

**FINAL REPORT**

**(24<sup>TH</sup> AUGUST TO 31<sup>ST</sup> NOVEMBER 2015)**

**TOWARDS BUILDING AN AGE FRIENDLY COMMUNITY AT  
NEW BARRACKPORE, KOLKATA, WEST BENGAL**



**SELF MANAGEMENT AND COMMUNITY INITIATIVE FOR JOINT PAINS AND  
HYPERTENSION IN OLDER WOMEN**



## CONTENTS

1. Project team
2. Background
3. Project Area
4. Project objectives
5. Methodology
6. Results
7. Discussion
8. Conclusion
9. References
10. Acknowledgement



### 1. PROJECT TEAM:

NAME	PHONE NO.	EMAIL ID	PRESENT ADDRESS	PERMENENT ADDRESS	DESIGNATED
Alakananda Banerjee	9811020093	<a href="mailto:dharmadfi@gmail.com">dharmadfi@gmail.com</a>	66-A, Street No 2, Krishna Nagar, Safdarjang Enclave, New Delhi-110029	New Delhi	Project Director
Basab Kumar Bandyopadhyay	9582322562	<a href="mailto:bkban17@gmail.com">bkban17@gmail.com</a>	B 8/126 Kendriya Vihar, Behind Haldiram, VIP Road, Kolkata	Kolkata, West Bengal	Project Coordinator
Robins Kumar	9910848401	<a href="mailto:robins.342@gmail.com">robins.342@gmail.com</a>	66-A, Street No 2, Krishna Nagar, Safdarjang Enclave, New Delhi-110029	New Delhi, India	Project Advisor

## 2. BACKGROUND:

**2.1 Population Ageing in India:** A major demographic issue for India in the 21st century is population ageing, with wide implications for economy and society in general. With the rapid changes in demographic indicators over the last few decades, it is certain that India will move from being a young country to an old country over the next few decades. Presently (Census 2011), India has around 90 million elderly almost 8% of the total population and by 2050, the number is expected to increase to 315 million, constituting 20 per cent of the total population. The Population Composition in the percentage of population in the age group 60 years and above, in bigger states of India is as mentioned below (Indian Census 2011). Since our project area is New Barrackpore, Kolkata we have highlighted that the urban parts of the state of West Bengal show a higher trend, with 9.3 % of population as elderly men and 9.6% as elderly women<sup>(1)</sup> (Table 1)

Percentage of population in the age group 60 years and above to total population by sex and residence, India and bigger States, 2010

India and bigger States	Total			Rural			Urban		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
<b>India</b>	<b>7.5</b>	<b>7.2</b>	<b>7.8</b>	<b>7.5</b>	<b>7.2</b>	<b>7.9</b>	<b>7.3</b>	<b>7.0</b>	<b>7.7</b>
Andhra Pradesh	7.7	7.1	8.4	8.3	7.8	8.9	6.4	5.5	7.3
Assam	5.5	5.6	5.3	5.3	5.5	5.2	6.3	6.5	6.1
Bihar	6.4	6.4	6.3	6.4	6.5	6.3	6.0	5.9	6.1
Chhattisgarh	6.5	5.9	7.1	6.6	5.9	7.3	6.0	5.9	6.2
Delhi	5.7	5.4	6.0	4.8	4.5	5.1	5.8	5.5	6.2
Gujarat	7.5	6.8	8.3	7.8	7.0	8.6	7.0	6.3	7.8
Haryana	6.1	5.3	6.9	5.9	5.0	6.9	6.5	6.1	7.0
Himachal Pradesh	10.1	9.9	10.3	10.3	10.1	10.5	8.2	8.1	8.3
Jammu & Kashmir	7.7	7.9	7.6	7.6	7.7	7.4	8.4	8.3	8.5
Jharkhand	5.9	5.6	6.2	5.9	5.5	6.3	6.0	6.0	5.9
Karnataka	7.9	7.6	8.2	8.4	8.1	8.8	6.9	6.6	7.2
Kerala	11.8	11.0	12.6	11.8	11.0	12.6	11.9	11.1	12.7
Madhya Pradesh	6.7	6.4	7.0	6.7	6.4	7.1	6.6	6.6	6.5
Maharashtra	9.2	8.7	9.7	10.2	9.5	10.8	7.9	7.5	8.2
Odisha	8.7	8.5	8.9	8.9	8.7	9.1	7.5	7.5	7.5
Punjab	8.9	8.4	9.4	9.5	9.1	10.0	7.9	7.4	8.4
Rajasthan	6.8	6.2	7.4	6.8	6.3	7.4	6.8	6.1	7.5
Tamil Nadu	10.0	9.6	10.3	10.4	10.1	10.8	9.4	9.1	9.7
Uttar Pradesh	6.4	6.2	6.5	6.5	6.3	6.7	5.9	5.8	6.0
West Bengal	7.5	7.4	7.5	6.8	6.6	7.0	9.3	9.6	8.9

Table 1: Percentage of population in the age group 60 years and above in main states of India(Source :Indian Census 2011)



According to WHO definition of older or elderly person, age classification varied between countries and over time, reflecting in many instances the social class differences or functional ability related to the workforce, but more often than not was a reflection of the current political and economic situation. Many times the definition is linked to the retirement age, which in some instances, was lower for women than men. This transition in livelihood became the basis for the definition of old age which occurred between the ages of 45 and 55 years for women and between the ages of 55 and 75 years for men.

