

A CROSS SECTIONAL NUTRITIONAL ASSESSMENT OF POPULATION

FIFTY YEARS AND ABOVE

IN DISTRICTS RAHIMYAR KHAN, SHIKARPUR AND JACOBABAD



**HelpAge
International**

age helps

A CROSS SECTIONAL NUTRITIONAL ASSESSMENT OF POPULATION
FIFTY YEARS AND ABOVE IN DISTRICTS RAHIMYAR KHAN, SHIKARPUR AND JACOBABAD

Published by: HelpAge International Islamabad, Pakistan.

Copyright © 2013

HelpAge International
House No 99, Street No 60, I 8/3, Islamabad, Pakistan
Phone: +92 51 835 64 76
Fax: +92 51 835 14 27
URL: www.helpage.org
Email: info@helpage.org.pk

This publication is produced by CENTRE OF EXCELLENCE Maternal Neonatal and Child Health
Department HEALTH SERVICES ACADEMY Ministry of Health, Government of Pakistan with
financial support from HelpAge International, Pakistan.

All rights reserved. The information can be reproduced if sources are acknowledged.

Authored by: Prof. Shamsa Zafar, Dr. Mariam Ashraf, Dr. Zaeema Arif

Available at:

HelpAge International Islamabad, Pakistan
Website: URL: www.helpage.org
Email: info@helpage.org.pk

And

Centre of Excellence Maternal Neonatal and Child Health Department
Health Services Academy Ministry of Health, Government of Pakistan Chak Shazad, Islamabad
www.hsa.edu.pk

CONTENTS

LIST OF ACRONYMS	4
LIST OF TABLES	5
LIST OF FIGURES	5
EXECUTIVE SUMMARY	6
1 BACKGROUND & INTRODUCTION.....	7
2 LITERATURE REVIEW	8
3 AIM AND OBJECTIVES.....	11
4 METHODOLOGY	11
4.1 STUDY POPULATION.....	11
4.2 SETTINGS	11
4.3 STUDY DESIGN.....	13
4.4 STUDY METHODS/TECHNIQUES	13
4.5 SAMPLING STRATEGY	13
4.6 RESEARCH TOOLS	15
4.7 VARIABLES MEASURED	15
4.8 PILOT TESTING.....	15
4.9 TRAINING OF DATA COLLECTORS.....	15
4.10 DATA COLLECTION	16
4.11 DATA MANAGEMENT	16
4.12 DATA ANALYSIS	16
4.12.1 <i>Quantitative data analysis</i>	16
4.12.2 <i>Qualitative data analysis</i>	16
5 ETHICAL CONSIDERATIONS	17
6 RESULTS.....	18
6.1 QUANTITATIVE RESULTS	18
6.1.1 <i>Socio Demographic Characteristics</i>	18
6.1.2 <i>Household characteristics and Social status</i>	20
6.1.3 <i>Nutritional status</i>	21
6.1.4 <i>Dietary Habits</i>	24
6.1.5 <i>Physical Activity</i>	25
6.1.6 <i>Health status</i>	25
6.1.7 <i>Health behavior and health seeking</i>	26
6.2 QUALITATIVE DATA	28
6.2.1 <i>Perceived healthy diet and body size</i>	28
6.2.2 <i>Barriers in getting desired diet</i>	30
6.2.3 <i>An insight into life style</i>	31

6.2.4	<i>Perceived health status and demands for betterment</i>	32
7	DISCUSSION	34
8	CONCLUSIONS AND RECOMMENDATIONS	35
	ANNEXURES	36
	ANNEXURE 1: DEMOGRAPHIC DETAILS OF THE FGD PARTICIPANT RAHIM YAR KHAN:	36
	ANNEXURE 2: DEMOGRAPHIC DETAILS OF THE FGD PARTICIPANTS SHIKARPUR:	37
	ANNEXURE 3: DEMOGRAPHIC DETAILS OF FGD PARTICIPANTS JACOBABAD:	38
	ANNEXURE 4: MATRIX OF QUALITATIVE DATA ANALYSIS FOR RAHIM YAR KHAN	39
	ANNEXURE 5: MATRIX OF QUALITATIVE DATA ANALYSIS FOR SHIKARPUR	40
	ANNEXURE 6: MATRIX OF QUALITATIVE DATA ANALYSIS FOR JACOBABAD	42

