

Endline evaluation of “Diabetes Prevention and Control” project of Humana People to People India (HPPI), Jodhpur, Rajasthan 2015



Submitted to:



HUMANA
PEOPLE TO PEOPLE INDIA

by:

**INSTITUTE OF HEALTH
MANAGEMENT RESEARCH**

(WHO Collaborating Centre for District Health System Based on Primary Health Care)

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Table of Contents

Acknowledgments.....	5
Executive Summary.....	7
CHAPTER 1	10
1.1. INTRODUCTION.....	10
1.2. OBJECTIVES OF THE STUDY.....	13
1.3. METHODOLOGY.....	13
1.4. ETHICAL ISSUES.....	15
1.5. PROJECT BACKGROUND.....	15
1.6. DATA QUALITY.....	16
CHAPTER 2	17
2.1. FINDINGS.....	17
2.1.1. Community household information.....	17
2.1.2. Occupation and income.....	18
2.1.3. Substance use.....	18
2.1.4. Substances habit among household members.....	20
2.1.5. Disease history of the household.....	21
2.2. Prevention.....	25
2.3. Conclusion.....	28
2.4. Learning and recommendations.....	28
Annex I.....	30
Qualitative Report.....	30
Case Study I.....	30
Case Study 2.....	31
Case Study 3.....	32
Case Study 4.....	33
Annex II.....	34
Focus Group Discussion with community members.....	34
FGD Meeting-01.....	34
FGD Meeting-02.....	36
FGD Meeting-03.....	37
FGD Meeting-04.....	39
FGD Meeting-05.....	41
Conclusion on discussions with the community.....	42
Annex III.....	43
In depth interview with Dr. Saxena, Additional Director and former Chief Medical Health Officer.....	43
In depth Interviews.....	44
Conclusion of in depth interviews.....	46
Annex IV.....	47
Indicators showing difference between baseline data and after the intervention in endline data.....	47

List of Tables

Table A: Key Indicators – COMMUNITY (fact sheet)	9
Table B: Sample size covered under the study	15
Table 1: Occupation and monthly income of the household.....	18
Table 2: Dietary habits of the household	19
Table 3: Substances habits of the household members	20
Table 4: Household members suffering from various diseases	21
Table 5: Respondent characteristics	22
Table 6: Awareness of respondents on diabetes and the source of information	22
Table 7: Diabetes awareness	23
Table 8: Awareness of risk factors and prevention of diabetes endline	24
Table 9: Testing for diabetes, place of test and frequency endline	25
Table 10: Treatment for diabetes	26
Table 11: Homestead garden.....	26
Table 12: Practice and advice on diabetes.....	27

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Research Team

Acronyms

ANC	Ante Natal Care
ANM	Auxiliary Nurse Midwife
ASHA	Accredited Social Health Activist
AWW	Anganwadi Worker
BCC	Behavioural Change Communication
BMSF	Bristol-Myers Squibb Foundation
BPL	Below Poverty Line
CHC	Community Health Centre
EIC	Education Information and Communication
FGD	Focus Group Discussion
GNM	General Nurse Midwife
HPPI	Humana People to People India
HR	Human Resource
IRB	Institutional Review Board
NCD	Non Communicable Disease
NPCDCS	National Programme for Prevention and Control of Cancer, Diabetes, Cardio Vascular Disease and Stroke
PRI	Panchayati Raj Institution
VHSC	Village Health and Sanitation Committee

Executive Summary

The top ranking diseases in India in both 1990 and 2013 include depressive disorder, iron deficiency anemia, lower back pain and migraine. Diabetes, which did not feature among the top ten diseases in India in the 1990s, ranked eighth in 2013. In December 2012 HPPI initiated a community based diabetes prevention and control project in the Mandore block of the Jodhpur District of Rajasthan with the funding support from Bristol-Myers Squibb Foundation (BMSF). The key objective of the project was to enhance utilisation of diabetes testing and treatment services of the health system through community education and mobilisation. Before implementing the project HPPI conducted a Knowledge Practice Attitude (KAP) study among the project beneficiaries as baseline information. The objective of the study was to understand the community and their awareness on diabetes, risk factors and health seeking practices. The baseline information was a key instrument to develop the programme planning and strategy formulation to implement the programme objectives.

HPPI aimed to conduct an endline evaluation of the Diabetes Community Care and Support project by following similar principles and methodologies of the baseline survey with a basic objective to understand the impact of the project interventions and find out the grey areas, if any, for further improvement in the implementation of the project in the near future.

The following are some of the key changes in the KAP of the project beneficiaries as reflected in the endline survey.

The awareness level of the respondents had gone up to 96.3 percent and more than 70 percent of them give credit to the project staff of HPPI. During the case studies, it was found that people are so impressed by the project staff that when they meet their friends and relatives, the individuals talk about the disease and ask them to take prevention (60.8 percent).

Irregular food intake was the major cause of diabetes as told by the respondents (53.6 percent), another major cause was carbohydrate rich diet (45.9 percent). Overweight was mentioned by only 17 percent where as the age factor above 45 years was mentioned by only 14 percent. Alcoholism as another cause to complicate the disease was 15.6 percent, where as only 10 percent said that stress was the cause.

The knowledge of the risk factors of diabetes also shows a change from 13 percent to 59 percent. This change could be associated with the intense awareness campaign launched in schools and the community and the use of wall writings, (*nukad nataks*) street plays (one of the most effective strategies adopted by the organisation) and inter personal communication through task forces going door to door spreading awareness about the disease. Almost three fourth of the community members were influenced by the organisation’s efforts as revealed by the study. Normally only those with symptoms or risky lifestyle would go for testing. The large number of people tested is the combined result of the awareness campaign by the project (which happened during the door to door visits, via testing camps and special awareness actions), making testing available at the village level, and the collaboration with the NCD Cell, which was determined to test all the people above the age of 30 years. The test strips were provided by the NCD Cell.

Nearly 87 percent of the people went for blood tests after the intervention under the project. The major contribution by the organisation can be seen in by the fact that a large number of persons who had blood sugar above the normal value (hyperglycemia) had been able to control their blood

sugar levels with exercise and dietary measures as promoted by the project, and many of the mildly affected had even been able to control it to such an extent, that they did not need anti diabetic oral medicines.

Looking into the situation, it can be concluded that the project has made its impact within the community as reflected in the FGDs and case studies. Meetings with teachers, lawyers, doctors and other retired members spell out that the organisation has been very active and should continue the activities not only in this block but also in the complete district, not only in the area of diabetes but also communicable diseases, such as HIV AIDS and malaria.

Table A : Key Indicators – COMMUNITY (fact sheet)

Indicator	Baseline Endline Comparison	
	Baseline	Endline
Proportion of respondents who had ever heard of diabetes	38.1	96.3
Proportion of respondents who knew Diabetes is a disease	24.7	96.4
Proportion of respondents who knew that in diabetes blood sugar becomes high	11.5	55.9
Proportion of respondents who knew that diabetes can be detected by doing blood tests	21.2	71.5
Proportion of respondents who knew at least 2 risk factors of diabetes	13.1	59.9
Proportion of respondents who were able to identify at least 2 symptoms of diabetes	12.7	61.2
Proportion of respondents who knew at least 2 ways of protection from diabetes	13.2	59.1
Proportion of respondents who were tested at least once for diabetes	21.4	39.8
Proportion of respondents who showed high blood sugar after the test	56.3	18.5
Proportion of respondents who have been taking oral medications for diabetes	99.3	42.9
Proportion of respondents who have been taking ‘insulin’ injection for diabetes	13.2	14.3
Proportion of respondents who are willing to advise family members with diabetes on controlling blood sugar	20.7	39.6

Chapter 1

1.1. INTRODUCTION

There is an epidemic of diabetes in India. At present, the confirmed number of diabetes patients in India is 67 million, with another 30 million in the prediabetes group. By 2030, India will have the largest number of diabetic patients in the world. Diabetes is not only a blood sugar problem, but also brings along other complications. In 2000, India (31.7 million) topped the world with the highest number of people with ‘diabetes mellitus’ followed by China (20.8 million) with the United States (17.7 million) in the second and third places respectively.

According to Wild et al the prevalence of diabetes is predicted to double globally from 171 million in 2000 to 366 million in 2030 with a maximum increase in India. It is predicted that by 2030 diabetes mellitus may afflict up to 79.4 million individuals in India, while China (42.3 million) and the United States (30.3 million) will also see a significant increase in those affected by the disease¹. India currently faces an uncertain future in relation to the potential burden that diabetes may impose upon the country. Many influences affect the prevalence of a disease throughout a country, and identification of those factors is necessary to facilitate change when facing health challenges.