**2.2 Towards building an age friendly community:** In developing countries, the share of elder population in urban communities will multiply 16 times from about 56 million in 1998 to over 908 million in 2050. By that time, elders will comprise one fourth of the total urban population in less developed countries. <sup>(4)</sup>Seeing this huge increase in the number of older persons it is important that cities provide structures and services to support their residents' wellbeing and productivity. Older people in particular require supportive and enabling living environments to compensate for physical and social changes associated with ageing. The concept of Age Friendly City was conceived in June 2005 at the opening session of the XVIII IAGG World Congress of Gerontology and Geriatrics in Rio de Janeiro, Brazil. Later many other countries participated, wherein a Guide for Global Age Friendly Cities was published by the WHO, (Ageing and life course, Family and Community Health) in 2007. The guideline included the checklist of core age-friendly features which provided a universal standard for an age-friendly city <sup>(5)</sup>

The eight essential features taken into consideration which make a city age friendly are

- i. Outdoor spaces and buildings
- ii. Transportation
- iii. Housing
- iv. Social participation
- v. Civic participation and employment



- vi. Respect and social inclusion
- vii. Communication and information
- viii. Community and health service

The concept of Towards Building an Age Friendly City emphasizes an active role of the older persons as full partners in improving their life and environment placing strong importance on collaboration, active participation, and community engagement with elders. The WHO framework on Active Ageing also forms the basis for success of an Age Friendly City. Active Ageing is the process of optimizing opportunities for health, participation and security in order to enhance quality of life as people age. In an age-friendly city, policies, services, settings and structures support and enable people to age actively by recognizing the wide range of capacities and resources among older people (Active Ageing: A Policy framework)

**2.3 Health of older persons in India:** The incidence of health conditions in older persons, such as falls, cognitive impairment, vision impairment, hearing impairment, delirium, dizziness and frailty, is increasing. The average Indian doctor does not get exposed to the required education to manage such conditions. Geriatric medicine is not encouraged as a practice. As a result of this, except for a few private hospitals, geriatric patients are attended to in the internal medicine department of most government owned public hospitals. Internists, without being specially qualified to assess and treat geriatric conditions attend to such patients. Therefore, the average geriatric medical condition goes under/untreated and the total burden in the population of such conditions is always underestimated. With increasing life spans, older persons in India are commonly facing health problems which were considered rare two generations back.

**2.4 Older women in India:** Various studies proved that the share of older women especially in rural areas appears to be larger than their male because of their higher life expectancy. Income insecurity, illiteracy, age related morbidity, and physical and economic dependency are factors that tend to make the Indian older persons, and particularly older



women, vulnerable. In addition to problems of illiteracy, unemployment, widowhood and disabilities, older women in India also face life-long gender based discrimination, resulting in differential patterns of ageing of men and women<sup>(2)</sup> The Global Report on Ageing in the 21st Century (2012) reinforces the observations made in India that there is multiple discrimination experienced by older persons, particularly older women, including access to jobs and health care, subjection to abuse, denial of the right to own and inherit property, and lack of basic minimum income and social security (UNFPA & Help Age International, 2012). Compared to men, the health status of women in India was found to be poor. Currently, elder women in India face a multitude of health problems like cough, joint pains, blood pressure, heart disease, diabetes and cataract/loss of vision<sup>(2)</sup>

**2.5 About joint pain and hypertension in older women:** Joint pains in forms of arthritis, fibromyalgia, and osteoporosis are common in elderly. Most studies in India show that more than half of the older persons (more number of women than men) represented various physical problems from which joint pains is the commonest one, with 59.5% men and 67.3% women in India suffering from this condition<sup>(2)</sup> Hypertension is one of the most important treatable causes of mortality and morbidity in the older persons<sup>(8)</sup> In a meta-analysis of 34 epidemiological studies from rural and urban populations of India, it was observed that hypertension is emerging as a major public health problem in India and is more prevalent among urban people compared to those of rural area.<sup>(3)</sup> Patients with hypertension may experience adverse effects on well-being and health-related quality of life which can be associated with headache, dizziness, and tiredness. Hypertension is the key disease which leads to cardiovascular diseases.

**2.6 Self management and community initiatives for older women:** Proper nutrition and lack of exercises plays a major role in an individual's overall health; psychological and physical health status. In this collaborative attempt between WHO SEARO and DFI on the concept "Towards Building an age friendly world",<sup>(4)</sup> we have introduced a self management and community initiative for 108 older women in the urban community. Older women with joint pains and hypertension are chosen to participate in this project. This program is a multi-dimensional intervention that engages subjects with in a series of classes in which they are helped to develop critical knowledge, skills and motivation to move forward in their recovery and achieve their personal goals. Such nonmedical interventions can assist elders in coping with and adapting to their illnesses as proven through various studies provide better functional outcomes and are more cost effective than conservative care, surgery or more invasive procedures.

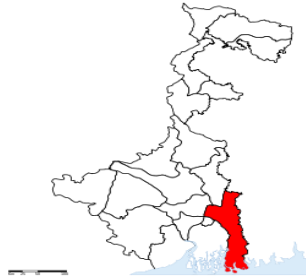


**2.7 Programs of Dharma Foundation of India (DFI) towards Building Community and Health Service:** The DFI has worked since 2010 to establish an Age Friendly Community at New Delhi in collaboration with local senior citizen organisations. The present DFI-WHO SEARO collaboration shall entail and effort towards this cause at New Barrackpore, Kolkata in the state of West Bengal.