LIST OF ACRONYMS

BHU	Basic Health Unit
BMI	Body Mass Index
FGD	Focus Group Discussions
GDP	Gross domestic product
MDG	Millennium Development Goal
MUAC	Mid Upper Arm Circumference
RHC	Rural Health Centre
RYK	Rahim Yar Khan
SPSS	Statistical package for social sciences
THQ	Tehsil Head Quarter
WHO	World Health Organization

LIST OF TABLES

Table 1: Marital status of the participants.....	19
Table 2: Education status of the participants	20
Table 3: Monthly income and house hold characteristics.....	20
Table 4: Occupation status of respondents	21
Table 5: Anthropometric and BMI measurements.....	21
Table 6: BMI categories and prevalence	22
Table 7 : BMI distribution according to sex	22
Table 8: MUAC and nutritional status.....	23
Table 9: MUAC and nutritional status according to sex.....	24
Table 10: Dietary Habits.....	24
Table 11: Physical activity.....	25
Table 12: Current Health status	26
Table 13: Importance of Health	26
Table 14: Health seeking behavior	27
Table 15: Demographic details of the FGD participants	28

LIST OF FIGURES

Figure 1: Map of Rahimyar Khan.....	12
Figure 2: Map showing district Shikarpur	12
Figure 3: Map of District Jacobabad.....	13
Figure 4: Household selection methodology	14
Figure 5: Sex distribution of the participants.....	18
Figure 6: Age and sex distribution of the participants.....	18
Figure 7: Formal and religious schooling of respondents.....	19

EXECUTIVE SUMMARY

A cross sectional survey was conducted in April 2013 to assess the nutritional status, health and dietary habits of men and women aged 50 years and above. The survey was conducted using both quantitative and qualitative research methods in one district of Punjab province (Rahim Yar Khan) and two districts of Sindh province (Jacobabad and Shikarpur).

The quantitative parameters were measured in 514 participants and included weight, height, Body Mass Index (BMI) and Mid Upper Arm Circumference (MUAC). The prevalence of malnutrition (BMI < 18.5) was found to be 9 %, prevalence of overweight (BMI >25) was 27% and obesity (BMI >30) was detected in 21%. Malnutrition calculated through MUAC was found to be 5% (3% severe acute malnutrition and 2% moderate acute malnutrition).

The mean age of the respondents was 60 ± 8.8 years. The educational status was poor with only 25% having any formal schooling. Majority of the older men were still working (mostly as farmers) and were the decision makers in the family. The dietary habits in this population revealed that about 42% only had two meals a day, which mostly comprised of vegetables and pulses, with occasional consumption of fruit and meat. Majority perceived good diet as the only measure for maintaining good health; very few considered exercise to be important. A significant proportion of older population (65%) was suffering from a diagnosed disease, of which arthritis, diabetes and hypertension were the top three ailments.

Qualitative findings of six Focus Group Discussions (FGDs) with 63 participants revealed that people although generally familiar with the constituents of a balanced diet, are actually not consuming it. In addition many fancy eating particular food types specially meat but are unable to satiate the wish. The major constraint in acquiring a good quality and quantity of food were financial and many demanded that government should ensure food security measures, particularly targeting the older people. The participants reported having chronic diseases, with little or no follow up and considered these to be associated with old age. Furthermore they do not follow any regular pattern of physical activity nor do they consider it important due to their busy schedules of daily life.

The limitation of a survey inquiring about the dietary intake can be that the people may like to exaggerate the quality or quantity of food consumed because of social desirability and observations may be a better way of documenting but have feasibility issues.

There is a need to improve awareness about diet, exercise, the risk of obesity and management of chronic illnesses in older people. Though the extended family system can be supportive, it also poses additional financial burden for which older population has to work.

1 BACKGROUND & INTRODUCTION

Geriatric population is growing at an alarming rate. At present globally, population aged >65 years stands at 380 million and by the year 2020, it is projected to increase to more than 690 million¹. The older population growth has been observed in developed as well as developing countries, with Asia exhibiting fastest aging population as a consequence of recent epidemiological transition. This rising geriatric population is expected to offer fresh challenges to health care providers in near future¹.