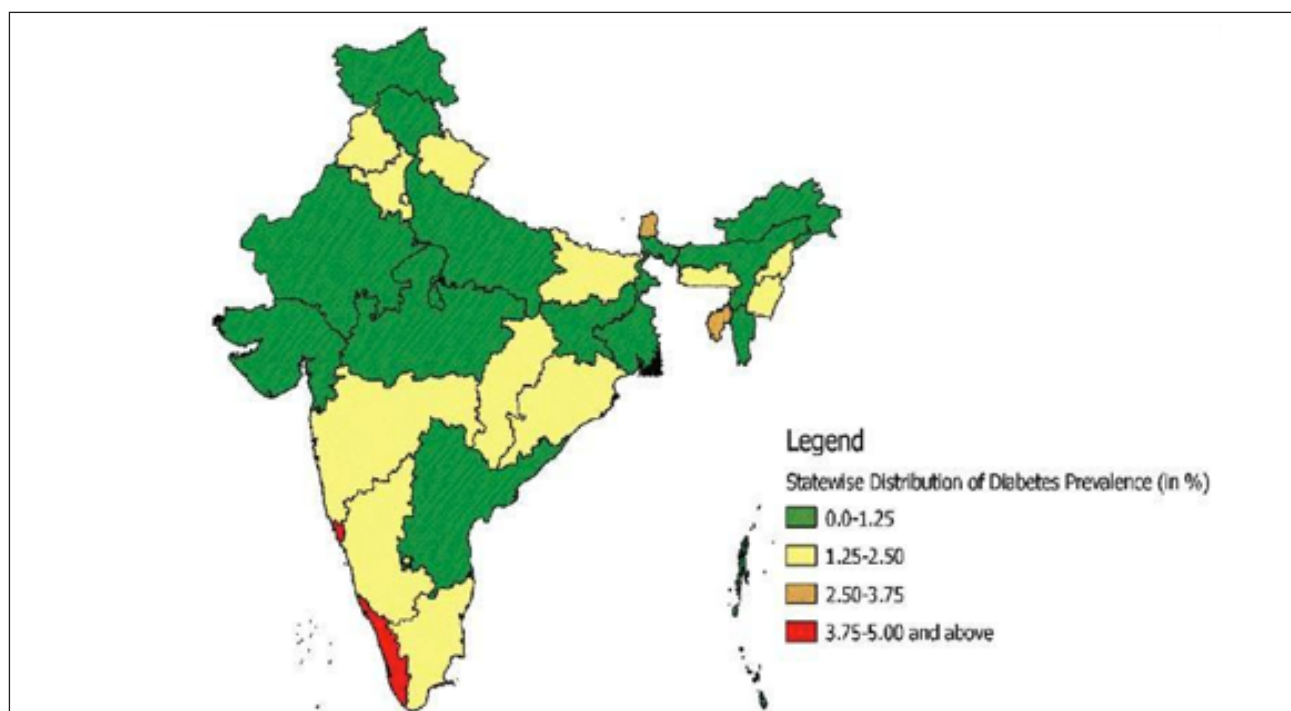
The etiology of diabetes in India is multifactorial and includes genetic factors coupled with environmental influences such as obesity associated with rising living standards, steady urban migration and lifestyle changes. Yet, despite the incidence of diabetes within India, there are no nationwide and few multi-centric studies conducted on the prevalence of diabetes and its complications. The studies that have been undertaken are also prone to potential error as the heterogeneity of the Indian population with respect to culture, ethnicity and socio economic conditions that the extrapolation of regional results may give inaccurate estimates for the whole country.

There are, however, patterns of diabetes incidence that are related to the geographical distribution of diabetes in India. Rough estimates show that the prevalence of diabetes in rural populations is one quarter of the urban population for India and other Indian sub continent countries such as Bangladesh, Nepal, Bhutan, and Sri Lanka. Preliminary results from a large community study conducted by the Indian Council of Medical Research (ICMR) revealed that a lower proportion of the population is affected in states of Northern India (Chandigarh 0.12 million, Jharkhand 0.96 million) as compared to Maharashtra (9.2 million) and Tamil Nadu (4.8 million). The National Urban Survey conducted across the metropolitan cities of India reported a similar trend: 11.7 per cent in Kolkata (Eastern India), 6.1 per cent in Kashmir Valley (Northern India), 11.6 per cent in New Delhi (Northern India), and 9.3 per cent in West India (Mumbai) compared to (13.5 per cent in Chennai, 16.6 per cent in Hyderabad, and 12.4 per cent Bangalore².

¹Global Prevalence of Diabetes Estimates for the year 2000 and projections for 2030, Sarah Wild, MB BCHIR, PHD1, Gojka Roglic, MD2, Anders Green, MD, PHD, DR MED SCI3, Richard Sicree, MBBS, MPH4 and Hilary King, MD, DSC2

²Indian Council of Medical Research – India Diabetes (ICMR-INDIAB) study of 2011

Figure: The status of diabetes prevalence in 2014 on an average by state is presented below:



(Source: Indian Journal of Endocrinology & Metabolism)

Although the Indian urban population has access to reliable screening methods and anti-diabetic medications, such health benefits are not often available to the rural patients. There is a disproportionate allocation of health resources between urban and rural areas and in addition poverty in rural areas may be multifaceted. Food insecurity, illiteracy, poor sanitation and the dominance of communicable diseases may all contribute, which suggests that both policy makers and local governments may be undermining and under prioritising the looming threat of diabetes. Such inadequacies contribute to an infrastructure that may result in poor diabetes screening and preventive services, non adherence to diabetic management guidelines, lack of available counselling and long distance travel to health services. More needs to be done to address the rural urban inequality in diabetes intervention.

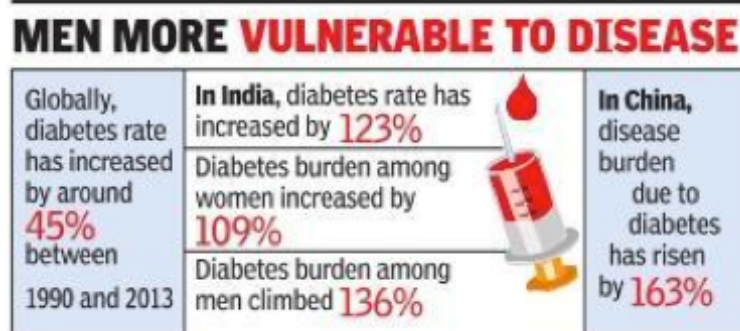
To reduce the disease burden that diabetes creates in India, appropriate government interventions and combined efforts from all the stakeholders of the society are required. Clinicians may be targeted to facilitate the implementation of screening and early detection programmes, diabetes prevention, self management counselling, and therapeutic management of diabetes in accordance with the appropriate local guidelines form the backbone for controlling the predicted diabetes epidemic. Early screening and detection of prediabetes (especially in pregnant women, children and adults with BMI ≥ 25) may yield positive health outcomes in the society. Continuing education programmes for general practitioners may provide the “clinical impetus” required to initiate programme adherence and this may be a major step in achieving the targeted glycaemic levels and the prevention of the disease complications.

Government policies may help in creating guidelines on diabetes management, funding community programmes for public awareness about diabetes risk reduction, availability of medicines and diagnostic services to all sections of the community. Efforts by various governments and agencies around the world to intervene in diabetes management have resulted in positive health outcomes for their communities.

Diabetes mellitus is reaching potentially epidemic proportions in India. The level of morbidity and mortality due to diabetes and its potential complications are enormous, and pose significant healthcare burdens on both families and the society. Worryingly, diabetes is now associated with a spectrum of complications and occurring at a relatively younger age in the country. In India, the steady migration of people from rural to urban areas, the economic boom, and the corresponding change in lifestyle are all affecting the level of diabetes. Yet, despite the increase in diabetes there remains a paucity of studies investigating the precise status of the disease because of the geographical, socio economic, and ethnic nature of such a large and diverse country.

³Diabetes cases in India up 123% in 13 yrs

The number of cases of patients with diabetes in India has risen by 123% between 1990 and 2013, while globally, the increase was around 45%, a recent study has showed. The disease has also been identified among the ten triggers for disorders ranging from obesity to paralytic strokes in both men and women, reports Sushmi Dey.



The findings, part of a global study by the Institute for Health Metrics and Evaluation (IHME) at the University of Washington, is based on an analysis of 301 acute and chronic diseases and injuries in 188 countries. Experts say that the trend is linked to the economic development of India over the last two decades which has massively impacted the lifestyle including the eating and sleeping habits mainly among youngsters.

Data shows that diabetes is now among the top ten reasons for various other disorders among both men and women as it breeds obesity, obstructive sleep apnea, severe kidney and lower urinary tract infection, stroke and many other diseases.

The findings are the part of a global study conducted by the Institute for Health Metrics and Evaluation at the University of Washington.

The study, based on the analysis of 301 acute and chronic diseases and injuries in 188 countries, said the trend, which has been more common in rich countries for several decades is now picking up in the developing nations such as India, China and Mexico.

The maximum jump was observed in type 2 diabetes, which is usually related to obesity and is the most common form of the disease.

"Diabetes is an escalating problem in India and has major socio economic dimensions. Rapid dietary changes coupled with decreased level of physical activity have resulted in increasing obesity and diabetes in rural and semi urban areas," said Dr Anoop Misra, a leading endocrinologist and chairman of Fortis-CDOC for diabetes and allied sciences. According to Misra, increased stress levels, irregular working hours, lack of exercise and consumption of alcohol and fast food were some of the significant contributors for the increasing the incidence of diabetes in India.

Doctors say diabetes is a major cause of increasing the disease burden among both men and women

³Times of India, June 15 2015

at an early age. For instance, more youngsters now face heart diseases, blood abnormalities, nerve damage, arthritis and other such disorders.

The study, however, shows a slight decline in deaths from communicable diseases like malaria and tuberculosis, while chronic diseases like cancer and diabetes are on the rise. However, the burden of disability measured with population living with any given disorder in a year has not changed much over the last two decades along with the causes remaining largely the same on the list of the top ten.

The top ranking diseases in India in both 1990 and 2013 include depressive disorder, iron deficiency anemia, low back pain and migraine. Diabetes, which did not feature among the top ten diseases in India in the year 1990s, is ranked eighth in 2013⁴.

1.2. OBJECTIVES OF THE STUDY

In the beginning of the Diabetes Community Care and Support project, the HPPI project team internally conducted a Knowledge Attitude and Practices (KAP) study among the project beneficiaries as baseline information. The objective of the study was to understand the community and their awareness of diabetes, risk factors and health seeking practices. The baseline information was a key instrument to develop the programme planning and strategy formulation for the implementation of the programme objectives. HPPI aimed to conduct an endline evaluation of the Diabetes Community Care and Support project by following similar principles and methodologies of the baseline survey with a basic objective to understand the impact of the intervention and find out the grey areas, if any, for further improvement of the implementation in future.

The specific objectives of the project evaluation are as follows:

- (1) To evaluate the status of the target population (beneficiaries under the project area) on:
 - a. Knowledge of diabetes, risk factors, symptoms
 - b. Health seeking practices in terms of screening for diabetes
 - c. Current load of diabetes and other non communicable diseases in terms of treatment seeking
 - d. Attitude of the people to help diabetes affected people
 - e. Local food habits
- (2) To measure the degree of changes on KAP on the Diabetes Community Care and Support project among the target community before and after the implementation of the project.
- (3) To document good practices and success stories of the project for up scaling the project activities in other areas in the near future.

