years old in developing countries. Almost half a million new cases are declared every year. ARF and RHD result in an estimated 350,000 deaths annually, and hundreds of thousands of survivors are left disabled without access to the expensive medical and surgical care that RHD requires.

ARF is a disease of poverty. It is particularly rampant in low-income, overcrowded communities with poor housing conditions, poor nutrition and inadequate health services.

An untreated Group A streptococcal infection can lead to ARF. ARF is an autoimmune condition which mainly affects the large joints (arthritis) and the heart (carditis). Repeated Group A streptococcal infections and recurrent ARF can lead to chronic heart valve damage (RHD) requiring expensive heart valve surgery. If damaged heart valves are not repaired or replaced by major open-heart surgery, the condition is often fatal.

RHD is preventable.

The first episode of ARF can be prevented by treating Group A streptococcal infections with penicillin;

If the first ARF episode is not prevented, recurrent episodes (which almost always lead to RHD) can be prevented with long-term penicillin delivered at regular intervals.

Secondary prevention refers to the delivery of regular penicillin to prevent further ARF and the development or worsening of RHD. Secondary prevention is best delivered as part of a programme that includes health education for parents, children, teachers and health care providers, routine screening for disease, availability of penicillin and maintenance of a disease register to manage known ARF and RHD cases. Importantly, secondary prevention programmes can be implemented through the existing health care services without major additional costs.

## **Definitions**

### **Group A beta-haemolytic streptococci**

Humans are exposed to Group A streptococcus (GAS) bacteria through the environment. Infections of the throat and skin are common sites of infection. GAS infections of the throat have been positively linked to the onset of ARF.

GAS throat infections occur commonly in children throughout the world, with the peak ages between 5 and 15 years. The number of children affected in each region varies depending on environmental conditions, level of poverty and the quality and availability of health care.

## Acute Rheumatic Fever

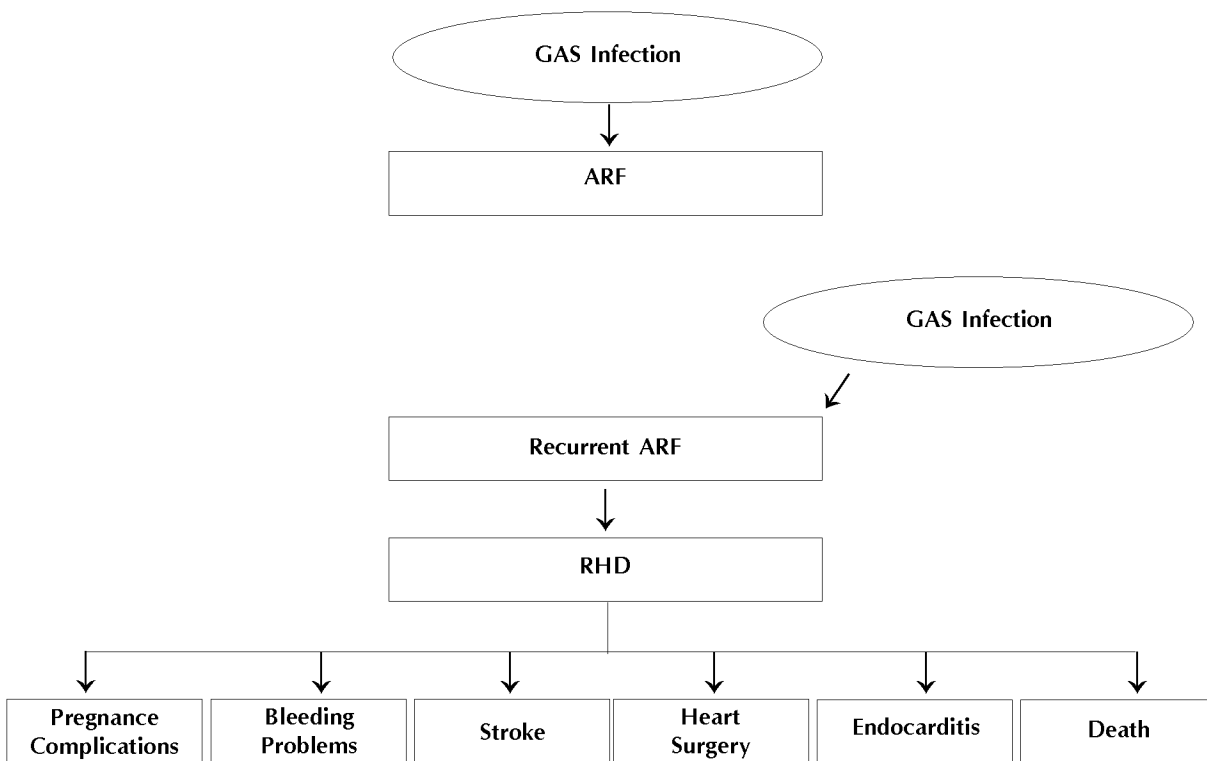
Acute rheumatic fever (ARF) is a delayed autoimmune response to an untreated GAS infection. ARF may involve the heart, joints, central nervous system and/or skin. Signs and symptoms may include any or all of the following: arthritis (of one or more joints), fever, carditis (inflammation of the heart), rash, Sydenham's chorea (uncontrolled movements), and subcutaneous nodules.