### **3. PROJECT AREA:**

The project area chosen for this work is New Barrackpore in West Bengal. It lies in the suburban area of Kolkata. (Figure as below)



**3.1 Geography of New Barrackpore:** New Barrackpore comes in the jurisdiction of Kolkata 700131. New Barrackpore (also spelt New Barrackpur) is a town and a municipality under New Barrackpore police station of Barrackpore subdivision, District Kolkata, in the Indian state of West Bengal.

**3.2 Statistics of New Barrackpore:** Statistics of New Barrackpore is still not available in India Census 2011. India Census 2001 shows the following statistics <sup>(5)</sup> (Table 2)

Population	83,192 (Census-2001) (Male-41,813, Female - 41,379)
% of Literacy	95.19% (Male-97.59%, Female-92.72%)
Area	16.89 Sq. K.M.
Ward	19 Nos.
Mouza	4 Nos.
Holding	14,680 Nos.
Density of Population	4925 Nos.
Population under BPL	20,889 Nos.
No. of Hospital	One Maternity & General Hospital run by Municipality, Ambulance-2 Nos. Two IPP-VII Centres, 11 sub-Centres, 4 CUDP-II Health Sub-Centres
Post Office	3 Nos. (One-Main & Two sub-Post Office)
Cinema hall	1 No.
Police Station	1 No.
Road	115.84 KM. (Pucca –108.80 KM, Kuccha – 7.04 KM,)
Drain	321.10 KM (Pucca – 43.92 KM, Under Ground Drain - 0.51 KM, Kuccha – 276.67 KM)
Educational Institution	College – 3, H.S School – 7, Secondary School – 3 ,Jr. H.S. - 1, Primary School-36
Water	Hand Tube well –316 Nos., Deep Tube well- 15 Nos.
Burial Ground	2 Nos. (Muslim - 2)

Table 2: Statistics of New Barrackpore, Indian Census 2001

### 3.3 Profile of New Barrackpore:



New Barrackpore's population is primarily based on the descendents of refugees from Bangladesh (formally East Pakistan), who migrated here prior to 1950s due to turmoil in Bangladesh. New Barrackpore hosts 'Pushpa Mela' every winter with many fascinating collections of many enterprising florists. 'Kristi' is a community auditorium where often cultural events are held. There are universities and good Bengali medium schools in the vicinity. Some centres and playgrounds cater to various activities for children in the area. Common transport like auto rickshaw, cycle rickshaw, van, bus take commuters from the interior part of the New Barrackpore to the main street or road connecting to the other parts of Kolkata. The condition of roads available are satisfactory, the roads are appropriately lit with good lights. Some of the roads leading to markets are congested and water logged during the rainy season. Water is available through pipelines systems or carried by people from tube wells constructed in some areas.



Buses, taxis frequently ply on these roads connecting the main parts of Kolkata to New Barrackpore. The Kolkata International airport is approximately 10 kms from the centre of New Barrackpore. The New Barrackpore railway station is very close by so communication to the city of Kolkata and other districts are quite easy.



**3.4 Facilities for older persons at New Barrackpore:** Most elderly are associated with one of the many organisations in the area. There are many temples and community centres at New Barrackpore which older persons visit. Festivals like Dassera, Diwali are held in great spirits and scale where elders play an important role. The main health problems faced by older women in the area are diabetes, cardiac issues and arthritis. Most of the seniors avail health benefits under government sponsored schemes like CGHS, ECHS etc. The neighbouring organisations hold health camps and awareness workshops which are sponsored from big hospitals like Apollo, Fortis and local nursing homes. These hospitals are around 10-15 kms from New Barrackpore. During emergencies elders visit these hospitals. The population of elders also belong to the low socio economic class, who are labourers or working as helpers in houses/residencies of the area. These elders take health consults from the charitable health clinics running in the vicinity like Tridhara, Vivekananda Parishad and Palli Udayan. There are chemists, grocery shop, fish and vegetable markets in Municipality Markets in each block of New Barrackpore.

#### **4. PROJECT OBJECTIVES:**

- To teach self management of joint pains and hypertension through exercises and diet modifications to older women.
- To connect older women to community group therapy and peer groups having similar problems.
- To create a future model for community and health services and promote age



friendly cities.

## **5. METHODOLOGY:**

### **5.1 Training:**

Physiotherapists, dieticians and their assistants were trained for doing assessments and prescribing intervention of exercises and diet protocols for joint pain and hypertension.



### **5.2 Interventions:**

**5.2.1 Self-management:** Self-management is about using one's own resources to help manage their condition. A combination of the following techniques is used.

- i. Keeping active, exercising daily.
- ii. Following healthy diet pattern.
- iii. Keeping notes or a diary regarding one's own symptoms, treatment and activities to establish what makes the arthritis or hypertension better or worse.

**5.2.2 Community Initiatives:** Every subject attends 2 workshops/group therapies on joint pains and hypertension. We held peer group discussion meetings in the Community Centre in small and big groups to learn/share from each other, how to manage the symptoms of joint pains and hypertension. Two follow visits for every subject was arranged at the Community Centre. It was encouraged to perform group exercises and share notes on their participation in self managing their health problems. Awareness of their problems was shared in brief presentations on the topics by the physiotherapist and dietician.