1.3. METHODOLOGY

The HPPI Diabetes Community Care and Support project was implemented in the Mandore block of the Jodhpur District in Rajasthan, to help to reduce diabetes related morbidity and mortality and to prevent the onset of diabetes among the prediabetics through timely intervention and home based diabetes care. The estimated target population in the project area was 200,000 estimated households

⁴Institute for Health Metrics and Evaluation at the University of Washington.

in the project area was about 40,000 (5 members per household) and the expected number of villages was 74.

The secondary documents of the project like the proposal, operational guideline, baseline survey report, quarterly performance reports, reports submitted to donors, project records, annual report of HPPI, secondary report and data and others were reviewed by the study team members to develop the study instruments (quantitative and qualitative), process indicators and guidelines for organising FGD.

The endline evaluation study will adopt both the quantitative and the qualitative techniques to develop the measurable indicators to verify the changes under the project. The sample frame for the evaluation survey was developed based on the number of villages covered under the project. The structured questionnaires were used for the household level survey and a checklist for the in depth interview. For qualitative aspects, community level FGD was organised separately for the men and women groups. In depth interviews were carried out for the frontline health workers (ANM and ASHA), knowledgeable/PRI members of the community, project staff/field workers of HPPI and NPCDCS staff (specially looking after the diabetes) along with the district level health officials, the Medical Officer In-Charge of Mandore Block of Jodhpur District.

Sample Size to estimate a proportion with specified precision

Sample Size:

$$SS = \frac{Z^2 * (p) * (1-p)}{c^2}$$

Where: Z = Z value (e.g. 1.96 for 95% confidence level); p = prevalence 0.38 diabetes awareness level in baseline (percentage picking a choice, expressed as decimal: 0.38 is used for sample size needed) & c = confidence interval, expressed as decimal (e.g., .05 = ±5).

For quantitative evaluation of KAP with the household members (considering prevalence of awareness in the Mandore Block in Jodhpur District of Rajasthan general, 95% of confidence level and confidence interval 0.05), the sample size calculated was 363. Considering the sample loss/sampling error we added another 10 % in our sample size hence the total sample for the study was **400**.

The total 25% study villages out of 74 in the baseline coverage i.e. 20 villages and 20 samples from each village (20*20 = 400 sample population) was covered which gave us a good scientific estimate about the entire population. The sample villages were selected through the Population Proportion to Sample (PPS) method and selection of household followed the simple random sampling process from the listing of HH in the village. The qualitative aspects of the study covered a good number from different sections of people like service providers, project people, knowledgeable community members, PRI members etc. which was used to support the inferences drawn from the quantitative aspects.

Table B : Sample size covered under the study

Sr.No	Category	Total Number	Achieved Sample
1	Number of villages to be studied	20	20
2	HH members to be contacted for the quantitative study @20 per village (50% of male and 50% female)	400	408
For the in depth survey (qualitative study) the following personnel/ group will be contacted with different instruments:		-	-
a	In depth interview with the members of the households for developing the success story on the project	5	5
b	PRI members along with knowledgeable (teacher/senior village members etc)	15	10
c	Health service providers (ASHA and ANM)	20	12
d	Project people in the field level as well as the programme level	10	7
e	District, Block Level Health Official including the staff of the National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke	7	3
f	FGD with the community (2 with women groups and 2 with men groups)	4	5

1.4. ETHICAL ISSUES

Collecting data for the baseline survey on human subjects is a sensitive issue. An informed consent was taken from each individual in the study. Assurance of privacy and confidentiality was provided to the respondents. The ethical clearance was sought from the IIHMR Institutional Review Board (IRB) before starting the study.

1.5. PROJECT BACKGROUND

In December 2012 HPPI initiated a community based “Diabetes Community Care and Support” project in the Mandore Block of the Jodhpur District of Rajasthan with the funding support from the BMS (Bristol-Myers Squibb) Foundation. The key objective of the project was to enhance utilisation of diabetes testing and treatment services of the health system through community education and mobilisation. The “Diabetes Community Care and Support” project of Humana People to People India was launched as a complementary initiative to support the rolling out of the NPCDCS (The National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke) in Jodhpur. The NPCDCS is integrated with the National Health Mission through the involvement of ASHA workers, Humana People to People India (HPPI) found an opportunity to work closely with the health system as well as the Panchayati Raj Institution/PRI (local governance system of the village). The main objective of the Diabetes Community Care and Support project was to enhance

the community education on diabetes, community mobilisation for diabetes testing and community sensitisation to minimise the risk factors of diabetes. The project was supported by the Bristol-Myers Squibb Foundation and completed its tenure on May 31, 2015.

The project was started in December 2012 and carried out various activities to create awareness. Some of these activities are summarised below:

1. House to house visits, one to one sessions, spread the outreach of its programme to 220,732 people who have been registered with the project
2. Training of 274 ANMs and ASHAs
3. School education programmes and community awareness programme
4. Blood testing camps with the help of the NCD cell 120,976 people underwent tests for diabetes and 4,241 diabetic cases were detected
5. Formation and training of 1,597 community based support groups (TRIOs) on how to improve the lives of the diabetic patients and prediabetic individuals who were reached in the first year
6. Formation of 1,340 homestead gardens. The project encouraged the locals to establish homestead gardens by educating them on the various benefits of such an initiative

1.6. DATA QUALITY

To ensure good quality data collection, the training of research staff and field team was accorded high importance.

Training of field staff

Before the initiation of data collection, an intensive two day training programme was conducted for the field team at IIHMR University, Jaipur. The faculty and research officers of IIHMR imparted training to the field supervisors and investigators. This training programme oriented them towards diabetes, project objectives and implementation of the study tools. Emphasis was laid on using an objective approach while collecting the data so that personal biases may not influence the quality of data collection.

Data quality

All the field teams had supervisors, who were trained to monitor the quality of data collection. The research staff conducted frequent visits to closely monitor the quality of field work by the teams. All the filled questionnaires were edited in the field itself.

Data analysis

All the data was collated and analysed at IIHMR University, Jaipur. Software was prepared for data entry using Cspro 4.1. The quantitative information was analysed using IBM SPSS statistical software package ver. 21. In addition, the qualitative open ended responses were analysed and incorporated under major themes.

Chapter 2

2.1. FINDINGS

2.1.1 Community household information

The proposed project was implemented in the Mandore Rural Block of the Jodhpur District of Rajasthan. Jodhpur is typical of a fast developing industrial district of Rajasthan, with an increasing semi urban population, and a rural population with the young generation employed in the different sectors of services, businesses and industries.

Changes in dietary habits along with increasing stress levels owing to a modern lifestyle are not uncommon among the growing middle class, making people vulnerable to diabetes and other lifestyle disorders. Epidemiological studies of type 2 diabetes in the northern region of India have demonstrated an increasing trend in prevalence; for example, in the city of Jaipur, the prevalence has increased from 12.3 percent in 2003, to 16.8 percent in 2004 and 20.1 percent in 2007⁵.

The project reached 200,000 individuals, which is almost the entire population of the Mandore block. The population is almost equally divided between men and women, with literacy rates for men at 80.46 percent and women at 52.7 percent.

The endline study covered 408 persons, out of which 204 were male and 204 female, the table below shows the main occupation of the household. It can be observed that 41 percent of the households were engaged as non agricultural labour; only 12.6 percent were working as agricultural labour.

11 percent was employed in the government sector or private services. The household’s monthly income found that 55 percent were earning less than Rs.10,000/per month and 44 percent were earning more than Rs.10,000/per month.

⁵India - Diabetes Capital of the World : Now Heading Towards Hypertension Shashank R Joshi*, Rakesh M Parikh

2.1.2. Occupation and Income

Table 1: Occupation and monthly income of the household

Characteristic	Endline
Main Occupation	
<i>Non agricultural labour</i>	41.5
<i>Domestic servant</i>	1.0
<i>Agricultural labour</i>	12.6
<i>Cultivator</i>	7.7
<i>Petty business</i>	11.6
<i>Small artisan in HH</i>	5.8
<i>Self employed</i>	4.8
<i>Employed (private/government)</i>	10.6
<i>Large/medium business</i>	1.9
<i>Others</i>	2.4
Household monthly income in Rupees	
<i>1000-5000</i>	15.0
<i>5001-10000</i>	40.6
<i>10001 or more</i>	44.4

2.1.3 Substance use

Poonam Khetrpal Singh, WHO Regional Director for South East Asia region mentioned that nearly half of the deaths of non communicable diseases occur in the age group of 30 to 70 years. Promoting simple lifestyle changes and diet modifications can bring about a change.

The WHO recommended that all countries implement the “best buys” interventions.

These cost effective, high impact interventions include banning all forms of tobacco and alcohol advertising, reducing salt consumption, replacing trans fats with polyunsaturated fats, promoting and protecting breast feeding, early detection and treatment of high blood pressure and preventing cervical cancer through periodic screening.

Small dietary changes can make a difference to your sugar levels. As seen in the table 2 below, it can be observed that more than 93 percent eat vegetarian diet. ⁶Studies have also found that non vegetarians:

- Have a shorter lifespan and are more prone to chronic diseases as compared to vegetarians.

“Diabetes is an escalating problem in India and has major socio-economic dimensions. A rapid dietary change coupled with decreased level of physical activity has resulted in increasing obesity and diabetes in rural and semi urban areas.”

Dr. Anoop Misra, a leading endocrinologist and chairman of Fortis-CDOC for diabetes and allied sciences.

⁶Kanupriya Khanna, Dietitian, www.NutritionVista.com

- On an average have more heart disease, hypertension, and diabetes.
 - Predominantly eat lesser amounts of fruits and vegetables than recommended.
- More than 66 percent eat thrice against four meals as prescribed to diabetic patients by HPPI.⁷ Many people found that eating smaller amounts of food 4 to 6 times a day, instead of eating 2 or 3 big meals, meets their energy needs and keeps them from getting too hungry. It also helps to keep blood sugar from going too high after a big meal.

