



## IMPLEMENTATION OF A COMMUNITY PILOT CARDIOVASCULAR HEALTH PROGRAM

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### ABSTRACT

Mexico is currently suffering from serious problems of obesity based on data from the national survey of health - ENSANUT – 2016<sup>[1]</sup>, shows that 70% of adults aged 30-60 suffer from overweight or obesity, seven in 10 adults (prevalence combined 72.5%) continues to suffer excess weight (overweight and obesity) with respect to the number of 2012 of 71.2% The prevalence of overweight and obesity was 71.3% (overweight 38.8% and obesity 32.4%). The prevalence of abdominal adiposity was 74.0%, being higher in women (82.8%) than in men (64.5%). Over the past 12 years the mean annualized BMI percent increase was 1.3%. This increase was higher in the 2000-2006 (1%) than in the 2006-2012 (0.3%) period.<sup>[7]</sup> Of adults in Mexico, 9.17% has received a diagnosis of diabetes, with mixed results among

States: 5.6% in Chiapas to 12.3% in the Federal District. Of all diabetics, 46.95% reported also diagnosis of hypertension, 4.47% history of infarction the heart and 54.46%, family history of diabetes. Teens, 0.68% has already been diagnosed with diabetes.<sup>[6]</sup> Systemic Arterial Hypertension is currently defined as finding numbers of older blood pressure 140/90 mm Hg. This is one of the diseases that most affect the world population prevalence's found in age and gender groups 45 to 55% in men between 45 and 70 years and 45 to 65% in women of the same age group.<sup>[8]</sup> In the next article, we present the results of a pilot cardiovascular health program and how it impacts in obesity, diabetes and hypertension in a community.

**KEYWORDS:** obesity, hypertension, Diabetes.

## INTRODUCTION

Mexico is currently suffering from serious problems of obesity based on data from the national survey of health - ENSANUT – 2016<sup>[1]</sup> shows that 70% of adults aged 30-60 suffer from overweight or obesity, seven in 10 adults (prevalence combined 72.5%) continues to suffer excess weight (overweight and obesity) with respect to the number of 2012 of 71.2%<sup>[1]</sup> The prevalence of overweight and obesity was 71.3% (overweight 38.8% and obesity 32.4%). The prevalence of abdominal adiposity was 74.0%, being higher in women (82.8%) than in men (64.5%). Over the past 12 years the mean annualized BMI percent increase was 1.3%. This increase was higher in the 2000-2006 (1%) than in the 2006-2012 (0.3%) period.<sup>[7]</sup>

We observed an increase in the numbers of overweight and obesity in adult women (prevalence combined 75.6%). This increase is greater in rural areas (increase of 8.4%) than in urban areas (increase of 1.6%).<sup>[1]</sup>

In adult men (prevalence combined 69.4%) is observed a continuous increase in rural areas, where the prevalence of overweight and obesity (67.5%) increased 10.5% compared to 2012.

Other types of chronic degenerative diseases as diabetes and hypertension also have increased, as well as unhealthy lifestyles such as the lack of adequate food, sedentary lifestyle, and many other factors such as poverty, marginalization, stress, affecting the potential for good health and well-being. In the adult male population, overweight and obesity increased in rural areas (from 61.1% in 2012 to 67.5% in 2016) while stabilized in urban areas, which is maintained at an elevated level (69.9%).<sup>[1]</sup>

From all adults 20 years and older in Mexico, 9.17% has been diagnosed with diabetes, presenting an important geographical heterogeneity, ranging from 5.6% in the southern state of Chiapas, to 12.3% in Mexico City. Of all people with diabetes, 46.95% also have been diagnosed with hypertension, 4.47% has had a stroke, and 54.46%, reported family background of diabetes. Regarding adolescents, 0.68% has been already diagnosed with diabetes.<sup>[6]</sup>

SAH is currently defined as finding numbers of older blood pressure 140/90 mm Hg. This is one of the diseases that most affect the world population prevalence's found in age and gender groups 45 to 55% in men between 45 and 70 years and 45 to 65% in women of the same age group.<sup>[8]</sup>

## MATERIAL AND METHOD

The model of Health and wellness that is proposed is based on a comprehensive program. In the same way, the school of Health Sciences academic program has been involved with community outreach in the communities, to promote academic, social action and efforts of participatory research in health.

Dr. Héctor Balcázar has been developing community action research studies using community actors, such as promoters of health and well-being of the communities themselves Latino in the United States (the clear majority of Mexican origin), to promote healthy lifestyles in the population of Hispanic origin.

Likewise, it has been implementing models of action research on various parts of Mexico where health promoters have been trained to implement healthy lifestyle programs including important aspects focused in the areas of nutrition and physical activity.