ARF develops about 2-3 weeks after the onset of a GAS infection. The illness usually lasts up to 3 months and resolves without treatment. With treatment the symptoms resolve within 1-2 weeks. ARF can occur repeatedly in people who continue to be exposed to high levels group A streptococci in their environment.

## Rheumatic Heart Disease

Rheumatic heart disease (RHD) presents as damage to the heart valves as the result of repeated attacks of

ARF. The valves become stretched and scarred and do not move normally. The valves may not close properly which can allow blood to leak backwards, and/or the valves may not open properly which can cause blood flow to be blocked. If RHD is not diagnosed and managed early, it may result in heart failure and premature death.



## **Disease Control**

ARF or RHD can be diagnosed in individuals at any stage during disease progression. Early diagnosis of ARF and regular treatment can prevent the development of RHD.

ARF and RHD they can be prevented at population level by sustainable control strategies. For regions with high rates of disease the World Health Organisation (WHO) recommends a dedicated, register-based programme which focuses on identifying cases, delivering regular prophylaxis treatment, and education. Programmes have been established in many countries throughout the world. Success of RHD control programmes is determined by the level of Government commitment to funding and resources, capability and enthusiasm of staff involved, and response from the community.

This training package has been designed to provide an understanding of ARF and RHD control and assist in the development of sustainable and effective control programmes.

## **EPIDEMIOLOGY**

### **Risk Factors for ARF**

Rheumatic heart disease is a disease of poverty. The following factors increase the risk of developing ARF:

Overcrowding and poor standard of housing;

Reduced access to health care;

Living in a tropical climate.

ARF is most common in children between the ages of 5 and 15 years. ARF is less common after the age of 35 years.

ARF is rare under 4 years and over 40 years of age.

NOTE: ARF should be considered in all age groups in high risk populations, and not ruled out because of age.

### **Changing pattern of RHD**

Improved living conditions, a better standard of health care, and the introduction and use of antibiotics have decreased the prevalence of ARF and RHD in most developed countries over the past century. RHD is still common in developing countries, and among indigenous populations in developed countries.

### **Epidemiology of ARF and RHD**

In 1994, it was estimated that 12 million individuals suffered from ARF and RHD worldwide and at least 3 million had congestive heart failure (CHF) that required repeated hospital admissions. A large proportion of the individuals required cardiac valve surgery within 5-10 years. The death rate from RHD varied from 0.5 per 100,000 population in Denmark, to 8.2 per 100,000 population in China, and the estimated annual number of deaths from RHD for 2000 was 332,000 worldwide. The death rate per 100,000 people varied from 1.8 in the WHO Region of the Americas, to 7.6 in WHO South-East Asia Region. Information from developing countries suggests that death due to ARF and RHD remains a problem, and that children and young adults still die from ARF. A recent systematic review of 57 studies found the highest calculated prevalence in sub-Saharan Africa, the Pacific and Indigenous Australia and New Zealand. (Table 1) Reliable information



on the incidence of ARF is scarce. In some countries, however, information from local ARF registers of schoolchildren provide useful information on trends.

The annual incidence of ARF in developed countries began to decrease in the 20th century, with a marked decrease after the 1950s; it is now below 1.0 per 100,000. The few studies conducted in developing countries report incidence rates ranging from 1.0 per 100,000 school-age children in Costa Rica, up to 72.2 per 100,000 in French Polynesia, 100 per 100,000 in Sudan, and 150 per 100,000 in China. The incidence in Aboriginal children in the Top End of Australia's Northern Territory is 330 per 100,000.