Table 2: Dietary habits of the household

Characteristic	Baseline Endline Comparison	
	Baseline	Endline
Dietary habits		
<i>Proportion of households with vegetarian food habits</i>	93.8	93.7*
<i>Proportion of households with non vegetarian food habits</i>	6.1	21.7*
Average food intake per day	Endline	
2 Times	28.5	
3 Times	66.2	
4 Times	4.3	
More than 4 times	1.0	
Junk food		
<i>Proportion of family members having Junk food</i>	65.2	
Frequency	135	
Several times a week	6.7	
Once a week	17.0	
Once a fortnight	1.5	
Once a month	14.8	
Once in several months	3.0	
Rarely	57.8	
Breakfast		
<i>Proportion of family members having breakfast</i>	19.8	
Items in breakfast** (n=41)	41	
Kachori (refined flour stuffed with lentils)	14.6	
Samosa (refined flour stuffed with potatoes)	9.8	
Jalebi (sweet snacks)	2.4	
Pakora (deep fried potatoes and onions dipped in gram flour)	9.8	
Mirch bada (green chilli stuffed with potato)	4.9	
Bread	17.1	
Poha (pressed rice)	12.2	
Paratha or roti (wheat bread)	31.7	
Others (daliya chach, bajri sogro, etc.)	12.2	

⁷Mary Hanson, registered dietitian, Group Health, Reviewed 03/01/2014

Beverages	
<i>Proportion of family members having beverages</i>	98.6
Items as beverages**	
Tea	98.0
Coffee	2.5
Cold drink	1.0
Squash	0.0
Milk	11.8
Others	0.5

**This table is based on the family background (HH members total of 1618) and not individual based it is a proportion and not percent*

*** Multiple responses*

More than 65 percent consume junk food, the consumption of processed and ready to eat foods such as baked foods and fried foods in place of more healthy food such as raw fresh fruits and vegetables. A huge amount of salt is found in baked goods, packaged and processed foods and fatty meats.⁸ Nearly twenty percent of the household members have breakfast, and paratha or roti (31.7 percent) are the preferred items for breakfast. Almost all households are consuming Tea (98 percent) as a beverage.

If you have diabetes, drinking alcohol will cause your blood sugar to rise. Plus, alcohol has a lot of calories.⁹ A large proportion of the surveyed respondents informed that none of their household members consume alcohol (84.5 percent). But the proportion of household members habituated to alcohol consumption, smoking and both has increased consistently from baseline to endline (Table 3).

2.1.4 Substances habit among household members

Table 3: Substances habits of the household members

Characteristic		
	Baseline	Endline
Proportion of households where members are habituated to alcohol consumption	5.6	15.5
Proportion of households where members are habituated to smoking	15.8	35.3
Proportion of households where members are habituated to both alcohol consumption and smoking	1.5	9.7
Alcohol consumption	Endline	
One member	12.6	
Two members	1.9	
Three and above	1.0	
	0.0	
None	84.5	

⁸Kanupriya Khanna, Dietitian, www.NutritionVista.com

⁹American Diabetes Association. Joslin Diabetes Center. Reviewed by Michael Dansinger, MD on December 29, 2013

Smoking habit	
One member	41
Two members	30.4
Three and above	3.9
All members	1.0
None	0.0
	64.7

In a report by the Department of Health and Human Services, it is said that if you have diabetes and you smoke, you are more likely to have serious health problems from diabetes. Smokers with diabetes have higher risks for serious complications, including:¹⁰

- Heart and kidney disease
- Poor blood flow in the legs and feet that can lead to infections, ulcers, and possible amputation (removal of a body part by surgery, such as toes or feet)
- Retinopathy (an eye disease that can cause blindness)
- Peripheral neuropathy (damaged nerves to the arms and legs that causes numbness, pain, weakness, and poor coordination)

If you are a smoker with diabetes, quitting smoking will benefit your health right away. People with diabetes who have quit smoking have better control of their blood sugar levels¹¹. However, in the study it was found that around 30 percent have one smoker in their family and nearly 65 percent do not have any smokers in the family.

2.1.5 Disease history of the household

The founder member of Delhi Diabetes Forum also says that the prevalence of diabetes increases with a family history of diabetes. The risk of a child developing diabetes with a parental history increases above 50 per cent.

Table 4. Household members suffering from various diseases

Characteristic	Baseline Endline Comparison	
	Baseline	Endline*
Proportion of households with history of diabetes	0.97	1.9
Proportion of households with history of hypertension	0.58	4.8
Proportion of households with history of both diabetes and hypertension	1.55	6.8
Proportion of households where anyone died in the household due to diabetes or diabetes related complications	0.05	0.5

**This table is based on the HH data not individual response HH total 1618 it is a proportion not frequency and not percent*

¹⁰A Report of the Surgeon General. *How Tobacco Smoke Causes Disease: What It Means to You*. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2010 [accessed 2014 May 5].

¹¹How Tobacco Smoke Causes Disease: *The Biology and Behavioral Basis for Smoking-Attributable Disease. A Report of the Surgeon General*. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2010 [accessed 2014 May 5].

A high incidence of diabetes is seen among the first degree relatives. Indians have a high genetic risk for diabetes as observed in Asian Indians who have migrated to other countries. They have been found to have a higher rate of diabetes as compared to the local population.¹² Only two percent households have a history of diabetes and 5 percent respondents had any family history of hypertension. Only seven percent households had a history of both diabetes and hypertension.

Table 5. Respondent characteristics

Characteristic	Baseline Endline Comparison	
	Baseline	Endline*
Age group		
<30 Years	7.6	0.0
30-45 Years	50.4	52.2
>45 Years	42.0	47.8
Male	36.0	49.8
Female	64.0	50.2

*The denominator for female percent calculation was 12,000

As seen in Table 5 above that more than 50 percent of the respondents were in the age group of 30-45 years, which is the most risky group. The project aimed at forming a TRIO¹³ group in the age group of 30-45 years.

"आज मैं जब बाहर जाता हूँ तो रिश्तेदारों को व अन्य लोगों को भी शुगर के बारे सामान्य जानकारी देता रहता हूँ व लक्षणों पर चर्चा करता हूँ ताकि अन्य लोगों को भी शुगर के बारे जानकारी मिले व जागरूकता आये" **Khiyaram Jat**

As seen in Table 6 below, the awareness level of the respondents had gone upto 96.3 percent and more than 70 percent gave credit to the project staff of HPPI.

During the case studies it was found that people were so impressed by the project staff that when they met their friends and relatives, the individuals told them about the disease and to take prevention measures (60.8 percent, table 6)

Table 6: Awareness of respondents on diabetes and the source of information

Opinion/Awareness	Baseline	Endline
Proportion of respondents who had ever heard of diabetes	38.1	96.3
Source*	Endline	
Radio/TV	8.4	
Newspaper/magazine	6.1	
Doctor	19.6	
Nurse/pharmacist/lab. technician	3.6	
Health worker	9.4	

¹²Dr. Rajiv Gupta, Founder Member and Former President, Delhi Diabetes Forum

¹³TRIO It is a three member group formed to take care of the diabetic patient, community support groups of a diabetic patient, a family member, and a passionate (volunteer) to support and care for the patient.

Friends/relatives	60.8
HPPI project staff	72.5
Street play/wall writing/pamphlet	45.3
Camp organised by the project staff in partnership with NCD	13.5
Other	0.5

**Multiple responses*

In Table 7 it is seen that more than 61 percent of the respondents were aware of at least 2 symptoms of diabetes and nearly 56 percent knew that to test the glucose level one can see it from a blood test, when glucose level is high one is sure of diabetes. Excessive urination (54.1 percent), excessive appetite (47.8 percent) and weakness and lethargy were the most common symptoms mentioned by the respondents.

Table 7: Diabetes awareness

Awareness	Baseline	Endline
Proportion of respondents aware of diabetes as a disease	24.7	96.4
Proportion of respondents aware of at least TWO symptoms of diabetes	12.7	61.2
Reaction of diabetes	Endline	
High sugar in blood	55.9	
High sugar in urine	24.3	
I have no idea	27.4	
Others	4.0	
Symptoms of diabetes*		
Excessive appetite	47.8	
Excessive thirst	26.6	
Excessive urination	54.1	
Body becomes lean and thin	17.7	
Weakness and lethargy	42.7	
I have no idea	15.8	
Others (eye weakness, swelling, etc)	7.7	

**Multiple responses*

Irregular food intake was the major cause of diabetes as told by the respondents (53.6 percent, Table 8), another major cause was a carbohydrate rich diet (45.9 percent). Overweight was mentioned by only 17 percent whereas age factor (above 45 years) was mentioned by only 14 percent. Alcoholism as another cause to complicate the disease was mentioned by 15.6 percent, whereas only 10 percent said that stress is the cause.

As also mentioned by the India Diabetes Federation, several risk factors have been associated with type 2 diabetes which includes:¹⁴

¹⁴International Diabetes Federation, 2014

- Family history of diabetes
- Overweight
- Unhealthy diet
- Physical inactivity
- Increasing age
- High blood pressure
- Impaired glucose tolerance (IGT)
- History of gestational diabetes
- Poor nutrition during pregnancy

According to Table 8, it can be seen that the respondents attributed to the intake of regular meals as a prevention (61.2 percent) and 44 percent felt taking a low carbohydrate diet would control the glucose level in blood.

Table 8: Awareness of risk factors and prevention of diabetes endline

	Baseline	Endline
Awareness		
Proportion of respondents who knew at least two risk factors of diabetes	13.1	59.9
Risk factors*		
Overweight		17.9
Age above 45		14.2
High blood pressure		5.5
Lack of exercise		8.7
Stress		9.8
Alcoholism		15.6
Irregular food intake		53.6
High carbohydrate diet		45.9
During pregnancy (for women)		0.8
I have no idea		19.0
Others		1.3
Prevention*		
Reduction of weight and preventing weight gain		16.4
Control of high blood pressure		2.4
Regular exercise		21.6
Reduction of stress		8.2
Intake of diet at regular intervals		61.2
Limiting/stopping alcohol intake		14.0
Stop taking too much of carbohydrate in diet		44.3
Regular checking of blood for sugar after the age of 45		5.0
Checking of blood for sugar during pregnancy		0.3
I have no idea		14.0
Others (eating neem leaves, drink camel's milk, etc.)		4.2

*Multiple responses

Table 9: Testing for diabetes, place of test and frequency endline

Testing	Baseline	Endline
Proportion of respondents ever gone through a blood sugar test	21.4	37.0
	Endline	
Blood sugar test		
Before the start of the project (2012)	17.9	
After the project (2013)	13.2	
	86.8	
Place of test		
Government hospital	35.8	
Private hospital	26.5	
NGO run clinic	33.8	
Camp organised by the project staff in collaboration with NCD	37.7	
Mobile clinic	2.0	
Other (AWC, HPPI staff, etc.)	5.3	
Frequency of test		
Only 1 time	34.4	
2 times	28.5	
3 times	19.2	
More than 3 times	14.6	
Don't remember	3.3	

2.2. Prevention

According to the International Diabetes Forum there are six ways of prevention and this was the message given by HPPI during two years of the awareness campaign. Obesity, particularly abdominal obesity, is linked to the development of type 2 diabetes.