### The Conceptual model of action

This model of prevention and action aims to encourage the initiative of the people living in the community. This model in its essence must belong to the community and therefore is based on developing a model that can be adopted by it and its inhabitants<sup>(2)</sup>. The model is also based on the need to develop the initiative of the same population to take part actively in the health and well-being of all. The model is also one based on social and harmonic change where new community actors (organizations, centers, corporations, municipal government) are motivated to participate in developing the common good associated with the development of the health and well-being of the community.<sup>[2,3]</sup>

Health and well-being defined it in this proposal as the potentiation of optimizing physical, mental, social and community aspects of health. Not only as the absence of disease. In this context of proposal work, health and well-being are central part of the rights of all the inhabitants.<sup>[9,11]</sup>

Because of the actions in a new concept of health and harmonic wellness, the term of illness changes to promote the idea of empowering individuals, health and well-being and thus develop positive elements to the model of health and wellness implemented as a new Community philosophy.<sup>[12,13,14]</sup>

**Action research design**

The pilot study is covered for a period of nine months to develop in two stages:

- (1) Recruit health promoters
- (2) Implementing and evaluating the activities of the pilot project.

Action research design is based on the implementation of a cross-sectional study without a control group and evaluation type pre-post at the beginning of the program (baseline line pre), at 3 months and 6 months once finished (data post intervention) program.

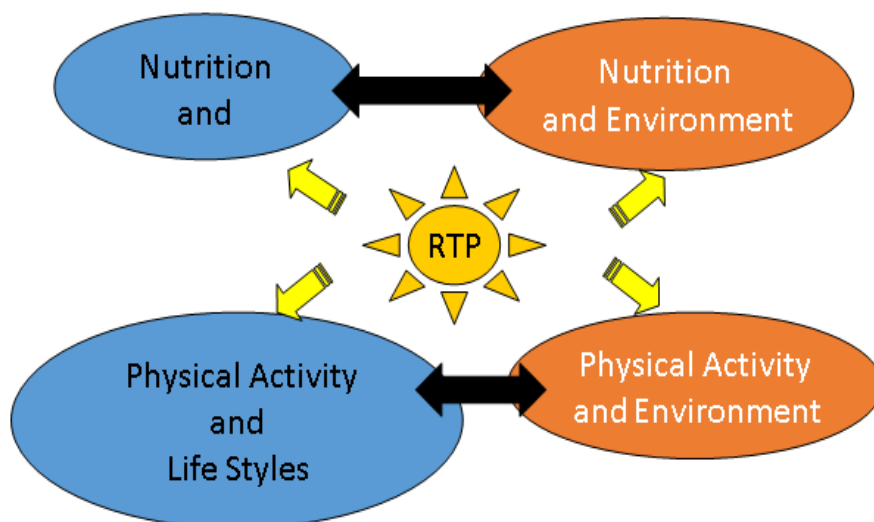
**First stage****Recruitment and training of promoters (RTP)**

The recruitment process will take place with the support of the UABC-VP which has identified women and men who can be advocates for this pilot study with the various programs carried out in the communities. A total of 25 Promoters were recruited. This recruitment took place over a period of 3 months.

The 25 Promoters training lasted 35 hours and was done in a week. This training was supervised by the Center for Health Sciences and Charles R. Drew University of Medicine and Science and is based on similar studies that have been made in many places in the United States and Mexico (Balcazar, and collaborators, 2005, 2006, 2009, 2010; 2012). The training consists of reviewing in detail the activities of the program that was validated and implemented in El Paso, Texas as a research funded by the national institutes of health of the United States (NIH) which had 5 years of duration<sup>(4)</sup>. The name of the Program is My heart My Life (MhMI), and includes 9 educational modules this can be consulted on the web site.<sup>[5]</sup>

**Second stage**

Implement and evaluate the activities of the pilot project. Figure 1 shows the elements that will be evaluated at this stage.



**Figure 1: Elements to consider for evaluation.**

To evaluate these four objectives and its components (effects of the pilot program in different actions of process such as: team alliances established and the interaction with the community;) The actions of the promoters of health in relation to their work; the satisfaction of the participants in relation to the program and its components): evaluate the collaboration and the success of the program My heart, My life with other institutional programs.

We used accepted conventional statistical methods were used to measure, relations and establish intervention (MhMI) effects pre-post, considering covariant control factors to establish statistically significant effects. This will be also a collaborative effort for data capture post implementation of the program MhMI once completed the 6 months of duration of the pilot program.

Characteristics of this type of research is only required to analyze the data base of the institution where the participants come to controlled their hypertension and diabetes. The only thing that we obtained from volunteers in the database of the institution for the program are its figures of blood pressure, blood glucose and index of mass body, at the beginning, at 3 months and at the end of the program.<sup>[15,16,17,18]</sup>

### **Second stage**

Action research design is based on the implementation of a cross-sectional study without a control group. And with evaluation type pre-post at the beginning of the program (baseline line pre) and 6 months once the program (post intervention data).<sup>[19,20]</sup>

**RESULTS AND DISCUSSION**

In table 1 we present the study group in which we carried out our program, with the basic parameters that we evaluated to see if the program impacted the values, 28.24% were males and 71.76% were females, the weight of the participants fluctuated between 42.1 to 132 Kg, average weight of the group was 75.23Kg, average systolic pressure was 126.9 and diastolic 79 mmHg, Glucose levels were 149 mg/dL. The average Mass Index was 31.34.