**5.2.3 Physical Therapy Intervention:** The following interventions advise to the subjects by the physical therapists after a detailed assessment of her joint pains and hypertension.

- i. Joints protection
- ii. Practical changes at home and at work
- iii. Managing pain

a) Exercises for subjects with joint pain: The following points were explained to subjects<sup>(6) (7)</sup>

- i. Benefits of exercises
  - Better range of movement and joint mobility
  - Increased muscle strength
  - Less stiffness
  - Increased strength and energy
  - Managing weight
  - Better sleep
  - Maintain bone strength
  - Improve sense of well-being
- ii. Types of exercise shown
  - Range of movement
  - Strengthening
  - Aerobic exercises
  - Breathing exercises
- iii. Keeping active with arthritis
  - Walk to work, to the shops etc
  - Mopping the floor, is a good aerobic exercise
  - Doing the washing up can help loosen finger joints
  - Gardening can work out the whole body



b) Exercises for subjects with hypertension and prevention of hypertension: Having high blood pressure and not getting enough exercise are closely related. The risk of high blood pressure (hypertension) increases with age, and if the blood pressure is already high, exercise and physical activities to ones daily routine help<sup>(7)</sup> Physical activity that increases heart and breathing rates is considered aerobic activities are,

- Household chores
- Climbing stairs
- Walking
- Jogging

At least 150 minutes of moderate aerobic activity or 75 minutes of vigorous aerobic activity a week or a combination of moderate and vigorous activity is recommended to control hypertension<sup>(8)(9)</sup>.

#### **5.2.4 Diet Intervention:**

##### **a) Diet and Osteoarthritis:**

A healthy diet to keep weight down was recommended<sup>(10)</sup>

- High in fruit and vegetables
- High in starch and fiber
- Low in fatty foods and salt
- Low in added sugars

The following points were reiterated

- Cut Extra Calories
- Fruits and Vegetables
- Add Omega-3 Fatty Acids

##### **b) Diet and hypertension**

Interaction between diet and hypertension: Importance of proper diet play a very major role in the prevention, management and treatment of hypertension is explained .As hypertension is a lifestyle disorder which requires various diet modifications will be



explained to subjects. <sup>(10)(12)</sup> Counseling people regarding the complications of hypertension as well as educating how changes in the diet especially in the intake of salt consumption, fat and sugar intake can lower the blood pressure and hence decrease the complications holds key importance. Education on maintenance of ideal body weight and reduction in body weight (if overweight), lowers the blood pressure.

### 5.3 Inclusion and exclusion criteria:

- Women equal or more than 50 years of age.
- Able to understand and follow exercise and diet regime.
- Able to move in and around the house.
- Women who were bedridden and requiring long term care will be excluded.
- Women diagnosed with accelerated hypertension will be excluded
- Women with severe cardiac and neurological disorders will be excluded

### 5.4 Sampling Method:





A community initiative to recruit subjects was arranged by a local senior citizen organization and other organization working for upliftment of senior citizens at New Barrackpore .A community centre situated in the municipal market of New Barrackpore was chosen as the place for holding workshops and follow up visits .The physiotherapist and dietician were available everyday at the centre. Mr. Ashit Bhattacharya an active member of the local senior citizen organization was the point of contact. Awareness of the workshop and its benefits to older women having joint pain and hypertension was advertised by the local cable TV operators with a campaign stating “Awareness and Assessment of Joint Pains and Hypertension in Older Women” The programs was scheduled for 30<sup>th</sup> August 2015 and 30<sup>th</sup> September 2015.A convenient sampling method was used to recruit women, above and equal to 50 years of age, amongst those who attended the “Awareness And Assessment Program “at the community centre.



#### **5.5 Duration of project and resource material on intervention:**

Duration of project was three months. Each subject was asked to continue exercises and diet as prescribed for 8 weeks. They were encouraged to keeping notes or a diary regarding one’s own symptoms, treatment and activities. Resource material of intervention protocols on exercises and diet explained in easy pictorial format were distributed.

**5.6 Caregiver Education:** Caregivers of older persons who accompanied them to the workshops were educated about subject problems and how to help her at home to do exercise and diet modification. The caregivers of subjects older than 70 years were handed additional resource material.



**5.7 Outcome measures:** The following outcome measures were documented as part of initial assessment.

- Age, education, marital status, occupation.
- Mini Nutritional Assessment: The MNA is a validated nutrition screening and assessment tool that can identify subjects who are malnourished or at risk of malnutrition. The MNA was developed nearly 20 years ago and is the most well validated nutrition screening tool. Originally comprised of 18 questions, the current MNA now consists of 6 questions and streamlines the screening process.
- Blood Pressure (BP) measurement (using a sphygmomanometer)
- Brief Pain Inventory: The Brief Pain Inventory (BPI) has become one of the most widely used measurement tools for assessing clinical pain. The BPI allows patients to rate the severity of their pain and the degree to which their pain interferes with common dimensions of feeling and function. Initially developed to assess pain related to cancer, the BPI has been shown to be an appropriate measure for pain caused by a wide range of



clinical conditions.

- Barthel Index (BI): The Barthel scale or Barthel ADL index is an ordinal scale used to measure performance in activities of daily living (ADL).