Health problems are among the most frequent reasons for professional interventions with older people. These range from chronic conditions causing some inconvenience to severely disabling illnesses. With ageing population the numbers of older people with chronic conditions like heart disease, diabetes, hypertension, cancer, trauma, dementia and Alzheimer's disease etc. are also increasing. As a result they are vulnerable to various disabilities, nutritional challenges and loss of independent functioning and depression. A need for availability of care giver to maintain and improve function and better quality of life among these dependent individuals becomes necessary².

Health care delivery in Pakistan is based on a weak infra-structure resulting in neglect of older population. Lack of residential and rehabilitation facilities for older population in the country, offers a great challenge for the existing weak and fragile infrastructure³. In present era of economic recession with increasing financial constraints on the individual families, extended family model is being replaced by nuclear family model which is further deteriorating the situation. Care of older people puts an enormous responsibility on the care givers and health care providers. They have to provide physical assistance to the older people for their daily functioning in addition to fulfilling financial, social and spiritual needs. These requirements put an additional burden on the caregivers, adversely impacting their responsibilities at job and at home. It eventually leads to further neglect of the health of older people. Government agencies and Non-Governmental organizations providing services to marginalized older population in Pakistan are very few. There are very few residential facilities, no dedicated funds or discounts for basic care, no allowances after retirement and no discounts in medical coverage. This alarming scenario is posing a major challenge for the existing health care⁴.

So far negligible research work has been undertaken to document the nutritional status of the older people in Pakistan and this type of important information thus remains fragmentary or absent. Those nutritional surveys that have been conducted in the past, however, do show poor nutritional status and high nutrient deficiencies in the general population in Pakistan. The present study, therefore, aimed to investigate the nutritional status and nutrient intake of Pakistani older people. The results are expected to help in designing policies and making plans regarding health care provision for the older people in Pakistan.

2 LITERATURE REVIEW

Malnutrition can be defined as the state of being poorly nourished. It may be caused by the lack of one or more nutrients (under-nutrition), or an excess of nutrients (over-nutrition)⁵.

The number of undernourished people in the world remains unacceptably high at near the one billion mark despite an estimated decline in 2010 for the first time since 1995⁶. This decline is largely attributable to increased economic growth in 2010 – particularly in developing countries – and the fall in international food prices since 2008. However, a total of 925 million people were still estimated to be undernourished in 2010, representing almost 16 percent of the population of developing countries and to add to it, the recent increase in food prices, will create additional obstacles in the fight to further reduce hunger⁶. Despite the fact that the majority of food and financial crises have culminated to a big extent, there prevails an inability to achieve the internationally agreed goals on hunger reduction: the first Millennium Development Goal and the 1996 World Food Summit Goal. This leads us to consider the actuality that economic growth, though a very important element, alone cannot be sufficient to reduce hunger in a given time frame and there are other deeper structural and functional problems that need to be addressed alongside. Armed conflicts around the world, natural disasters, weak governance and public administration and break down of local institutions are a few to blame⁷. The majority of the world's undernourished people live in developing countries. Two-thirds live in just seven countries (Bangladesh, China, the Democratic Republic of the Congo, Ethiopia, India, Indonesia and Pakistan) and over 40 percent live in China and India alone⁶. Projections for 2015 indicate that the number of undernourished people will decline in all developing regions, although with a different pace but still far short of the world food summit goal. The region with most undernourished people will continue to be Asia and the Pacific⁸.

Another adjoining fact is that both the number and the proportion of older persons - defined as aged 60 and over by WHO, are growing in virtually all countries, and worldwide trends are likely to continue unabated. In 2002 there were an estimated 605 million older persons in the world, nearly 400 million of whom were living in low-income countries. Greece and Italy had the highest proportion of older persons (both 24% in 2000). By 2025, the number of older persons worldwide is expected to reach more than 1.2 billion, with about 840 million of these in low-income countries⁹.

Many of the diseases suffered by older persons are the result of dietary factors, some of which have been operating since infancy. These factors are then compounded by changes that naturally occur with the ageing process⁹. Poor dentition, neuropsychological problems and immobility in older age directly affect their nutritional status¹⁰. Another factor is the price of foods rich in micronutrients, which further discourages their consumption. Compounding this situation is the fact that the older people often suffer from decreased immune function, which contributes to this group's increased morbidity and mortality. Other significant age-related

changes include the loss of cognitive function and deteriorating vision, all of which hinder good health and dietary habits in old age⁶.