The prevalence of RHD has also been estimated in surveys, mainly of school-age children. Survey results showed there is a wide variation between countries, ranging from 0.2 per 1000 schoolchildren in Havana, Cuba to 2.2 cases per 1000 in Cambodia and 2.3 cases per 1000 in Mozambique. The prevalence of ARF and RHD and the mortality rates vary widely between countries and between population groups in the same country, such as between Maoris and non-Maoris in New Zealand, Samoans and Chinese in Hawaii, and Aboriginals and non-Aboriginals in Northern Australia.

Although it is known that death figures from hospitals often give biased information about the amount of diseases in the community, they are the only sources of information available in many developing countries. Based on this, RHD accounts for 12-65% of hospital admissions related to cardiovascular disease, and for 2.0-9.9% of all hospital discharges in some developing countries. There has been a marked decrease in the RHD-related death, incidence, prevalence, hospital admissions and severity of ARF and RHD in some places that have implemented prevention programmes, such as; Havana, Cuba; Costa Rica; Cairo, Egypt; and Martinique and Guadeloupe.

### **Determinants of the disease burden of ARF and RHD**

It is well known that socioeconomic and environmental factors play an indirect, but important, role in the prevalence and severity of ARF and RHD. Factors such as a shortage of resources for providing quality health care, inadequate expertise of health-care providers, and a low level of awareness of the disease in the community can all effect the expression of the disease in populations. Crowding adversely affects rheumatic fever incidence (Table 2).

<b>Year</b>	<b>Area surveyed</b>	<b>Prevalence</b>	<b>Ages</b>
2004	All developing countries	1.6 per 1,000	5-14 years
2007	Aboriginal Aust (Top End)	8.6 per 1,000	5-14 years
2007	Cambodia	2.2 per 1,000	6-17 years
2007	Mozambique	2.3 per 1,000	6-17 years
2008	Tonga	33.2 per 1,000	10-15 years
2008	Fiji	78 per 1,000	5-14 years

**Table 1.** International RHD Prevalence (Confirmed on echocardiogram)

<b>Determinants</b>	<b>Effects</b>	<b>Impact on ARF &amp; RHD burden</b>
<p>Socioeconomic &amp; environmental factors</p> <ol style="list-style-type: none"> <li>1. Poverty</li> <li>2. Poor nutrition</li> <li>3. Overcrowding</li> <li>4. Poor standard of housing.</li> </ol>	<ol style="list-style-type: none"> <li>1. Rapid spread of Group A streptococcal strains</li> <li>2. Difficulties accessing health care recurrent AFR.</li> </ol>	<ol style="list-style-type: none"> <li>1. Higher incidence of acute streptococcal pharyngitis and complications</li> <li>2. Higher incidence of ARF and recurrent ARF.</li> </ol>
<p>Health system related factors:</p> <ol style="list-style-type: none"> <li>1. Shortages of resources for health care</li> <li>2. Low Level of knowledge of ARF disease among health-care providers</li> <li>3. Low-level of awareness of the disease in the community. prophylaxis delivery.</li> </ol>	<ol style="list-style-type: none"> <li>1. Inadequate diagnosis and treatment of strep pharyngitis</li> <li>2. Misdiagnosis or late diagnosis of ARF</li> <li>3. Inadequate secondary prophylaxis delivery.</li> </ol>	<ol style="list-style-type: none"> <li>1. Higher incidence of ARF and recurrent ARF</li> <li>2. Missed first ARF episode.</li> <li>3. Inadequate secondary prophylaxis delivery</li> <li>4. Higher rates of recurrent ARF with more frequent and severe heart valve involvement.</li> <li>5. Higher rates of repeated hospital admissions and expensive heart valve surgery.</li> </ol>