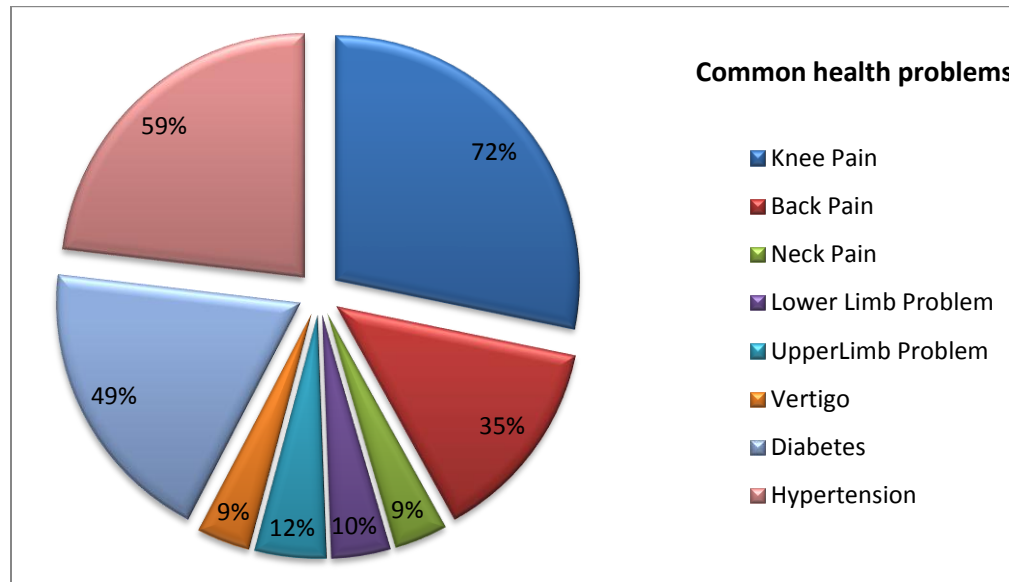
**5.8 Procedures:** All participants who attended the “Awareness and Assessment Program” were screened and selected based on the inclusion and exclusion criteria. Out of 124 women who participated in the program, 12 subjects were excluded based on screening, 4 subjects declined to participate in the intervention therefore 108 subjects were selected and assessed individually on the above outcome measures. After detailed assessment of demographic profile, pain and blood pressure, exercise and diet interventions were explained to each subject recruited. Resource material was distributed to each selected subject in the first workshops. Resource material was also given to caregivers of subjects who needed to be helped at home. Follow up was done to each subject telephonically. Caregivers were also contacted incase subject could not explain her condition. Every subject was asked to follow up twice in the community centre for group sessions .The BP, BPI and BI was documented at the beginning and end of 8 weeks of start of intervention.

## **6: RESULTS:**

**6.1 Statistical analyses:** Data were entered in Microsoft Excel spreadsheet. Descriptive statistics like mean, median and proportions were calculated using Statistical Package for the Social Sciences (SPSS) version 13.0. About 95% confidence intervals were calculated for proportions.

**6.2 Demographic profile:** Mean value of age of subjects was 62.3 with range between 50-85 (SD-7.64). Out of total sample size, it was found that 93% were married and 7% were widowed. The educational status of the participants were, 26% (n-28) were illiterate, 20% (n-22) studied till matric (10<sup>th</sup> standard), 20% (n-22) studied till intermediate (12<sup>th</sup> standard), 32% (n-34) were graduates and 2 % ( n-2) were post graduates. Occupational status of subjects showed 83 % ( n-90) were housewives, 11 % ( n-12) were doing government or private job and 6 % ( n-6) had retired.

**6.3 Common health problems reported by subjects:** As documented in the Brief Pain Inventory (BPI), 72% subjects (n-78) complained of pain in the knee joint, 35% (n-38) were suffering from lower backache, 9% (n-10) had neck pain, 10% and 12% had pain their upper extremity and lower extremity respectively. In addition the following problems were reported, 9% subjects (n-10) were diagnosed by their physician with vertigo, 49% subjects (n-53) with diabetes and 59 % subjects (n-64) with hypertension. (Figure of chart as below)



**6.4 Nutritional Status: (Mini nutritional assessment, MNA):**

The Mini Nutritional assessment showed 96% subjects falling in the category of normal nutritional status and 4% were at the risk of malnutrition. There were no subjects who fell in the category of malnourishment. (Table 3)

No of subjects	108
12-14 points: Normal nutritional status	96%
8-11 points: At risk of malnutrition	4%
0-7 points: Malnourished	0%

Table 3: Mini Nutritional Assessment



Compliance to dietary modifications: Standard diet of subjects was checked during the initial assessment. Diet modification was explained to all participants by the dietician. The dietician followed up with each subject telephonically .Two follow ups were done at the community centre. It was documented at the end of project that 43% subjects complied with the diet modifications. It was also documented that 53% took regular medications in the form of calcium and vitamin supplements.