The prevalence of overweight and obesity is also increasing¹¹ particularly in the older people¹². Where it is associated with increased mortality and a number of metabolic and cardiac disorders,¹³ overweight and obesity also contributes to functional decline and disability in the older people¹⁴. At the same time, quite significant numbers of old individuals are reported to suffer from underweight and are at higher risk for acute illness and death¹⁵. They also have significantly higher risk of dying within the first year of hospitalization than those with adequate nutrition¹⁶. Decreased Body Mass Index (BMI) is an indicator of energy deficiency and malnutrition, and is associated with compromised immune function, increased susceptibility to infectious illnesses, and reduced survival in the older people¹³. Under nutrition affects many older people not only because their nutrient intake, in general, may be inadequate, but also because older adults have modified requirements for several nutrients due to the effects of ageing on absorption, utilization, and excretion of nutrients as well as specific nutrient needs associated with medication use, metabolic disorders, and chronic diseases. The effects of under nutrition on immune status may be judged from the fact that a substantial part of the lean mass of human body is comprised of lymphoid tissue and with under nutrition this lean body mass is lost contributing to increased mortality caused by viral infections due to inadequate immune response¹⁷. On the other hand, the other form of malnutrition i.e. overweight and obesity also affect virtually every physiological system including the regulation of immunity and inflammation¹⁷.

Along with the global rise and similar to other developing countries, Pakistan is also expected to experience the impact of an increasingly ageing population over the next few decades. This quite sudden demographic shift can be very challenging in terms of health and nutritional care. Essential information about individuals' food intake and habits, activity, cultural influences, and the economic and social situation provide a database for nutritional assessment. Developed countries have established dedicated health care systems in order to meet the special needs of the older people. However, such programs are lacking in developing countries like Pakistan¹⁸. Hence maintaining health and well-being of this age group is becoming even more important for a developing country facing several challenges in the form of political instability, lack of economic growth, low savings and weak pension system for the older people. Geriatrics as a specialized area of medical training is neither recognized nor practiced in Pakistan. There is no widespread practice of health insurance coverage, hence, population relies on out of pocket expenditure for the treatment of all ailments. Pakistan's demographic trends given in WHO report (1998) show that between 1990 till 2010, the population aged 60+ years increased by 75.1 % and it is projected that the life expectancy will increase to 72 years by 2023. Furthermore, report (1998) also projected that 5.6 % of Pakistan's population was over 60 years of age, with a probability of doubling to 11 % by the year 2025¹⁹.

There is evidence of continued food insecurity and malnutrition in Pakistan despite significant progress made in terms of food production in recent years. According to “Vision 2030” of the Planning Commission of Pakistan, about half of the population in the country suffers from severe to moderate malnutrition, with the most vulnerable being children, women, and older people among the lowest income group. The Government of Pakistan has been taking a series of policy initiatives and strategic measures to combat food insecurity issues. These range from increasing production to food imports, implementation of poverty reduction strategies, nutritional improvement programs, as well as provision of social safety nets. However Pakistan is still food insecure and needs to address serious challenges in the implementation of these measures²⁰. The Maplecroft food security risk index (FSRI) placed Pakistan at extreme risk ranking 11th among 148 countries of the world²¹. The index measures the availability, stability and access to basic food stocks as well as the impact on nutrition and health that result from food insecurity. It rates each country based on performance across 19 key indicators including imports, exports, production of cereals, food production per capita, rate of malnourishment per capita, water resources, GDP per capita and global aid shipments²¹. The 2009 global hunger index (IFPRI) also rates Pakistan low on the scale among 29 countries around the world that have alarming levels of hunger and shows that progress in reducing hunger in Pakistan remains slow²².

The fact is that Pakistan is still in the early stages of the nutrition transition. High rates of intra—uterine growth retardation, low birth weight and subsequent malnutrition are seen. Most work done on children has concentrated on malnutrition, and obesity has not been studied adequately. However, the National Health Survey data set clearly shows the double burden of under—nutrition and over-weight in adolescents and adults. More adolescents are under weight than overweight, while the opposite is true for adults. With the high prevalence of stunting in children and a shift in dietary and lifestyle patterns, countries like Pakistan may experience a larger burden of stunted-obese individuals in the next few decades²³.