1. **Weight loss** improves insulin resistance and reduces hypertension. People who are overweight or obese should therefore be encouraged to achieve and maintain a healthy body weight.
2. **Physical activity** is one of the main pillars of the prevention of diabetes. Increased physical activity is important in maintaining weight loss and is linked to reduced blood pressure, increased insulin sensitivity, improved body composition and psychological well being.
3. **A balanced and nutritious diet** is essential for health. A healthy diet reduces risk factors for cardiovascular diseases.
4. **Smoking** is a well established risk factor for many chronic diseases, including diabetes and its complications along with other harmful effects. Smoking increases abdominal fat accumulation and insulin resistance. All smokers should be encouraged to quit smoking.
5. **Stress and depression:** There is evidence of a link between depression and both diabetes and cardiovascular disease.

6. **Sleeping patterns:** Both short (<6h) and long (>9h) sleep durations may be associated with a higher risk of developing type 2 diabetes. Sleep deprivation may impair the balance of hormones regulating food intake and energy balance.

There is also a close association between obesity and obstructive sleep apnea syndrome (OSA), the most common form of sleep disordered breathing.¹⁵

From Table 9, it can be seen that out of the total sample only 37 percent had undergone the test and nearly 87 percent said that they went for the test after the project interventions. Nearly 38 percent had undergone their first test at the testing camp whereas 36 percent went to the government centre for the test. More than 1/3 tested only once and about 29 percent had got themselves tested twice.

Table 10: Treatment for diabetes

	Baseline Endline Comparison	
	Baseline	Endline*
Proportion of respondents who have been taking oral medication for diabetes	99.3	42.9
Proportion of respondents who have been taking 'insulin' injection for diabetes	13.2	14.3

The Table 10 above shows a declining percent of intake of oral medication, since the care and support given by the project after the intervention and awareness created by the staff was good. People have become more aware and have taken precautions, plus development of homestead gardens and consumption of vegetables grown in the garden are beneficial, hence intake of oral medicine has decreased.

Table 11: Homestead garden

Suggestion and Implementation	Endline
Proportion of respondents were suggested by HPPI team to develop homestead gardens by the project staff	62.6
Proportion of respondents who developed a homestead garden with free distribution of seeds by HPPI staff	29.3

Even though the respondents (62.6 percent) were suggested to grow homestead gardens, only 29 percent were found with homestead gardens, because the scarcity of water and the extreme weather was a hurdle for the development of the gardens, Table no 11.

¹⁵International Diabetes Federation, 2014

Table 12: Practice and advice on diabetes

Advice	Endline
Proportion of respondents who are willing to advise their overweight relative/family member/colleague ‘to reduce weight’	66.9
Proportion of respondents who are willing to advise their diabetic relative/family member/colleague ‘to control sugar’	38.0
Age for regular sugar checkup	
After 30	17.4
After 40	27.2
After 50	10.3
After 60	1.0
At any age	19.1
Not required if the person is fit	0.2
I have no idea	24.2
Others (after 20 years)	0.7
Advice to friend/relative/family member about being overweight	
Why should I give advice?	0.7
Advice to consult a doctor	63.2
I have no idea what to advice	9.6
Advise to develop a homestead garden	5.1
Advice to friend/relative/family member about diabetes	
Why should I give advice?	1.0
Advice to consult a doctor regularly	84.1
I have no Idea what to advice	7.4
Advice to develop a homestead garden	7.8

Table 12, shows the practice the respondents are following. It was very encouraging to note that nearly 70 percent were ready to advise other members to reduce weight since it is one of the risk factors for accruing the disease. However, only 27 percent said that 45 plus age was more risky and to get advised by the doctor 63.2 percent was the advice to other family members who are overweight, and 84.1 percent said they will advise the diabetic persons to take the doctor’s advice.

2.3. Conclusion

Government policies help in creating guidelines on diabetes management, funding community programmes for public awareness about the diabetes risk reduction and availability of medicines and diagnostic services to all sections of the community. An effort by various governments and agencies around the world to intervene in diabetes management has resulted in positive health outcomes for their communities.

Diabetes mellitus is reaching potentially epidemic proportions in India. The level of morbidity and mortality due to diabetes and its potential complications are enormous and pose significant health care burdens on both families and society. A study, however, shows a slight decline in deaths from communicable diseases like malaria and tuberculosis, while chronic diseases like cancer and diabetes are on the rise.¹⁶

The endline survey shows an increase in the awareness of diabetes as compared to the baseline data. At the time of baseline 24 percent people were aware which increased to 96 percent. It shows the excellent contribution of the project to create awareness among the community about the disease. The knowledge of risk factors of diabetes also shows a change from 13 percent to 59 percent. This change could be associated with the intense awareness campaigns carried out in schools and among the community and use of wall writings, street plays '*nukad nataks*', (one of the most efficient strategies adopted by the organisation) and the IPC through the task forces going door to door and spreading awareness about the disease. Almost 3/4 of the community members were influenced by the organisation's efforts as revealed by the study. Normally, only those with symptoms or a risky lifestyle would go for the testing. The large number of people tested for diabetes is the combined results of the awareness campaign by the project (which happened during the door to door visits via testing camps and special awareness actions), making testing available at village level, and the collaboration with the NCD Cell, which was determined to test all people above 30 years of age. The test strips were provided by the NCD Cell.

Nearly 87 percent of the people went for blood test after the intervention under the project. The major contribution by the organisation can be seen by the fact that a large number of people who had blood sugar above the normal value (hyperglycemia) had been able to control their blood sugar levels with exercise and dietary measures as promoted under the project and many of the mildly affected had been able to control it to such an extent, that they did not need anti diabetic oral medicines.

2.4 Learning and Recommendations

The project has the following critical learnings and henceforth provided recommendations based on the learnings which should be shared with key stakeholders.

1. Regular and constant monitoring could play an important role in the follow up of the patients suffering from diabetes. The programme should emphasise on regular screening of people with risk factors and advise them to go for a screening test on an empty stomach.
2. Based on screening criteria, the suspect cases should be referred to the nearest CHC for investigation and confirmation of diabetes.
3. More aggressive BCC should be planned to bring about behavioural change. The IEC material developed by the organisation under the project should be displayed in sub centres and PHCs and at prominent places. This requires regular monitoring by the staff residing in the respective villages.
4. NCD cell at the district/CHC has a very important role in the prevention and control of diabetes. Therefore, these cells should be strengthened in terms of HR and facilities and made functional.
5. The problem of attitude towards the disease and health seeking behaviour among women need focused BCC and this should be made an integral part of the BCC campaign.

¹⁶Times of India, June 2015

6. The findings of the evaluation of the project are encouraging in terms of the increase in knowledge, influencing attitudes and behaviour of the population in dealing with diabetes. The intervention deserves to be continued for institutionalisation and is a good practice for up scaling.
7. As discussed with various health officials the main concern was that the NCD cell was weak and needed rejuvenation. The efforts of HPPI in the whole district can contribute a lot and not only in the area of diabetes but also other diseases like cancer, malaria, HIV/AIDS, and in the anti tobacco campaign.

Annex I

Qualitative Report

Case Study I

Name of the Patient: Laxman Ram
Occupation: Property Dealer
Place of Residence: Nandri
Age: 55 years

He was suffering from diabetes for the past 8-9 years, but was unaware of the fact till the project was launched and implemented in his area by the Humana People to People India 2 years back.

There was a meeting held by the project in which he participated and came to know many facts about diabetes, its treatment and control.

"The organisation went from door to door for the survey and made contacts. There was a camp organised in our village and in this camp my glucose level was tested high, so they suggested further testing in the pathology laboratory. I found that my sugar level was very high. The project people told me that not only I but there are many people suffering from diabetes and there was nothing to worry about, a little precaution and lot of exercise would help me to lead a normal life".

They formed a community support group, a TRIO, consisting of the diabetic patient, a family member, and a passionate (volunteer) to support and take care of the patient. They were asked to keep the contact numbers of the field officer and the doctor for emergency support.

"The project staff advised me to develop a small homestead garden and preferably consume organically grown vegetables (as found in the homestead gardens promoted by the project) as this is better for health. The project staff provided



seeds for the same".

"As advised by the project staff I consume vegetables grown in my garden. I look after the garden; this not only helps me to grow good vegetables but also provides routine exercise. In addition to all of this I have cut down on smoking 'bidi' which I did before the project started and I go for morning walks regularly. I take the medicines regularly and in case I forget the TRIO group reminds me about it".

My blood glucose was 420 in the camp and reconfirmed at CHC with 380. The staff asked my son to visit Dr. Arvind Mathur for treatment he being a specialist doctor. After the intervention of staff I have controlled my glucose level (reports seen and verified). I have been advised to consume less potatoes, food with less oil and spices. I practice yoga taught by the yoga master of the project staff Shayamji.

Case Study 2

Name: Khiyaram Jat
Place of Residence: Banad
Age: 65 years
Occupation: Retired Army Personnel

For the last 2-3 years he was undergoing a lot of mental stress due to which he was feeling weak, depressed and was urinating often



"आज मैं जब बाहर जाता हूँ तो रिश्तेदारों को व अन्य लोगों को भी शुगर के बारे सामान्य जानकारी देता रहता हूँ व लक्षणों पर चर्चा करता हूँ ताकि अन्य लोगों को भी शुगर के बारे जानकारी मिले व जागरूकता आये"



Discussion with Khiyaram Jat in progress

During this time my son (Ugmaram) came in contact with project (HPPI) staff and attended a meeting organised by the project staff. He then asked me to undergo a blood test in the camp organised by the project staff. My blood glucose was found to be high, and I was referred again for the test to reconfirm the glucose level.