**Table 1: Study Group.**

Control	AGE	DATE	WEIGHT	IMC	Systolic	Diastolic	Glucose	Colesterol	Tg
			(Kg)		Pressure	Pressure			
1	50	06/05/2017	74	32.89	115	85	120	225	289
2	41	06/02/2017	77	31.64	110	70	ND	ND	ND
3	77	07/02/2017	56	24.89	126	70	ND	147	ND
4	53	08/02/2017	83	27.1	110	69	235	ND	117
5	43	09/02/2017	100	36.73	114	70	168	ND	ND
6	66	10/02/2017	56	25.57	155	66	ND	ND	ND
7	40	11/02/2017	74	32.89	130	88	ND	ND	ND
8	56	12/02/2017	52	26.53	130	70	214	ND	ND
9	53	13/02/2017	85	30.48	110	80	ND	ND	ND
10	74	14/02/2017	76	29.69	120	70	205	ND	ND
11	61	15/02/2017	68	31.04	130	70	143	ND	ND
12	30	16/02/2017	71	32.41	130	80	331	ND	ND
13	64	17/02/2017	81	35.06	145	80	ND	248	ND
14	51	18/02/2017	68.1	27.63	125	90	ND	ND	271
15	37	19/02/2017	71	29.17	115	80	150	ND	ND
16	59	20/02/2017	73	30.78	126	70	104	ND	ND
17	66	21/02/2017	80	34.63	130	80	118	ND	ND
18	50	22/02/2017	65	26.04	118	80	ND	200	ND
19	75	23/02/2017	73	30	120	74	ND	ND	97
20	70	24/02/2017	80	30.11	110	70	ND	194	ND
21	75	25/02/2017	66	28.57	110	70	105	148	125
22	66	26/02/2017	59	28.85	110	80	ND	ND	103
23	72	27/02/2017	58	28.76	120	70	89	ND	ND
24	77	28/02/2017	87	30.82	120	70	108	ND	ND
25	54	01/03/2017	97	36.06	120	80	215	ND	ND
26	54	02/03/2017	102	35.29	128	80	92	ND	ND
27	56	03/03/2017	105.5	42.26	110	85	ND	ND	ND
28	71	04/03/2017	85	31.6	120	80	133	ND	ND
29	83	05/03/2017	72	29.21	110	70	142	ND	ND
30	57	06/03/2017	71	29.17	120	80	99	177	ND
31	40	07/03/2017	67	27.18	120	80	120	ND	149
32	33	08/03/2017	67.5	25.1	145	80	130	150	ND
33	45	09/03/2017	73	30.78	140	80	282	143	148
34	51	10/03/2017	77	28.63	160	80	ND	ND	370
35	70	11/03/2017	105	35.49	110	100	ND	249	ND
36	74	12/03/2017	74	28.2	120	70	ND	ND	166

37	58	13/03/2017	85	33.2	130	70	ND	ND	ND
38	50	14/03/2017	68	22.99	120	70	396	ND	ND
39	89	15/03/2017	58	25.78	130	80	128	ND	ND
40	52	16/03/2017	100	34.6	140	80	ND	ND	ND
41	90	17/03/2017	87	28.74	140	90	97	ND	ND
42	61	18/03/2017	92	35.49	130	90	152	ND	ND
43	85	19/03/2017	53	24.2	110	90	130	ND	ND
44	71	20/03/2017	97	36.51	130	70	ND	ND	ND
45	72	21/03/2017	89.9	31.85	140	85	114	ND	ND
46	52	22/03/2017	79	34.65	130	90	161	ND	ND
47	54	23/03/2017	112	43.75	140	80	150	ND	ND
48	70	24/03/2017	101	31.88	130	90	ND	153	ND
49	67	25/03/2017	135	44.08	135	80	130	130	197
50	44	26/03/2017	83	32.42	125	97	171	131	203
51	63	27/03/2017	82	28.37	130	80	178	ND	144
52	64	28/03/2017	85	27.13	110	80	ND	100	ND
53	65	29/03/2017	91	30.41	110	80	109	ND	50
54	49	30/03/2017	149	47.56	140	60	107	ND	ND
55	82	31/03/2017	45	19.48	110	84	271	ND	ND
56	63	01/04/2017	72	26.13	80	80	122	ND	ND
57	63	02/04/2017	84	37.33	120	60	139	ND	ND
58	47	03/04/2017	78	37.1	130	80	149	ND	ND
59	50	04/04/2017	68	29.82	140	90	164	ND	ND
60	65	05/04/2017	83	36.4	110	70	242	ND	ND
61	61	06/04/2017	71	31.14	120	70	105	ND	ND
62	64	07/04/2017	71.5	31.36	140	84	96	149	ND
63	54	08/04/2017	71	27.05	110	90	124	ND	500
64	45	09/04/2017	63	25.24	120	70	153	182	ND
65	53	10/04/2017	82	36.44	116	75	ND	ND	194
66	45	11/04/2017	60	27.39	118	62	102	ND	ND
67	36	12/04/2017	55	24.44	100	58	147	ND	ND
68	59	13/04/2017	82	30.12	120	70	111	ND	ND
69	67	14/04/2017	63	26.91	140	80	82	ND	ND
70	73	15/04/2017	77	28.63	110	90	131	ND	ND
71	68	16/04/2017	68	26.23	130	70	ND	ND	ND
72	59	17/04/2017	72	31.16	120	80	122	ND	ND
73	61	18/04/2017	83	34.11	120	80	302	ND	ND
74	63	19/04/2017	135	39.02	150	80	174	ND	ND
75	45	20/04/2017	82	33.69	120	90	ND	230	ND
76	61	21/04/2017	57	23.12	130	80	172	ND	206
77	73	22/04/2017	68	27.59	120	70	ND	ND	ND
78	67	23/04/2017	69	29.09	120	80	ND	ND	ND
79	82	24/04/2017	86.5	37.44	135	80	ND	211	ND
80	61	25/04/2017	53	23.24	170	80	ND	ND	ND
81	77	26/04/2017	60	24.03	118	90	ND	ND	ND
82	98	27/04/2017	92	30.39	145	61	121	ND	ND
83	63	28/04/2017	84	37.33	110	80	114	ND	ND
84	85	29/04/2017	84	29.76	140	80	101	142	ND