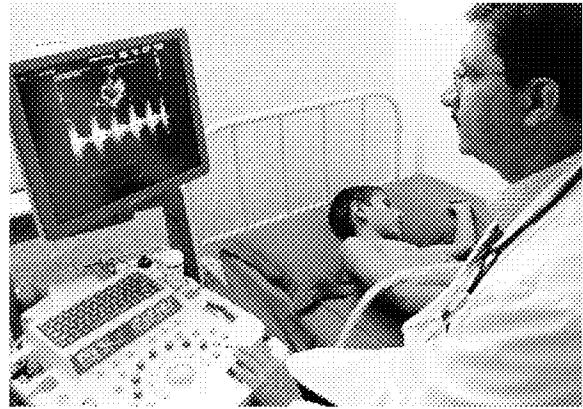
**Table 2.** Direct and indirect results of environmental and health-system determinants on ARF/RHD

# PHOTO GALLERY

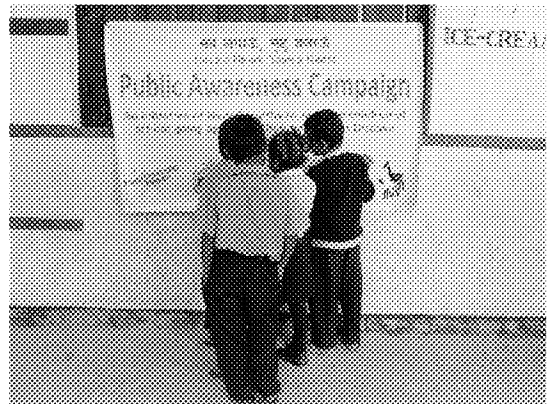
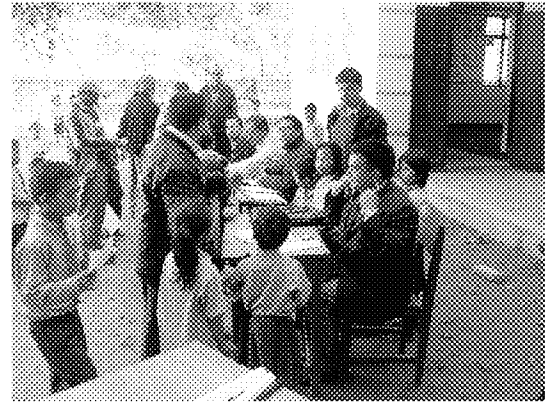
## School Visits & Heart Screening



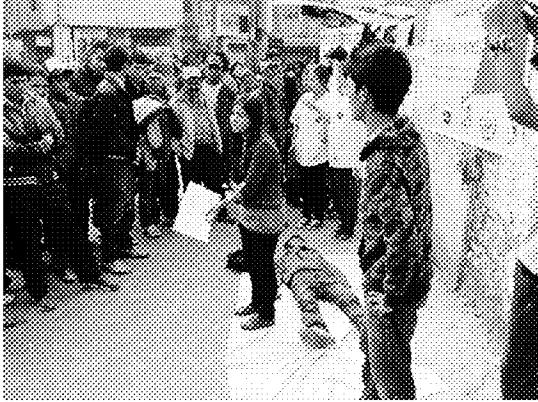
Samata Sikshya Niketan School, Gwarkho, Lalitpur.



Dr. Regmi screening the children via Doppler Echocardiography at Lalitpur Heart Clinic.