Case Study 3

Name: Swarup Kanwar
Place of Residence: Ghadav
Age: 60 years
Occupation: Housewife

"For the past 4-5 years I had been feeling weak and would go to a private clinic for intravenous drip. It is then that the project staff from HPPI came in my contact and asked me to go for glucose test in the testing camp. My glucose level was on the higher side hence I was referred to CHC to confirm the test. The people from HPPI have played a major role in my life and frequently remind me that I have to avoid eating potato, rice, oil, sugar and remain stress free. My life has changed after that. Now I feel strong and able to do my own work and household work".

Since the space in this house was not sufficient I have cultivated my own homestead garden at my elder son's house. I walk down daily to my son's place to bring fresh green vegetables and this is beneficial to me in 2 ways which are my daily walking routine and meeting my family.

"इसी के साथ मैंने मेरे पड़ोस कि 2 औरतों को भी समझा कर शुगर की जाँच करवाई जिनको भी मेरी जैसी ही परेशानी होती थी। तो उनको भी शुगर है"



Homestead garden at Swarup Kanwar's elder son



Discussion with Swarup Kanwar in progress

Case Study 4

Name: Dhapu Devi
Place of Residence: Lohdi Panditji
Age: 55 Years
Occupation: Farming



“I was feeling low, weak and losing eyesight due to which my farming work suffered. These symptoms were due to high blood glucose. I came to know about these symptoms only after the project staff came to our village and from the door to door campaign. The project motivated for a blood test in the camp organised by them. In the camp my blood sugar level was higher than the normal range, so they asked me to go for further test in the hospital where the test report was similar to the camp report”.

“Now that I know about my status I take all the precautions and have controlled my blood sugar. A group has been formed to look after my medicines and food. The group consists of myself, my son Keraram and my daughter in law who takes of my dietary needs”.



This garden is connected to waste water from the house

“कभी-कभी मैं चुपके से घर में पड़ा दही खा लेती हूँ तो सभी मना करते हैं कि खान पान का ध्यान रखा चाहिए। इसी के मेरी घर कि रसोई कागज लगाया है सस्था के लोगो ने जिसमें खान पान के बारे में लिखा है। जिसको देख कर मेरे दोनों बेटे मुझे खाना खिलाते हैं” **Dhapu Devi**

Annex II

Focus Group Discussion with Community Members

FGD Meeting-01

Place: Barwarla

Date: 14/05/2015

No. of Participants: 12

Subject: Diabetes Prevention and Control project

A focus group discussion meeting was organised regarding the Diabetes Prevention and Control project in the village Barwala on 14th of May, 2015. A total of 10 to 12 members participated voluntarily in the meeting. The meeting was chaired by the village Sarpanch Mr. Kana Ram who welcomed all the participants and briefed them about the purpose of the group discussion.

Discussions in the meeting were focused on the questions related to diabetes and related problems as given below:

Q.1. Why have we have gathered here today?

Participant Mr. Pukhraj answered that we were here to discuss about a disease related to high sugar level in our body, which is known as diabetes.

Q.2. What are the health hazards due to diabetes?

Mr. Babulal stated that excess sugar level in the blood can cause various complications in the body . Mr. Shyam Soni added that the body can become lethargic and that the vision decreases.

Q.3. What do you know about diabetes and who told you about it?

Mr. Chaunaram, Manaram and Punaram answered that it is a dangerous and fatal disease. Sarpanch Mr. Kanaram said that it is an incurable disease and results from irregular dietary habits. Every participant pointed towards the continuous information provided by the Humana People to People regarding diabetes.

Q.4. What are the symptoms of diabetes?

Mr. Ashok indicated the problem of frequent urination and increased hunger as the symptoms in a diabetic person. According to Mr. Mansing a diabetic patient has symptoms of delayed healing of wound and dizziness or nausea.

Q.5. Who are at a higher risk of diabetes?

Lala Ram: Those who are physically inactive are on a higher risk of diabetes. "Irregular and inadequate dietary habits are the reasons", added Mr. Mohan.

Focus group discussion meeting organised in Khatyansi village regarding diabetes control and prevention.



Q.6. What are the precautions for the prevention of diabetes?

"Proper care should be taken for the diets in daily routine, one should be physically active and do more of physical exercise", suggested the participants.

Q.7. Are there any TRIO group member among the participants?

There was no TRIO group member among the participants.

Q.8. What do you know about TRIO

The participants said, "It is a group of people who take care of the diabetic persons."

Q.9. Do you think this activity should go on even after completion of the project?

The participants felt that such activities should go on for the welfare of the villagers. If this programme is put to an end the awareness activities will fade away from the village which has created a great deal of awareness about diabetes in the society.

Q.10. Do you think such activities should also be extended into other blocks of Jodhpur?

The participants agreed with the provision of extension of a similar programme in the villages and hamlets in other blocks of the Jodhpur District as well. They think that this programme will make people aware about the control and prevention of diabetes in other blocks as well.

FGD Meeting-02

Place: Khatyasani

Date: 16/05/2015

No. of Participants: 14

Subject: Diabetes Prevention and Control project

A focus group discussion meeting was organised regarding Diabetes Prevention and Control project in the village Khatyasni on 16th of May, 2015. A total of 10 to 15 members participated in the meeting. The meeting was chaired by a reputed person of the village, Mr. Bhagwana Ram, who welcomed the participants and briefed them about the purpose of the discussion.

The following questions were included in the FGD which was focused on sugar and diabetes:

Q.1. Why we are gathered here today?

The participants discussed with each other and said that they were gathered to discuss about the disease related to excessive sugar level in our body.

Q.2. What are the health hazards related to diabetes in our body?

Mr. Balkishan stated it can be a risk to life of a person since there is no cure of this disease. Mr. Suresh added that the body can become lethargic and weak.

Q.3. What do you know about diabetes and who told you about it?

Mr. Banshidas said it is a dangerous disease. "This disease is caused due to self carelessness and the condition can become more serious due to ignorance", stated Mr. Omprakash. All the participants emphasized on the continuous information provided by the members of Humana People to People.

Q.4. What are the symptoms of diabetes?

Mr. Ranaram told about body pain and attraction of ants towards the urine as the symptoms in a diabetic person. "Frequent urination and increased hunger are the symptoms of diabetes", stated Mr. Bharat.

Q.5. Who are at a higher risk of diabetes?

Shravn ji said that those who consume a lot of alcohol, are physically inactive and lazy possess a higher risk of being diabetic. "Diabetes is caused by excessive intake of sugar in daily food", said Suresh ji.

Q.6. What are the precautions for the prevention of diabetes?

"Proper care should be taken for the diets in the daily routine, suggested Jalaram. Harsh felt that stopping alcohol intake and reduced sugar consumption are the cure for diabetes. Bharat said that one should be physically active and do a lot of physical exercise in order to stay away from diabetes.

Q.7. Are there any TRIO group member among the participants?

There are no TRIO group member among the participants.

Q.8. What do you know about TRIO

According to Mr. Bhagwanji, "It is a group of people organised by the institution, who take care of the diabetic persons. Three persons from the patient's family also join the group as members".

Q.9. Do you think this activity should continue even after completion of the project?

The participants opined that such activities should go on for the sake of the villagers' welfare. If this programme is put to an end the related activities will vanish from the village. There would be no one to make people aware about the consequences of diabetes and the measures for its prevention.

Q.10. Do you think such activities should also be extended to the other blocks of Jodhpur?

The participants are satisfied with the intervention of the project hence want the extension of a similar programme in the villages and hamlets (dhanis) in other blocks of the Jodhpur District. They believe that this programme will make people aware about the control and prevention of diabetes in the other blocks too.

FGD Meeting-03

Place: Bisalpur

Date: 16/05/2015

No. of Participants: 10

Subject: Diabetes Prevention and Control project

A focus group discussion meeting was organised regarding the Diabetes Prevention and Control project in the village Bisalpur on 14th of May, 2015. A total of 10 women voluntarily participated in the meeting. The meeting was chaired by the village ward panch Mrs. Sushila Devi. She briefed them on the purpose and intention of the group discussion and welcomed all the participants in the meeting.



Focus group discussion meeting organised in Bisalpur village regarding Diabetes control and prevention

The following questions which were included in the FGD were focused on the sugar and diabetes:

Q.1. Why have we gathered here today?

The women participants discussed with each other and stated that they had assembled to discuss about a disease related to sugar in the body.

Q.2. What are the health hazards due to diabetes in our body?

Choti Devi said that it is a dangerous disease. It results in reduced hunger and unwillingness to intake food; stated Ms. Puja. Kiran Hamara indicated laziness and weakening of body as the symptoms of diabetes.

Q.3. What do you know about diabetes and who told you about it?

Ms. Gyatri said that "People from Humana organisation told us about the disease of sugar which is characterised by frequent urination". Heena said that she has come to know about the disease from the AWW, which is caused by excessive intake of sugar by a person. All the participants stressed on the information provided by the Humana organisation regarding diabetes. They were to be made aware about the disease only through the organisation.

Q.4. What are the symptoms of diabetes?

The participants said that dizziness, pain in the body and feet, increased hunger and frequent urination are the symptoms of diabetes. Attraction of ants towards urine, excessive thirst, weakness and delayed healing of wound are other symptoms; added another participant.

Q.5. Who are at higher risk of diabetes?

Nidhi said that pregnant women and alcoholic people are at a higher risk of diabetes. Physically inactive and lazy people also possess the high risk of becoming diabetic.

Q.6. What are the precautions for the prevention of diabetes?

According to Heena, consumption of green vegetables and careful and adequate dietary habits can reduce the risk of diabetes. "Cutting down on the intake of alcohol and sweets along with a stress free lifestyle are the precautions in order to stay away from diabetes" said Puja.