85	57	30/04/2017	69.5	28.93	100	80	204	200	33
86	76	01/05/2017	92	34.21	130	70	143	ND	155
87	35	02/05/2017	103	46.39	110	87	ND	ND	ND
88	54	03/05/2017	73	31.6	130	70	ND	ND	ND
89	68	04/05/2017	59	21.41	130	90	ND	ND	ND
90	38	05/05/2017	85	34.05	130	75	80	ND	ND
91	58	06/05/2017	78	27.97	130	80	230	ND	ND
92	59	07/05/2017	88	33.12	130	60	247	ND	ND
93	49	08/05/2017	77	30.46	120	80	ND	ND	ND
94	77	09/05/2017	69	26.29	110	80	ND	ND	ND
95	36	10/05/2017	70	34.23	130	80	240	ND	ND
96	37	11/05/2017	64	28.07	110	80	ND	ND	ND
97	54	12/05/2017	64	30.86	120	70	227	ND	ND
98	59	13/05/2017	59	25.54	120	80	111	ND	ND
99	59	14/05/2017	58	26.48	140	80	ND	ND	ND
100	39	15/05/2017	105	39.04	125	70	165	ND	ND
101	62	16/05/2017	72	25.21	130	80	97	ND	ND
102	61	17/05/2017	75.5	27.73	135	80	ND	137	ND
103	29	18/05/2017	87.5	33.34	125	90	ND	252	70
104	64	19/05/2017	107	36.17	120	70	ND	ND	ND
105	55	20/05/2017	48	21.33	130	80	107	ND	ND
106	70	21/05/2017	100	46.91	110	80	142	ND	ND
107	54	22/05/2017	77	34.22	145	80	158	ND	ND
108	62	23/05/2017	103	32.88	135	82	220	ND	ND
109	53	24/05/2017	76	28.96	120	87	111	ND	ND
110	58	25/05/2017	66	27.47	120	80	130	171	ND
111	59	26/05/2017	78	37.62	110	70	148	ND	120
112	82	27/05/2017	57	29.93	140	70	161	ND	ND
113	63	28/05/2017	73	34.72	110	70	ND	ND	ND
114	52	29/05/2017	75.5	31.02	110	70	ND	ND	ND
115	52	30/05/2017	96	35.69	130	70	97	168	ND
116	63	31/05/2017	75	26.57	168	80	ND	ND	78
117	54	01/06/2017	75	32.46	115	83	110	ND	ND
118	56	02/06/2017	61.5	29.66	125	75	ND	ND	ND
119	70	03/06/2017	71	34.24	110	70	258	140	ND
120	69	04/06/2017	73	32.02	110	70	133	ND	171
121	70	05/06/2017	78	27.64	120	70	122	ND	ND
122	63	06/06/2017	124.5	48.63	125	80	ND	ND	ND
123	68	07/06/2017	73.5	32.67	110	80	110	126	ND
124	79	08/06/2017	93	29.35	120	80	113	139	91
125	44	09/06/2017	85	25.11	120	70	98	ND	228
126	50	10/06/2017	59	21.41	140	80	187	ND	ND
127	65	11/06/2017	108	36.09	130	90	108	ND	ND
128	71	12/06/2017	68	31.47	130	90	124	ND	ND
129	35	13/06/2017	79	28.67	150	70	121	ND	ND
130	64	14/06/2017	79	30.1	140	80	180	ND	ND
131	68	15/06/2017	86	32.77	100	90	169	100	ND
<b>ND: No Data</b>									



In Table 2 we present the findings after three months we found the following results:

The group index Mass was 30.86 a decrease of 0.48, systolic pressure 122.7 a decrease of 4.22 mmHg, 77.1 mm Hg diastolic pressure a decrease of 1.9 mmHg, glucose level 152.8 mg/dL a decrease of 3.8 mg/dL. Their attitude toward their weight, hypertension and diabetes was more open to follow suggestions to continue changing their lifestyles toward being more conscious about their diet, changing the way to prepared their food and been more physically active. Even their weight which increased an average of 2.1Kg in the group they continued on the program.