## Street Drama



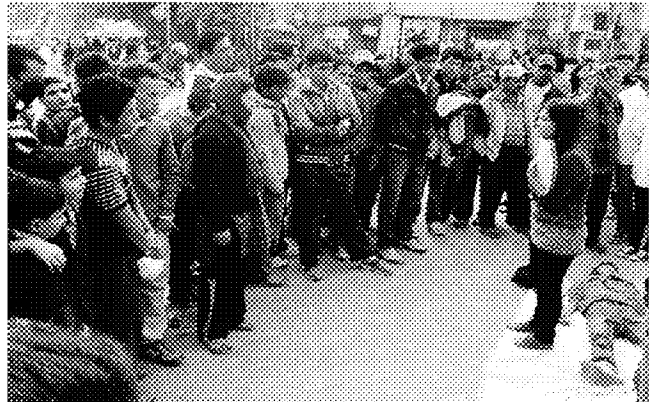
**Bir Hospital Road Side**



**Bir Hospital Road Side**



**Bir Hospital Road Side**



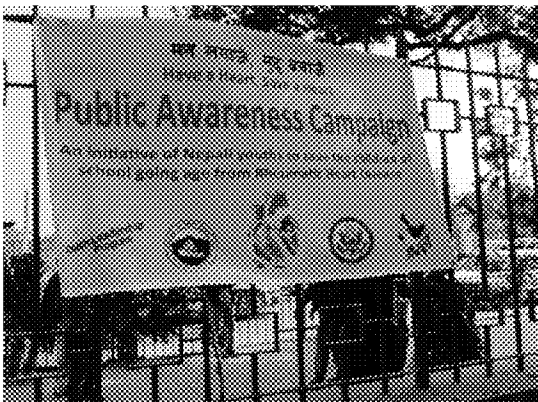
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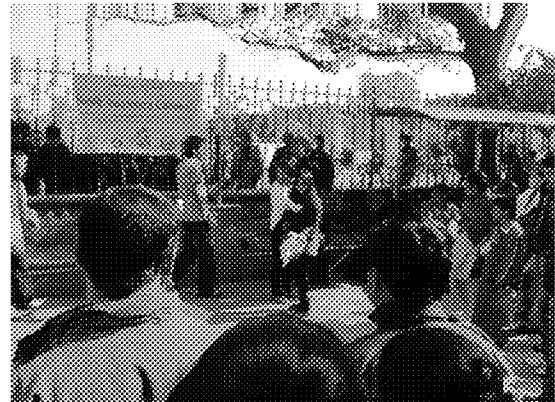
**Bir Hospital Road Side**



**Lalitpur Heart Clinic Hall**

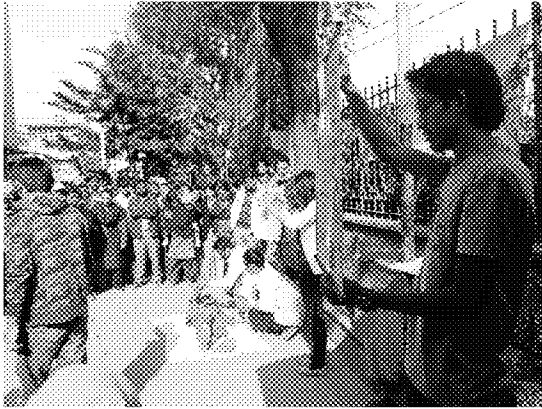


**Bir Hospital Premises**



**Bir Hospital Premises**

**Street Drama**



**Bir Hospital Premises**



**Bir Hospital Premises**



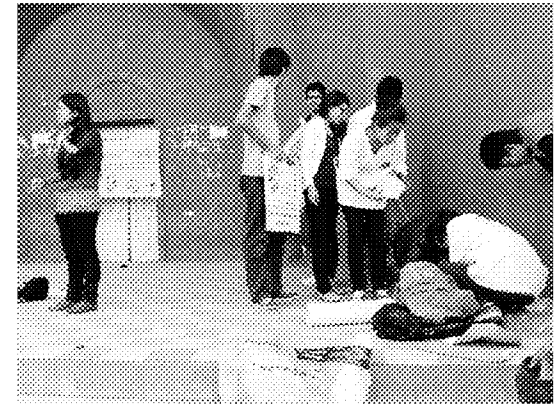
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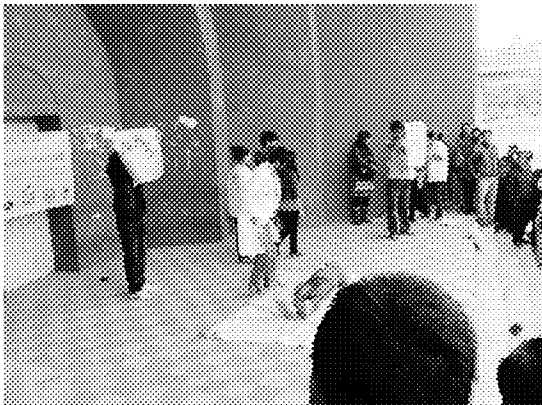
**Tudikhel, Open Stage**