Q.7. Are there any TRIO group member among the participants?

Two participants; Gayatri and Nidhi are members of a TRIO.

Q.8. What do you know about TRIO

It is a group of people which is formed by the organisation. The aim of this group is to take care of the people suffering from diabetes. The members of the group also include three members from the family of each patient. The three members of each family perform different tasks in the group.

Q.9. Do you think this activity should go on even after the completion of the project?

According to the participants the activities should be continued in the same manner. This programme is playing a vital role in awareness generation among the villagers especially among the women. If these activities are put to an end, the people will become unaware again and mainly women would come across bigger problems.

Q.10. Do you think such activities should also be extended in other blocks of Jodhpur?

The women participants believe that the programme being implemented by the Humana organisation is of vital importance for all types of communities in order to combat the problem of diabetes among the people. They also added that as their village had benefitted they wished that the same programme should be expanded in the other blocks of Jodhpur as well. They admitted that this programme has come forth with a great deal of awareness generation about the prevailing problem of diabetes among the villagers.

FGD Meeting-04

Place: Dagiyawas

Date: 16/05/2015

No. of Participants: 16

Subject: Diabetes Prevention and Control project

A focus group discussion meeting was organised regarding the Diabetes Prevention and Control project in the village Dagiyawas on 16th of May, 2015. A total of 16 female members participated voluntarily in the meeting. The meeting was commenced with consensus of all the participants. AWW; Ms. Nirmla Chaudhary chaired the meeting. Mr. Somaram welcomed all the female participants and informed them about the aim and objective of the meeting which were the discussions of sugar problems and diabetes.



Focus group discussion meeting organised in Dagiyawas village regarding diabetes control and prevention

Discussion of the meeting was based on the questions as given below:

Q.1. Why have we gathered here today?

The female participants stated collectively that they had assembled in the meeting to discuss about a disease related to higher sugar level in our body.

Q.2. What are the health hazards due to diabetes in our body?

Chooki Devi said that the body becomes weak due to diabetes and it is a dangerous disease. According to Rekha healing of wounds is delayed due to diabetes. "Our body becomes lethargic and is susceptible to other diseases as well", said Ms. Manju.

Q.3. What do you know about diabetes and who told you about it?

Ms. Rekha told "Whatever we know about diabetes has been informed by the people of Humana organisation". According to her it causes frequent urination and results from higher intake of sugar products. "We came to know that there is a disease related to sugar only after the people from 'sugar wali sanstha' informed us about it. After mutual discussion all the participants admired the role of Humana Sanstha in spreading awareness about diabetes among the villagers.

Q.4. What are the symptoms of diabetes?

As per Ms. Baiby, dizziness and irritation in the eyes are two major symptoms of diabetes. Ms. Anu added that the disease is symptomatised by pain in the feet and increased hunger. "Body pain, frequent urination and attraction of ants towards urine are also among the symptoms of a diabetic person", stated Rekha. According to Vimla excessive thirst, weakness and delayed healing of wounds are the symptoms of the disease.

Q.5. Who are at a higher risk of diabetes?

As per Baiby Vishnoi pregnant women possess higher risk of diabetes. Chooki said that those who consume extra sugar in their diet and drink a lot of alcohol are susceptible to the disease.

Q.6. What are the precautions for the prevention of diabetes?

According to Muni, one should always consume green vegetables and proper care should be taken about the eating and drinking habits. "Cutting down alcohol and sugar intake can reduce the risk of diabetes", stated Ms. Pooja.

Q.7. Are there any TRIO group member among the participants?

Among the participants only Ms. Nirmala was a TRIO member.

Q.8. What do you know about TRIO

The participants said, "TRIO is a group of people formed by the organisation with the aim of taking care of diabetic persons". Three members from each patient's family joins the group and perform different types of activities in the group. Proper care of diabetic people is the sole aim of this group".

Q.9. Do you think this activity should go on even after completion of the project?

According to participants the activities should be continued for the sake of the villagers' welfare. The members of Humana Sanstha play a vital role among villagers, in awareness generation about diabetes. As per the participants, the activities would come to an end if the programme is stopped. Villagers, especially women, may face problems. The participants said that no programme can sustain its activities unless proper monitoring is carried out.

Q.10. Do you think such activities should also be extended to other blocks of Jodhpur?

According to the female participants the programme of the Humana organisation is very important and helpful regarding the diabetes control and care of diabetic people in all types of communities. They also said that whatever interventions have been done in their villages regarding diabetes should be expanded in other blocks of the Jodhpur District as well. More people would be aware of the fatal disease and take precautions.

FGD Meeting-05

Place: Pithavas

Date: 18/05/2015

No. of Participants: 13

Subject: Diabetes Prevention and Control project

A focus group discussion meeting was organised regarding the Diabetes Prevention and Control project in the village Pitawaas on 18th of May, 2015. A total of 13 members participated in the meeting. The meeting commenced with the consensus of all the participants. Mr. Pusaram chaired the meeting. He welcomed all the participants and briefed them about the aim and objective of the discussions during the meeting.



Focus group discussion meeting organised in Pithawas village regarding diabetes control and prevention

Discussions of the meeting were based on the questions given below:

Q.1. Why have we gathered here today?

Chainaram, with the consent of all the other participants, said that they were gathered in the meeting to discuss about the disease of diabetes. They would share their opinions and suggestions about the disease.

Q.2. What are the health hazards due to diabetes in our body?

Narayan ji said, “Diabetes invites other diseases which ultimately damages our body”. According to Shyamji the body becomes lazy and vision is affected due to diabetes. He also added that itching in the body, weakness and reduced appetite are the consequences of diabetes.

Q.3. What do you know about diabetes and who told you about it?

Hemrajji said that a street play was organised in his village on the theme of diabetes. Through the play they came to know that it is a dangerous and fatal disease. As per Kishanji, there is no cure for this disease and it is caused by irregular dietary habits. The participants emphasised the role of the Humana organisation in spreading the knowledge about the disease.

Q.4. What are the symptoms of diabetes?

"Paleness in the eyes and weakening of the body are two major symptoms", stated Pusaramji. According to Babulaji frequent urination and increased appetite are the indications that a person is diabetic. Ghevaram said that a diabetic person may face healing problems of wounds, dizziness and body pain.

Q.5. Who are at a higher risk of diabetes?

Bhakarji said that any inactive and lazy person has a higher risk of developing diabetes. According to him a person who drinks alcohol is more susceptible to diabetes. "Irregular dietary habits and excessive intake of sweets are the major reasons for the risk of diabetes" said by Mr. Paburamji.

Q.6. What are the precautions for the prevention of diabetes?

Mr. Ashok suggested that a person should reduce carbohydrate and increase green vegetables in his diet in order to stay safe from diabetes. According to other participants regular and proper diet and physical exercise may reduce the risk of diabetes.

Q.7. Are there any TRIO group member among the participants?

None of the participants were members of TRIO groups.

Q.8. What do you know about TRIO

Mr. Shyam said that a member of TRIO is the 3 member group that takes care of diabetic persons. Other participants added that this group is formed by the organisation with the aim of taking care of the diabetic people. Anybody can become a member of this group.

Q.9. Do you think that this activity should go on even after completion of the project?

If these activities are concluded then the diabetic patients as well as normal people would face a big problem. Behaviour of the villagers towards diabetes would return to the original state, which was changed by the programme activities. According to the villagers this programme should continue as it had a great impact on the awareness of the people about diabetes. If this programme is put to an end the people will again become unaware and the situation may deteriorate.

Q.10. Do you think such activities should also be extended in other blocks of Jodhpur?

According to participants the same programme should be expanded in other blocks of the Jodhpur District so that more people can gain from the benefits of the programme. More people will become aware about the fatal disease and take precautions.

Conclusion on discussions with the community

It is well observed that the organisation played a major role in creating awareness in the villages. The FGD participants could recollect that diabetes is a fatal disease if not treated with an appropriate diet and prevention. The community members also mentioned that medical treatment, continuous monitoring of blood sugar and change in lifestyle can control the sugar level. Those at the borderline have also understood the importance of exercise in their daily routines and the importance of a good healthy diet which can prevent their risk of getting the disease and which needs medical intervention.

The formation of TRIOs in the community is very beneficial and this group is closely monitoring the high risk persons and helping them in prevention. The role of Shamji, who is teaching Yoga to all the patients should be mentioned. The team met him and appreciated his contribution.

Annex III

In depth interview with Dr. Saxena, Additional Director and former Chief Medical Health Officer

The project since its inception through its various initiatives like house to house visits, one to one sessions, awareness rallies, school education programme, community awareness programme, blood testing camps etc., has been able to spread the outreach of the programme.

The project got the required support from the NCD cell initially, but it slowly was phased out and now the NCD cell is not active. The cell initially helped in case detection for a very large population. The high blood glucose patients were referred for another test to rule out any wrong calculations.

According to Dr. Saxena, the best part of the project was:

1. Training of ANMs, and ASHA/AWWs.
2. Case detection and an army of personnel working in 74 villages
3. Formation of TRIO groups
4. Community based workers hence knowledge about local language was not a hurdle
5. Good street plays
6. Development of IEC material

Dr. Saxena said that this would never have been possible in the government set up and he feels that the government should support such activities. He also felt that the organisation should widen its horizon and start working on other non communicable diseases like cancer, de-addiction and other problems in the community like AIDS/TB, malaria and tobacco consumption.