**Table 2: Three Month Evaluation.**

Control	AGE	DATE	WEIGHT	IMC	Systolic	Diastolic	Glucose	Colesterol	Tg
			(Kg)		Pressure	Pressure			
1	50	06/09/2017	74	32.89	115	85	120	225	289
2	41	07/09/2017	77	31.64	110	70	ND	ND	ND
3	77	08/09/2017	56	24.89	126	70	ND	147	ND
4	53	09/09/2017	83	27.1	110	69	235	ND	117
5	43	10/09/2017	100	36.73	114	70	168	ND	ND
6	66	11/09/2017	56	25.57	155	66	ND	ND	ND
7	40	12/09/2017	74	32.89	130	88	ND	ND	ND
8	56	13/09/2017	52	26.53	130	70	214	ND	ND
9	53	14/09/2017	85	30.48	110	80	ND	ND	ND
10	74	15/09/2017	76	29.69	120	70	205	ND	ND
11	61	16/09/2017	68	31.04	130	70	143	ND	ND
12	30	17/09/2017	71	32.41	130	80	331	ND	ND
13	64	18/09/2017	81	35.06	145	80	ND	248	ND
14	51	19/09/2017	68.1	27.63	125	90	ND	ND	271
15	37	20/09/2017	71	29.17	115	80	150	ND	ND
16	59	21/09/2017	73	30.78	126	70	104	ND	ND
17	66	22/09/2017	80	34.63	130	80	118	ND	ND
18	50	23/09/2017	65	26.04	118	80	ND	200	ND
19	75	24/09/2017	73	30	120	74	ND	ND	97
20	70	25/09/2017	80	30.11	110	70	ND	194	ND
21	75	26/09/2017	66	28.57	110	70	105	148	125
22	66	27/09/2017	59	28.85	110	80	ND	ND	103
23	72	28/09/2017	58	28.76	120	70	89	ND	ND
24	77	29/09/2017	87	30.82	120	70	108	ND	ND
25	54	30/09/2017	97	36.06	120	80	215	ND	ND
26	54	01/09/2017	102	35.29	128	80	92	ND	ND
27	56	02/09/2017	105.5	42.26	110	85	ND	ND	ND
28	71	03/09/2017	85	31.6	120	80	133	ND	ND
29	83	04/09/2017	72	29.21	110	70	142	ND	ND
30	57	05/09/2017	71	29.17	120	80	99	177	ND
31	40	06/09/2017	67	27.18	120	80	120	ND	149

32	33	07/09/2017	67.5	25.1	145	80	130	150	ND
33	45	08/09/2017	73	30.78	140	80	282	143	148
34	51	09/09/2017	77	28.63	160	80	ND	ND	370
35	70	10/09/2017	105	35.49	110	100	ND	249	ND
36	74	11/09/2017	74	28.2	120	70	ND	ND	166
37	58	12/09/2017	85	33.2	130	70	ND	ND	ND
38	50	13/09/2017	68	22.99	120	70	396	ND	ND
39	89	14/09/2017	58	25.78	130	80	128	ND	ND
40	52	15/09/2017	100	34.6	140	80	ND	ND	ND
41	90	16/09/2017	87	28.74	140	90	97	ND	ND
42	61	17/09/2017	92	35.49	130	90	152	ND	ND
43	85	18/09/2017	53	24.2	110	90	130	ND	ND
44	71	19/09/2017	97	36.51	130	70	ND	ND	ND
45	72	20/09/2017	89.9	31.85	140	85	114	ND	ND
46	52	21/09/2017	79	34.65	130	90	161	ND	ND
47	54	22/09/2017	112	43.75	140	80	150	ND	ND
48	70	23/09/2017	101	31.88	130	90	ND	153	ND
49	67	24/09/2017	135	44.08	135	80	130	130	197
50	44	25/09/2017	83	32.42	125	97	171	131	203
51	63	26/09/2017	82	28.37	130	80	178	ND	144
52	64	27/09/2017	85	27.13	110	80	ND	100	ND
53	65	28/09/2017	91	30.41	110	80	109	ND	50
54	49	29/09/2017	149	47.56	140	60	107	ND	ND
55	82	30/09/2017	45	19.48	110	84	271	ND	ND
56	63	01/09/2017	72	26.13	80	80	122	ND	ND
57	63	02/09/2017	84	37.33	120	60	139	ND	ND
58	47	03/09/2017	78	37.1	130	80	149	ND	ND
59	50	04/09/2017	68	29.82	140	90	164	ND	ND
60	65	05/09/2017	83	36.4	110	70	242	ND	ND
61	61	06/09/2017	71	31.14	120	70	105	ND	ND
62	64	07/09/2017	71.5	31.36	140	84	96	149	ND
63	54	08/09/2017	71	27.05	110	90	124	ND	500
64	45	09/09/2017	63	25.24	120	70	153	182	ND
65	53	10/09/2017	82	36.44	116	75	ND	ND	194
66	45	11/09/2017	60	27.39	118	62	102	ND	ND
67	36	12/09/2017	55	24.44	100	58	147	ND	ND
68	59	13/09/2017	82	30.12	120	70	111	ND	ND
69	67	14/09/2017	63	26.91	140	80	82	ND	ND
70	73	15/09/2017	77	28.63	110	90	131	ND	ND
71	68	16/09/2017	68	26.23	130	70	ND	ND	ND
72	59	17/09/2017	72	31.16	120	80	122	ND	ND
73	61	18/09/2017	83	34.11	120	80	302	ND	ND
74	63	19/09/2017	135	39.02	150	80	174	ND	ND
75	45	20/09/2017	82	33.69	120	90	ND	230	ND
76	61	21/09/2017	57	23.12	130	80	172	ND	206
77	73	22/09/2017	68	27.59	120	70	ND	ND	ND
78	67	23/09/2017	69	29.09	120	80	ND	ND	ND
79	82	24/09/2017	86.5	37.44	135	80	ND	211	ND