**Tudikhel, Open Stage**



**Tudikhel, Open Stage**



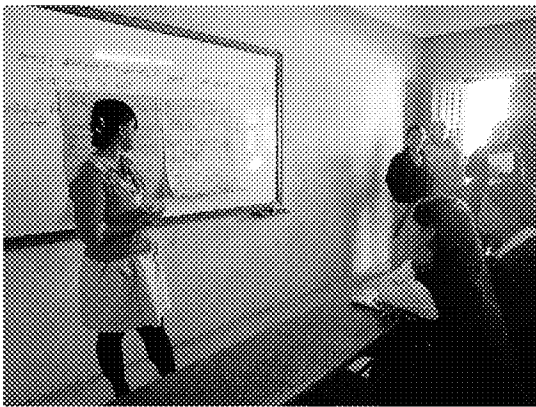
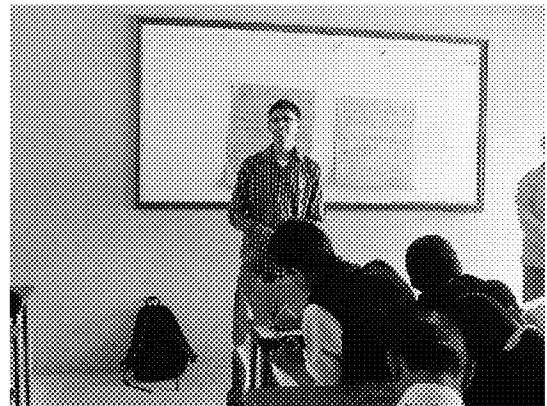
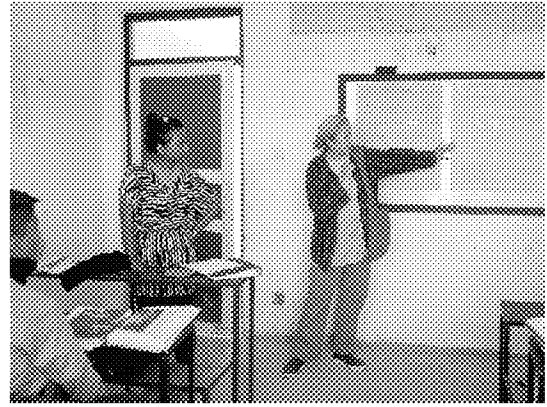
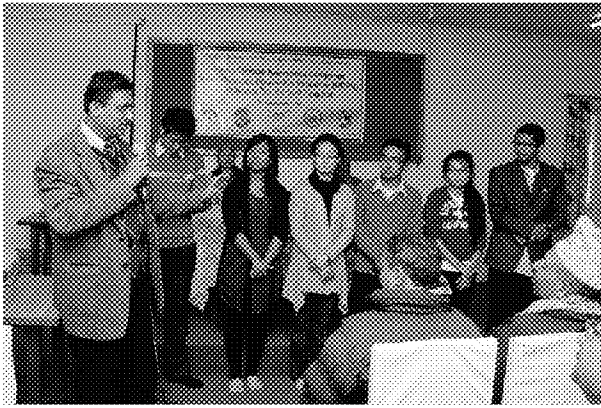
**Tudikhel, Open Stage**

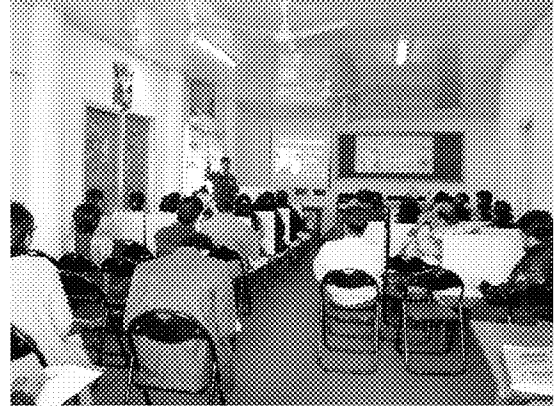
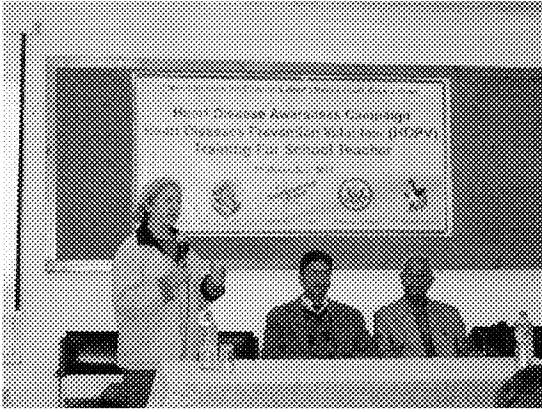


**Tudikhel, Open Stage**



## Training on RF/RHD





### Filling up the Survey Form