**6.5 Joint Pain:** Brief Pain Inventory (BPI) was used to measure the intensity, location of pain and hindrance in activity of daily living due to pain. Almost every subject complained of pain. 72% of subjects complained of pain in the knees, which was seen as the commonest joint pain. We found significant difference in all the component of BPI in our final assessment. Incidence of pain in joints showed improvement in the final assessment. There was a significant improvement in symptoms of worst pain, least pain and average pain in the past 24 hours and interference of pain in past 24 hours in general activity, mood, walking ability, normal work, relationship with other people, sleep and enjoyment of life. (Table 4)



Sr.No		BPI Pre	BPI Post	Std. Deviation	P-value	t-Value	Sig. (2-tailed)
1	Have you had <b>pain</b> other than everyday kinds of pain today?	99%	99%	-	0	0	
2	<b>Location of Pain?</b>						
	Knee Pain	72%	70%	-	-	-	
	Back Pain	35%	34%	-	-	-	
	Neck Pain	9%	9%	-	-	-	
	Lower Limb Pain	8%	5%	-	-	-	
	Upper Limb Pain	6%	6%	-	-	-	
3	<b>WORST PAIN</b> in the last 24 hours?	4.47	3.27	1.34969	0.656	9.197	0
4	<b>LEAST PAIN</b> in the last 24 hours?	3.36	2.62	1.10084	0.636	6.818	0
5	<b>AVERAGE PAIN</b> in the last 24 hours?	3.46	2.84	1.01132	0.758	6.375	0
6	Pain you have <b>RIGHT NOW?</b>	4.27	4.27	-	0	0	
7	What <b>TREATMENTS</b> or <b>MEDICATIONS</b> presently you are on?						
	Drugs(for pain relief)	78%	73%	-	-	-	
	Exercise	65%	87%	-	-	-	
	Yoga	54%	62%	-	-	-	
8	Did you get <b>RELIEF</b> from the treatments or medications provided?	48.88	52.77	0.82974	0.841	-5.412	0
9	In the past 24 hours, has pain has <b>INTERFERED</b> with your:						
	General activity	4.22	3.07	1.59915	0.841	7.461	0
	Mood	3.67	3.21	1.02129	0.585	4.638	0
	Walking ability	4.37	4.09	0.82974	0.792	3.479	0.001
	Normal work	4.42	4.1	0.90511	0.909	3.721	0
	Relations with other people	1.74	1.61	0.6279	0.885	2.145	0.034
	Sleep	2.02	1.79	0.73123	0.961	3.29	0.001
	Enjoyment of life	6.02	5	1.3874	0.935	7.629	0

Table 4: Brief Pain Inventory



In the initial assessment the BPI also showed, physical activity in terms of exercises was done by 65% subjects, yoga done by 54%, and medications taken for pain relief by 78% subjects. The final assessment showed increase of 87% in subjects performing exercises and 62% subjects did yoga. Medications for pain relief decreased, with 73% subjects taking them by the end of the project.

#### **6.6 Blood Pressure (pre and post exercise) in subjects:**

59% subjects reported to have hypertension as diagnosed by their physician, 53% subjects took anti hypertensive medications prescribed by their physician. Subjects were not given any advice on medications and were asked to continue medications as prescribed by their physician. Initial assessment included information on existing blood pressure measurements. At the end of three months there was no difference in blood pressure as initial and post assessment mean score of diastolic and systolic pressure was in normal value of 120/80 mm of Hg. (Table 5)

	Mean Diastolic(mm of Hg)	Mean Systolic (mm of Hg)
Pre	79.9	125.9
Post	79.3	124.2

Table 5: Blood Pressure Measurements

#### **6.7 Activity of Daily Living (ADLs) based on Barthel Index:**

Mean paired t-test were used to compare the change in activity of daily living functioning of subjects at the beginning and end of project. There was significance difference (t-test- 7.079) between initial and final assessments documented on BI. Subjects showed improvement in self care activities like using a toilet. (Table 6)

Paired Samples Test									
		Paired Differences							
		Mean difference	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Barthel – Pre+Post		-4.81481	7.06862	0.68018	-6.16319	-3.46644	-7.079	1.34	0

Table 6: Barthel Index

### 6.8 Follow up on phone and at the community centre:

The selected subjects are called once a week, to enquire about problems faced by them in following the interventions explained. Those subjects who did not give their phone numbers are individually informed by the local organization to visit the physiotherapist and dietician at the Community Centre. The physiotherapist calls all selected subjects telephonically took feedback on improvement in pain and any symptoms of hypertension. Those subjects who are having problems with pain were asked to see the physiotherapist at the Community Centre.



### 6.9 Community Initiatives through group meetings:

Group Therapy and discussion meeting amongst older women having similar problems are discussed. Subjects share notes and discuss how they are managing their pain and hypertension. Group discussion was interactive and joyful.





#### 6.10 Feedback from participants:

Feedback of the awareness and assessment program (see feedback format as below) was taken on phone from 20 subjects randomly 2 weeks after the Awareness and assessment program. Program evaluations which were answered in YES or NO included the following:

1. You have gained knowledge and applied knowledge learned.
2. You found Awareness and Assessment Program useful and interesting.
3. The resource materials provided to you were helpful.
4. Follow up on phone and visiting physiotherapist and dietician at the community centre was helpful.
5. Can self-management help deal with chronic health conditions in older persons?
6. Do you feel motivated to follow interventions advised after meeting peers in group therapy and follow up sessions?
7. Your suggestions. (in few words)

The participants felt that the program helped them to understand the pain problems better. 89% participants gave positive feedback (YES) on all the above points. 11% participants suggested that awareness and assessment programs should be conducted by grassroots level senior citizen organizations for continuous monitoring of health problems. They felt motivation towards self-management of chronic diseases is difficult to sustain and can be helped with group therapy and meetings with peer groups with similar problems. They felt pictures of exercises specific to different joints in the resource material helped them to remember the intervention as explained by the physiotherapist.