80	61	25/09/2017	53	23.24	170	80	ND	ND	ND
81	77	26/09/2017	60	24.03	118	90	ND	ND	ND
82	98	27/09/2017	92	30.39	145	61	121	ND	ND
83	63	28/09/2017	84	37.33	110	80	114	ND	ND
84	85	29/09/2017	84	29.76	140	80	101	142	ND
85	57	30/09/2017	69.5	28.93	100	80	204	200	33
86	76	01/09/2017	92	34.21	130	70	143	ND	155
87	35	02/09/2017	103	46.39	110	87	ND	ND	ND
88	54	03/09/2017	73	31.6	130	70	ND	ND	ND
89	68	04/09/2017	59	21.41	130	90	ND	ND	ND
90	38	05/09/2017	85	34.05	130	75	80	ND	ND
91	58	06/09/2017	78	27.97	130	80	230	ND	ND
92	59	07/09/2017	88	33.12	130	60	247	ND	ND
93	49	08/09/2017	77	30.46	120	80	ND	ND	ND
94	77	09/09/2017	69	26.29	110	80	ND	ND	ND
95	36	10/09/2017	70	34.23	130	80	240	ND	ND
96	37	11/09/2017	64	28.07	110	80	ND	ND	ND
97	54	12/09/2017	64	30.86	120	70	227	ND	ND
98	59	13/09/2017	59	25.54	120	80	111	ND	ND
99	59	14/09/2017	58	26.48	140	80	ND	ND	ND
100	39	15/09/2017	105	39.04	125	70	165	ND	ND
101	62	16/09/2017	72	25.21	130	80	97	ND	ND
102	61	17/09/2017	75.5	27.73	135	80	ND	137	ND
103	29	18/09/2017	87.5	33.34	125	90	ND	252	70
104	64	19/09/2017	107	36.17	120	70	ND	ND	ND
105	55	20/09/2017	48	21.33	130	80	107	ND	ND
106	70	21/09/2017	100	46.91	110	80	142	ND	ND
107	54	22/09/2017	77	34.22	145	80	158	ND	ND
108	62	23/09/2017	103	32.88	135	82	220	ND	ND
109	53	24/09/2017	76	28.96	120	87	111	ND	ND
110	58	25/09/2017	66	27.47	120	80	130	171	ND
111	59	26/09/2017	78	37.62	110	70	148	ND	120
112	82	27/09/2017	57	29.93	140	70	161	ND	ND
113	63	28/09/2017	73	34.72	110	70	ND	ND	ND
114	52	29/09/2017	75.5	31.02	110	70	ND	ND	ND
115	52	30/09/2017	96	35.69	130	70	97	168	ND
116	63	01/10/2017	75	26.57	168	80	ND	ND	78
117	54	02/10/2017	75	32.46	115	83	110	ND	ND
118	56	03/10/2017	61.5	29.66	125	75	ND	ND	ND
119	70	04/10/2017	71	34.24	110	70	258	140	ND
120	69	05/10/2017	73	32.02	110	70	133	ND	171
121	70	06/10/2017	78	27.64	120	70	122	ND	ND
122	63	07/10/2017	124.5	48.63	125	80	ND	ND	ND
123	68	08/10/2017	73.5	32.67	110	80	110	126	ND
124	79	09/10/2017	93	29.35	120	80	113	139	91
125	44	10/10/2017	85	25.11	120	70	98	ND	228
126	50	11/10/2017	59	21.41	140	80	187	ND	ND
127	65	12/10/2017	108	36.09	130	90	108	ND	ND

128	71	13/10/2017	68	31.47	130	90	124	ND	ND
129	35	14/10/2017	79	28.67	150	70	121	ND	ND
130	64	15/10/2017	79	30.1	140	80	180	ND	ND
131	68	16/10/2017	86	32.77	100	90	169	100	ND
<b>ND: No Data</b>									