Dr. Ashish Gaud, MO CHC Banad



Dr. Sharda Sharma,MO, Banwarla (Ayurvedic)

In depth Interviews

Voices of health workers and community leaders

Issues	AWW/ASHA (10)	ANM/GNM (4)	PRI Member (5)	Teacher (6)	Others (retd. army personnel, doctors and lawyers)
Do you know that a project is going on in your area to create awareness for diabetes	All AWW were aware of the project interventions	All ANM/GNMs knew the project very well and helped during camp organisation	All PRI members were aware of the project interventions	All the teachers were aware of the organisation and their work	Knew the organisation and were aware of their activities, They knew that some of the staff stays in the village but were not able to tell them about the activities in which the staff were involved.
Do you know the name of the organisation which has run this project/ activities	All were aware of HPPI but could not tell the full form, three AWW knew about the organisation working for Diabetes, however they could not tell the name	All were aware of HPPI but could not tell the full form, they knew about the organisation working for diabetes, however they could not tell the name	They knew the project not the name of the organisation, but knew that it was for care and support of diabetes	They knew the project not the name of the organisation, but knew that it was for care and support of diabetes	All knew HPPI very well
Can you name any person from the project staff	All workers knew the project staff very well	All the workers did not the name of the staff involved	None of the members knew the staff names and could not recollect	None of the teachers knew the staff names. There was an awareness class in their school for the teachers and students organised by the organisation itself.	They could recall only Shamji who was a yoga instructor at school and taught yoga to the community members who asked for help.
Who all are at risk for sugar/diabetes	All the workers had attended the camp and awareness activities conducted by the project staff and had accompanied the project staff in conducting door to door awareness activities, so that they can know who are at risk.	People who are obese, who have wrong eating habits, who drink and smoke are at the risk of developing the disease, people with family history are particularly at more risk.	None of them knew who are at risk	People who are obese, who have wrong eating habits, who drink and who smoke are at risk of developing the disease, people with family history are particularly at more risk.	People who are obese, who have wrong eating habits, who drink and who smoke are at risk of developing the disease, people with family history are particularly at more risk.

Are you at any point involved in project activities and which all activities	None	None	None	None
Are there any suggestions to improve the activities to create awareness in the community for diabetes	Regular meetings for the families with patients and follow-ups are a must to develop awareness and control of the disease	The project staff should meet regularly the families with patients and follow up is a must to develop awareness and control of the disease	Keeping away from sweets is beneficial	Continue the services and spread it to the whole district Continue the services and spread it to the whole district, women need more focus since men come on their own, women need more awareness and motivation (Dr. Ashish Gaud)
Have you ever attended the meetings on diabetes which was conducted by the project staff in last 2 years and what were the discussion points	VHSC meetings and project meetings for care and support for diabetes	Even though the ward Panch at Bisalpur mentioned that they meet the staff at the VHSC meeting and discuss about it they could not recollect the staff name but wanted the organisation to continue and work in other blocks as well.	None	None
Are you aware of the Treatment Support Group, if yes who are they and what do they do? Have you ever been a member of such treatment groups, if yes, so what have you done in this group?	Five ASHAs were members of TRIOs formed by the project staff	None	None	None
Have you developed any Diabetes Action Plan in VHSC meetings?	None	None	None	None

Conclusion of in depth interviews

The in depth interviews with ANMs, GNMs, and ASHA were very useful as they had participated in the mass drive camp of case detection. Many of them were also members of the TRIO groups. However, the PRI members were aware of the activities but since they were recruited in late 2014, they were not very well aware of the diabetes action plan of VHSC, which was a part of the project intervention. Anyhow, when the team looked at some documents available with old VHNC members, the action plan was well documented. The newly recruited PRI members took charge when the project was winding up its activities and only half the task force was active in the field.

Looking into the situation it can be concluded that the project has made its impact over the community as reflected in FGDs in the community and case studies. Meeting with teachers, lawyers, doctors and other retired members spell out that the organisation has been very active and should continue their activities not only in this block but also the whole district and not only in the area of diabetes but also other non communicable diseases such as HIV AIDS and malaria as well.



Annex IV

Indicators showing difference between baseline data and after the intervention in endline data

Sr no	Indicators (to be expressed in %)	Baseline			Endline			Related questions of the survey
		Numer-ator	Denomi-nator	%age	Numer-ator	Denomi-nator	%age	
1	Number of respondents who ever heard of diabetes/ number of people interviewed in the survey	9621	25285	38.1	393	408	96.3	Q1: Have you heard of diabetes
2	Number of respondents who knew diabetes is a disease/ number of respondents who ever heard of diabetes	2379	9621	24.7	379	393	96.4	Q3: What do you mean by diabetes?
3	Number of respondents who knew that in diabetes blood sugar becomes high/ number of respondents who knew diabetes is a disease	274	2379	11.5	212	379	55.9	Q4: What happens to the body if one has diabetes?
4	Number of respondents who knew diabetes can be detected by doing blood test/ number of respondents who knew diabetes is a disease	505	2379	21.2	271	379	71.5	Q6: How can one know if he/she has diabetes or not?
5	Number of respondents who were able to identify at least 2 symptoms of diabetes/ number of respondents who knew diabetes as a disease	302	2379	12.7	232	379	61.2	Q5: Do you know what are the symptoms of diabetes?
6	Number of respondents who knew at least 2 ways of protection from diabetes/ number of respondents who knew diabetes as a disease	313	2379	13.2	224	379	59.1	Q8: Do you know how one can protect himself/herself from diabetes?

7	Number of respondents who knew at least 2 risk factors of diabetes/ number of respondents who knew diabetes as a disease	311	2379	13.1	227	379	59.9	Q7: How can one develop diabetes? (Risk factors of diabetes)
8	Number of respondents who were tested at least once for diabetes/number of respondents who knew diabetes as a disease	510	2379	21.4	151	379	39.8	Q9: Have you ever gone through blood sugar test?
9	Number of respondents who showed high blood sugar after the test/ number of respondents who were tested at least once for diabetes	287	510	56.3	28	151	18.5	Q13: Has your doctor ever told you after the blood test that you have developed disease named 'sugar' and you need to reduce sweets, rice, potato etc. in your diet?
10	Number of respondents who have been taking oral medications for diabetes/ number of respondents who showed high blood sugar after the test	285	287	99.3	12	28	42.9	Q16: Has your doctor also given you medicine to treat your 'sugar' problems?
11	Number of respondents who have been taking 'insulin' injection for diabetes/ number of respondents who showed high blood sugar after the test	38	287	13.2	4	28	14.3	Q17: Have your doctor ever given you injections to treat your 'sugar' problems?
12	Number of respondents who are willing to advise family members with diabetes on controlling blood sugar/ number of respondents who knew diabetes as a disease	492	2379	20.7	150	379	39.6	Q20: If any of your relative or family member or colleague has a sugar problem what you advise him/her to do?
Additional indicators (for endline)								
1	Number of respondents who heard about diabetes from the project staff of Humana/ number of respondents who ever heard of Diabetes				285	393	72.5	Q2: From where have you heard of diabetes?
2	Number of respondents who got blood tested for sugar after initiation of the project/ number of persons got blood tested for sugar				131	151	86.8	Q10: When did you get blood tested for sugar/ Q9

3	Number of respondents who have a homestead garden at home/number of respondents who were suggested by the project staff to develop homestead gardens				88	246	35.8	Q18
4	Number of respondents who were suggested by the project staff to develop a homestead garden/number of respondents who ever heard of diabetes				246	393	62.6	Q18

Humana People To People India



Bristol-Myers Squibb
Foundation

Diabetes Community Care and Support Project - Jodhpur

शुगर एक खतरनाक बीमारी है। जो खान-पान व रहन-सहन से होती है। यह अनुवांशिक भी हैं।
जागरूकता जानकारी व बचाव ही उपचार है।

शुगर के कारक (कारण)

1. उच्च रक्तचाप
2. रक्त में वसा का उच्च स्तर
3. बढ़ती उम्र
4. अधिक वजन
5. माता-पिता को शुगर की बीमारी हो।
6. शराब का दीर्घकालिक सेवन।
7. निरंतर तनाव (चिंता करना)
8. गर्भावस्था के दौरान शुगर

प्रभावित अंग

हृदय, मस्तिष्क, आंखें, गुर्दे, नसे

लक्षण

1. बहुत प्यास लगना
2. बहुत भूख लगना
3. लगातार खाते रहने के बावजूद वजन का घटना
4. मूत्र बार-बार आना व उसका त्याग करना
5. आंखों से धुंधला दिखना
6. हाथों या पैरों में कम्पन व सुन्न पड़ना
7. त्वचा, आंतरिक जननांगों, मूत्र पथ, मसूड़ों में लगातार संक्रमण
8. घाव का जल्दी ठीक न होना
9. थकान व लगातार सिर दर्द
10. यौन नपुंसकता

रोकथाम व बचाव

1. नियमित रूप से व्यायाम करना, तेज चलना, तैराकी, साईकिल चलाना, योगा करना, नृत्य करना।
2. शराब का सेवन न करें। 3. धूम्रपान न करें। 4. चिंता न करें। 5. वजन को न बढ़ने दे।
6. खान-पान का ध्यान रखें, जिसमें दिन में भोजन को कम से कम 4 घंटे के अंतराल में लेवें। (कम खाएँ, परन्तु समय पर खाएँ) जंक, तेल भरे, तले हुए, अस्वास्थ्यकर भोजन न खाये।
7. घर में सब्जियाँ लगाये। 8. समय पर स्वास्थ्य परिक्षण कराते रहें व डॉक्टरों से राय लें।
9. अपने स्वास्थ्य के बारे में जागरूक रहें व शरीर का ध्यान रखें।



खान - पान

शुगर से ग्रसित लोगों को परहेज रखना :- चावल, आलू, मिठाईयाँ, केला, आम, कटहल, अंगूर, चॉकलेट, शीतल पेय, आईसक्रीम, तला हुआ तेल से भरपूर खाद्य पदार्थ, जंक फुड व शुगर के लेवल को बढ़ाने वाले पदार्थ नहीं खावें।



शुगर मरीज को घरेलू बाड़ी से लाभ

1. हरी सब्जियों से विटामिन बढ़ेगा और शुगर लेवल घटेगा। 2. शुगर मरीज के द्वारा बाड़ी से परिश्रम करने से व्यायाम होगा। तथा ताजी हवा मिलेगी। 3. शुगर मरीज बाड़ी में व्यस्त रहने से चिंता तथा तनाव मुक्त रहेगा। 4. हरी सब्जियां घर पर ताजी मिलेगी। 5. यदि बड़ी बाड़ी है तो सब्जियां बेचकर आर्थिक लाभ भी मिलेगा। 6. बाजार से सब्जियां नहीं खरीदनी पड़ेगी तथा समय पर घर में सब्जियां मिलेगी।