## **7. DISCUSSION:**

Joint pain and hypertension are common chronic problems associated with ageing and a major worldwide problem for medical, psychosocial, and economic reasons. Joint pains leads to considerable morbidity in terms of pain, functional disability, lowered quality of life, and psychological problems. Patient centered programs for self management of arthritis, tested in the United States on volunteers from the community with osteoarthritis and rheumatoid arthritis, had beneficial effects on pain, depression, exercise taken, communication with doctors, and participants' perception of their capacity to manage the disease. <sup>(15)</sup> A previous study on review of self management programs commissioned by the Department of Health in UK suggested that these programs can improve knowledge, performance of self management behaviors, self efficacy, and aspects of health status compared with standard care. <sup>(13,14)</sup> This is relevant to the UK government's promotion of the expert patient program in primary care settings, a generic self management program for people with a variety of chronic diseases ([www.expertpatients.nhs.uk/](http://www.expertpatients.nhs.uk/)). In this project we hypothesized that participation of older women diagnosed with joint pains and or hypertension in a self management and community initiative program, would improve their overall general health and function. At the end of the three month duration of the project we saw enthusiasm in subjects to involve themselves in such initiatives for self care. Women also participated in informing friends/neighbors to join the program. They also took responsibility in arrangement in the workshops, distributed tea and snacks to subjects, documented registration of subjects, which overall helped in conducting a smooth program. Telephonic follow ups of subjects and reviews in group sessions showed that the women were well motivated and understood the exercise intervention clearly. But the subjects did not respond well to diet interventions as they felt they were taking balanced nutrition and did not feel the need to follow diet modifications, but they felt they should make the changes for their family members (son/daughter/husband)!



Caregivers responded well to concerns of their elder women at home (>60 years of age). Women in the age group 50-59 years of age complained of caregivers not giving them much time towards their health problems. They also felt that due to pressure of their routine work like helping husband and children, they are unable to take care of their own health. Most subjects in this age group complained of pain in legs and arms. Group sessions encouraged discussion amongst subjects to speak how they were handling their exercises as part of their daily chores. Group exercises motivated subjects to do regular exercises and share problems they faced. Involvement of activities like stair climbing and walking which help hypertension was well accepted by subjects. There was also joy and cheer in these sessions as they met their friends and neighbors. It is well proven that group therapy improves mental stimulation; improves social isolation, gives sense of accomplishment, slow memory loss and help muscle building. Our project adds substantially to the literature on self management and community initiatives because participants were recruited from members of senior citizen organizations, the intervention had an impact on the wellbeing of subjects as they already were friends or neighbors living in the same community. The results of the BPI showed primarily an improvement in knee pain, and most of all an improvement in the interference of pain in their general activity, mood, walking ability, relation with other people, sleep and enjoyment of life participants were more confident about managing pain and other arthritis related symptoms as a result. Other outcomes, in particular the Barthel Index showed a significant improvement especially in toilet use, which included handling clothes, wipe, flushing the toilet showing a favorable trend in the subjects. These findings indicate that the intervention improves participants' ability to manage their symptoms and leads to an improvement in the pain interfering in their life. There were no changes in outcomes of hypertension even though subjects reiterated improving their participation in activities like stair climbing and walking. The results of no changes may be due to the fact that most subjects were on anti hypertensive medication prescribed by their physician. A study of a longer duration may show changes in blood measurements or lead to reduction in medications for



hypertension. It is not clear whether these changes have positive and long term effects on patient behavior and morbidity. It is clear that group sessions of workshops which include awareness and understanding of health program, may motivate an older person to be disciplined to follow simple intervention of exercises and diet and therefore self manage their health problem .It may be interesting to have further research on whether only self management may results in same benefit as against a program which combine self management with community initiatives.

As mentioned in WHO guidelines, an “age-friendly” city is one that promotes active aging; that is, it optimizes opportunities for health, participation, and security in order to enhance quality of life as people age. They all address needs related to health (e.g., accessible and affordable health and health care services and opportunities to stay active), participation (e.g., accessible public transportation, information services, recreational programs, social connections, volunteer opportunities, place to worship, and the need to be valued and respected), and security (e.g., home and community safety, transportation safety, financial security) <sup>(16)</sup>. Self management and community initiative programs may be an ideal way to promote good health in older persons. It may be a cost effective way to prevent and cure common diseases seen in this population. Such initiatives may not replace hospital based care but empowers older person to understand their health problems and promote prevention of further co morbidities.

Strength and Limitations: Telephonic interviews with subjects who did not attend the follow up sessions in community centers indicated the main reason was timing of the local group; subjects were busy with local festivities or had difficulties with access to the community centers. Results of the intention to treat and per intervention analyses suggest that poor attendance did not affect the final results—results were similar for all subjects who had been offered the complete intervention and those who attended one or more sessions. Such programs need to consider how to maximize participation, and the relatively poor uptake of the intervention is of concern in terms of the accessibility and acceptability



of self management program in the community. Our project show small positive changes across all outcome measures, BPI and BI, but these were statistically significant only for general health outcomes. But it does indicate that the intervention can lead to benefits in wellbeing for participants with pain; however, although these benefits were statistically significant, the effects were small and their clinical relevance for the population tested as a whole is unclear. Further work is needed to establish any predictive factors that might indicate older persons of different age groups who are most likely to benefit. Larger effects may be more likely in volunteers with high levels of motivation and morbidity.