**Table 3: Six Month Evaluation.**

Control	AGE	DATE	WEIGHT	IMC	Systolic	Diastolic	Glucose	Colesterol	Tg
			(Kg)		Pressure	Pressure			
1	50	06/12/2017	73.9	32	115	80	100	205	250
2	41	07/12/2017	77	31.64	110	70	ND	ND	ND
3	77	08/12/2017	56	24.89	115	70	ND	147	ND
4	53	09/12/2017	83	27.1	110	69	198	ND	117
5	43	10/12/2017	98	30.73	120	70	168	ND	ND
6	66	11/12/2017	56	25.57	155	66	ND	ND	ND
7	40	12/12/2017	74	32.89	130	88	ND	ND	ND
8	56	13/12/2017	52	26.53	130	70	214	ND	ND
9	53	14/12/2017	84	29.48	110	80	115	ND	ND
10	74	15/12/2017	76	29.69	120	70	205	ND	ND
11	61	16/12/2017	65	29.04	125	70	133	ND	ND
12	30	17/12/2017	71	32.41	130	80	331	ND	ND
13	64	18/12/2017	79	31.06	130	80	115	218	ND
14	51	19/12/2017	68.1	27.63	125	90	ND	ND	271
15	37	20/12/2017	71	29.17	115	80	150	ND	ND
16	59	21/12/2017	73	30.78	126	70	104	ND	ND
17	66	22/12/2017	78	30.63	120	75	108	ND	ND
18	50	23/12/2017	65	26.04	118	80	ND	200	ND
19	75	24/12/2017	71	29	120	74	ND	ND	97
20	70	25/12/2017	78	29.19	110	70	ND	194	ND
21	75	26/12/2017	66	28.57	110	70	105	148	125
22	66	27/12/2017	59	28.85	110	80	ND	ND	103
23	72	28/12/2017	58	28.76	120	70	89	ND	ND
24	77	29/12/2017	86	29.82	120	70	108	ND	ND
25	54	30/12/2017	91	30.06	115	80	178	ND	ND
26	54	31/12/2017	99	29.99	120	70	92	ND	ND
27	56	01/01/2018	100.2	31.26	110	80	ND	ND	ND
28	71	02/01/2018	85	31.6	120	80	133	ND	ND
29	83	03/01/2018	72	29.21	110	70	142	ND	ND
30	57	04/01/2018	71	29.17	120	80	99	177	ND
31	40	05/01/2018	67	27.18	120	80	120	ND	149
32	33	06/01/2018	67.5	25.1	145	80	130	150	ND
33	45	07/01/2018	73	30.78	140	80	282	143	148
34	51	08/01/2018	77	28.63	160	80	ND	ND	370
35	70	09/01/2018	100	30.49	110	85	ND	179	ND
36	74	10/01/2018	74	28.2	120	70	ND	ND	166
37	58	11/01/2018	82	29.2	125	70	ND	ND	ND
38	50	12/01/2018	68	22.99	120	70	289	ND	ND
39	89	13/01/2018	58	25.78	130	80	128	ND	ND

40	52	14/01/2018	98	30.6	130	75	ND	ND	ND
41	90	15/01/2018	87	28.74	140	90	97	ND	ND
42	61	17/12/2017	89	29.49	120	80	122	ND	ND
43	85	18/12/2017	53	24.2	110	90	130	ND	ND
44	71	19/12/2017	89	30.51	120	70	ND	ND	ND
45	72	20/12/2017	81.9	28.85	120	75	100	ND	ND
46	52	21/12/2017	75	30.65	125	85	121	ND	ND
47	54	22/12/2017	101	31.75	120	80	101	ND	ND
48	70	23/12/2017	94	26.88	120	80	ND	153	ND
49	67	24/12/2017	115	31.08	130	80	100	130	197
50	44	25/12/2017	83	32.42	125	97	171	131	203
51	63	26/12/2017	82	28.37	130	80	178	ND	144
52	64	27/12/2017	85	27.13	110	80	ND	100	ND
53	65	28/12/2017	91	30.41	110	80	109	ND	50
54	49	29/12/2017	121	32.56	130	70	107	ND	ND
55	82	30/12/2017	45	19.48	110	84	271	ND	ND
56	63	31/12/2017	72	26.13	80	80	122	ND	ND
57	63	01/01/2018	84	37.33	120	60	139	ND	ND
58	47	02/01/2018	78	37.1	130	80	149	ND	ND
59	50	03/01/2018	68	29.82	140	90	164	ND	ND
60	65	04/01/2018	83	36.4	110	70	242	ND	ND
61	61	05/01/2018	71	31.14	120	70	105	ND	ND
62	64	06/01/2018	71.5	31.36	140	84	96	149	ND
63	54	07/01/2018	71	27.05	110	90	124	ND	500
64	45	08/01/2018	63	25.24	120	70	153	182	ND
65	53	09/01/2018	82	36.44	116	75	ND	ND	194
66	45	10/01/2018	60	27.39	118	62	102	ND	ND
67	36	11/01/2018	55	24.44	100	58	147	ND	ND
68	59	12/01/2018	82	30.12	120	70	111	ND	ND
69	67	13/01/2018	63	26.91	140	80	82	ND	ND
70	73	14/01/2018	77	28.63	110	90	131	ND	ND
71	68	15/01/2018	68	26.23	130	70	ND	ND	ND
72	59	16/01/2018	72	31.16	120	80	122	ND	ND
73	61	17/01/2018	80	29.11	120	80	302	ND	ND
74	63	18/01/2018	115	30.02	135	80	174	ND	ND
75	45	19/01/2018	82	33.69	120	90	ND	230	ND
76	61	20/01/2018	57	23.12	130	80	172	ND	206
77	73	21/01/2018	68	27.59	120	70	ND	ND	ND
78	67	22/01/2018	69	29.09	120	80	ND	ND	ND
79	82	23/01/2018	82.5	30.44	135	80	ND	199	ND
80	61	24/01/2018	53	23.24	170	80	ND	ND	ND
81	77	25/01/2018	60	24.03	118	90	ND	ND	ND
82	98	26/01/2018	92	30.39	145	61	121	ND	ND
83	63	27/01/2018	84	37.33	110	80	114	ND	ND
84	85	28/01/2018	84	29.76	140	80	101	142	ND
85	57	29/01/2018	69.5	28.93	100	80	204	200	33
86	76	30/01/2018	92	34.21	130	70	143	ND	155
87	35	31/01/2018	92	31.39	110	80	ND	ND	ND

88	54	01/02/2018	73	31.6	130	70	ND	ND	ND
89	68	02/02/2018	59	21.41	130	90	ND	ND	ND
90	38	03/02/2018	85	34.05	130	75	80	ND	ND
91	58	04/02/2018	78	27.97	130	80	230	ND	ND
92	59	05/02/2018	88	33.12	130	60	247	ND	ND
93	49	06/02/2018	77	30.46	120	80	ND	ND	ND
94	77	07/02/2018	69	26.29	110	80	ND	ND	ND
95	36	08/02/2018	70	34.23	130	80	240	ND	ND
96	37	09/02/2018	64	28.07	110	80	ND	ND	ND
97	54	10/01/2018	64	30.86	120	70	227	ND	ND
98	59	11/01/2018	59	25.54	120	80	111	ND	ND
99	59	12/01/2018	58	26.48	140	80	ND	ND	ND
100	39	13/01/2018	105	39.04	125	70	165	ND	ND
101	62	14/01/2018	72	25.21	130	80	97	ND	ND
102	61	15/01/2018	75.5	27.73	135	80	ND	137	ND
103	29	16/01/2018	82.5	28.34	125	80	ND	168	70
104	64	17/01/2018	99.9	30.17	120	70	ND	ND	ND
105	55	18/01/2018	48	21.33	130	80	107	ND	ND
106	70	19/01/2018	90.89	31.91	110	80	102	ND	ND
107	54	20/01/2018	71	28.06	135	80	118	ND	ND
108	62	21/01/2018	103	32.88	135	82	220	ND	ND
109	53	22/01/2018	76	28.96	120	87	111	ND	ND
110	58	23/01/2018	66	27.47	120	80	130	171	ND
111	59	24/01/2018	70.9	29.62	110	70	98	ND	120
112	82	25/01/2018	57	29.93	140	70	161	ND	ND
113	63	26/01/2018	69.9	30.72	110	70	ND	ND	ND
114	52	27/01/2018	71	28.02	110	70	ND	ND	ND
115	52	28/01/2018	89.9	29.69	125	70	97	168	ND
116	63	29/01/2018	75	26.57	168	80	ND	ND	78
117	54	30/01/2018	71	29.46	115	83	110	ND	ND
118	56	31/01/2018	61.5	29.66	125	75	ND	ND	ND
119	70	01/02/2018	69	29.24	110	70	258	140	ND
120	69	02/02/2018	71	30.02	110	70	133	ND	171
121	70	03/02/2018	78	27.64	120	70	122	ND	ND
122	63	04/02/2018	114.5	33.63	125	75	ND	ND	ND
123	68	05/02/2018	69	29.67	110	80	98	126	ND
124	79	06/02/2018	90	26.23	120	80	100	139	91
125	44	07/02/2018	85	25.11	120	70	98	ND	228
126	50	08/02/2018	59	21.41	140	80	187	ND	ND
127	65	09/02/2018	99	30.09	120	80	99	ND	ND
128	71	10/02/2018	62	27.47	125	80	104	ND	ND
129	35	11/02/2018	79	28.67	150	70	121	ND	ND
130	64	12/02/2018	79	30.1	140	80	180	ND	ND
131	68	13/02/2018	80	29.77	100	80	122	100	ND
<b>ND: No Data</b>									

In Table 3 after six months we found the following results:

The group index Mass was 29.18 a decrease of 1.67, systolic pressure 123 a. increase of 0.30 mmHg, 76.87 mm Hg diastolic pressure a decrease of 0.13 mmHg, glucose level 122.7 mg/dL a decrease of 36 mg/dL. Their attitude toward their weight, hypertension and diabetes was more open to follow suggestions to continue changing their lifestyles toward being more conscious about their diet, changing the way to prepared their food and been more physically active. Their average weight was 76.54Kg they presented a decrease of 0.79 Kg. They are more aware of the importance of nutrition, exercise and the way to prepare what they eat.

In table 4 we present a comparison of the parameters use to evaluate the time frame of the program.

Table 4					
Parametres comparison					
	Weight (Kg)	Index mass	Sistolic P(mmHg)	Diastolic P(mmHg)	Glucose(mg/dL)
Control	75.23	31.34	126.9	79	149
3 months	77.33	30.86	122.7	77.1	152.8
6 months	76.54	29.18	123	76.8	122.7

We obtain a reduction in the index mass of 2.13, systolic pressure of 3.9 mmHg, diastolic pressure of 2.2mmHg and levels of glucose of 26.3 mg/dL, we observed an increase in weight of 1.31Kg in regard with the initial weight of the study, but a decrease with respect to the third month of 0.79Kg.

## CONCLUSIONS

Public health interventions should be evaluated more comprehensively than has traditionally been done Dimensions such as reach, adoption, and implementation are crucial in evaluating programs intended for wide-scale dissemination. The evidence from health promotion programs employing a community-based structure suggests that achieving behavioral and health change across an entire community is a challenging goal that many programs have failed to attain. The results that we obtained shows that changes in the preparation of common foods, exercise and the involment of family has an positive impact on the health of a person. As we so a decrease in index mass, systolic and diastolic pressure and glucose in the study group.

Implementation of a comprehensive intervention model, targeting the social environment as well as individual factors affecting health behaviors and health could produce a wider impact

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