Indications for further research: The main impact of this complex intervention was on general health outcomes, but the process by which this was achieved is unclear. Psychological benefits needs to be included. We need to understand further how to incorporate plans to whereby the intervention can effect change. It may be an important aspect to understand how the various components of the intervention may impact on different outcomes which could allow appropriate targeting of older persons to the intervention. This is important given the heterogeneity of this population receiving a generic self management approach to any chronic disease.

## **8. Conclusions**

Results of this project show that self management and community initiatives provide some relief for older persons who are prone to suffer from joint pains. Prevention of co morbidities can be an important benefit of this program. Self management and community initiatives may be an effective way to build community health services, which is one of the features of making a city, age friendly. It may be fruitful to formulate research and projects on understanding this program in various cities of India which can help global policies to improve community and health services for older persons in India and abroad.



## 9. Acknowledgements:

We sincerely express our appreciation to WHO-SEARO for funding and guiding us throughout the project. We also thank all the subjects who enthusiastically participated. We wholeheartedly thank the following organizations for furthering the cause of senior citizens in the community at New Barrackpore.

1. Welfare Association of Senior Citizen(New Barrackpore)
2. RCC Bilkanda (New Barrackpore)
3. Junior Red Cross Unit (Indian Red Cross Unit,North 24 Paraganas)
4. Help for Human and Human Rights, Lenin Garh

## 10. References:

1. Indian census 2011, chapter 2,population composition
2. Women and Aging: Problems and Prospects;  
[http://www.wscopedia.org/index.php?option=com\\_content&view=article&id=789:community-care&catid=17:completed-projects](http://www.wscopedia.org/index.php?option=com_content&view=article&id=789:community-care&catid=17:completed-projects)
3. Gupta R. Meta-analysis of prevalence of hypertension in India. Indian Heart Journal 1997; 49: 43-8.
4. Global Age Friendly Cities, A Guide  
[http://www.who.int/ageing/publications/Global\\_age\\_friendly\\_cities\\_Guide\\_English.pdf?ua=1](http://www.who.int/ageing/publications/Global_age_friendly_cities_Guide_English.pdf?ua=1)
5. Statistics of New Barrackpore, [https://en.wikipedia.org/wiki/New\\_Barrackpore](https://en.wikipedia.org/wiki/New_Barrackpore)
6. Physical Activity and Health <http://www.cdc.gov/nccdphp/sgr/pdf/sgrfull.pdf>
7. Exercise and arthritis. American College of Rheumatology.  
[http://www.rheumatology.org/practice/clinical/patients/diseases\\_and\\_conditions/exercise.asp](http://www.rheumatology.org/practice/clinical/patients/diseases_and_conditions/exercise.asp). Accessed Dec. 18, 2012.
8. Physical activity and blood pressure. American Heart Association.  
[http://www.heart.org/HEARTORG/Conditions/HighBloodPressure/PreventionTreatmentofHighBloodPressure/Physical-Activity-and-Blood-Pressure\\_UCM\\_301882\\_Article.jsp](http://www.heart.org/HEARTORG/Conditions/HighBloodPressure/PreventionTreatmentofHighBloodPressure/Physical-Activity-and-Blood-Pressure_UCM_301882_Article.jsp). Accessed July 27, 2015.
9. AskMayoExpert. Hypertension care process model, incorporate lifestyle modifications. Rochester, Minn.: Mayo Foundation for Medical Education and Research; 2014.
10. Prevalence, awareness, treatment and control of hypertension among the elderly in Bangladesh and India: a multicentre study, hypertension study group <http://www.who.int/bulletin/arch>
11. Diet and Arthritis, Dr Áine O'Connor, Nutrition Scientist, British Nutrition Foundation.
12. Diet, nutrition and the prevention of hypertension and cardiovascular diseases K Srinath Reddy<sup>1,\*</sup> and Martijn B Katan<sup>2</sup>Department of Cardiology, Cardiothoracic Centre, All India Institute of Medical Sciences, New Delhi, India: Division of Human Nutrition and Epidemiology, Wageningen University, Wageningen, The Netherlands
13. Barlow J et Al. Self-management approaches for people with chronic conditions: a review. Patient Educ Counsel 2002;48: 177–87.
14. Warsi A, Wang P,LaValley M, Avorn J, Solomon DH. Self-management education programs in chronic disease: a systematic review and methodological critique of the literature. Arch Intern Med 2004; 164:1–9.
15. Lorig KR, Mazonson PD, Holman HR. Evidence suggesting health education for self-management in patients with chronic arthritis has sustained health benefits while reducing health care costs. Arthritis Rheum 1993; 36: 439–46.
16. Louise Plouffe and Alexandre Kalache Towards Global Age-Friendly Cities: Determining Urban Features that Promote Active Aging,Journal of Urban Health: Bulletin of the New York Academy of Medicine, Vol. 87, No. 5  
doi:10.1007/s11524-010-9466-0 \* 2010 The New York Academy of Medicine