3 AIM AND OBJECTIVES

AIM: To improve the health status of older people

OBJECTIVES: These are

1. To estimate the prevalence of malnutrition of people ≥ 50 yrs in Rahim Yar khan, Jacobabad and Shikarpur by calculating Body Mass Index (through measuring height and weight) and Mid Upper Arm Circumference (MUAC)
2. To Investigate health and social status of men and women ≥ 50 years old in Rahim yar khan, Jacobabad and Shikarpur
3. To assess the dietary habits of the people ≥ 50 years in RahimYar khan, Jacobabad and Shikarpur

4 METHODOLOGY

4.1 Study Population

Study was conducted among households having men and women ≥ 50 years old in the districts Rahimyarkhan, Jacobabad and Shikarpur as per terms of reference for this study. Usually older people are defined as 60 years and above, however since the life expectancy of Pakistani people is 65.2 years¹ and the National nutritional survey 2011² also used a definition of 50 years and above for older people, hence we have defined older people as 50 years and above in this study.

4.2 Settings

The study areas were 3 districts in Punjab and Sindh Province which were purposively selected by Help age international.

RahimYarKhan:

District Rahim Yar Khan is one of the largest districts of Southern Punjab, with an area of 11,880 km², consisting of four tehsils. Total population according to 1998 census was 3,141,053. Most of the population is rural making it an agrarian society with poor socioeconomic conditions. Punjabi and Siraiki are the main languages spoken.

¹ <http://www.tradingeconomics.com/pakistan/life-expectancy-at-birth-total-years-wb-data.html>

² <http://pakresponse.info/LinkClick.aspx?fileticket=BY8AFPcHZQo=>

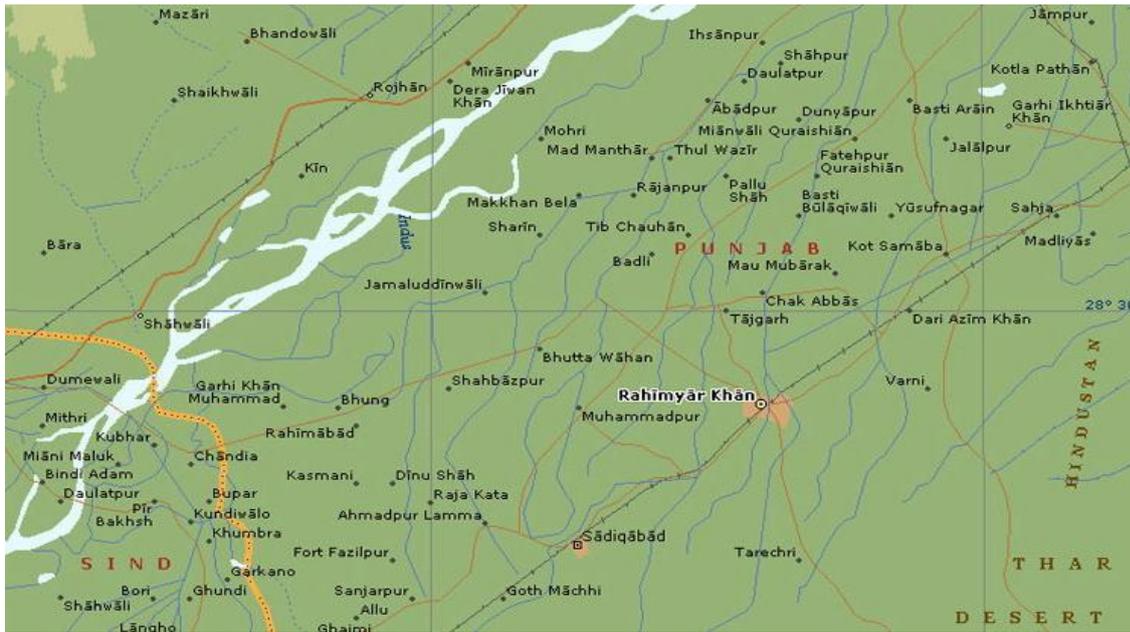


Figure 1: Map of Rahimyar Khan

Jacobabad:

District Jacobabad is a district of Sindh with an area of 5,278 km². The total population is 1,425,572 (1998 census) and most of it is rural. Sindhi is the major language of communication.

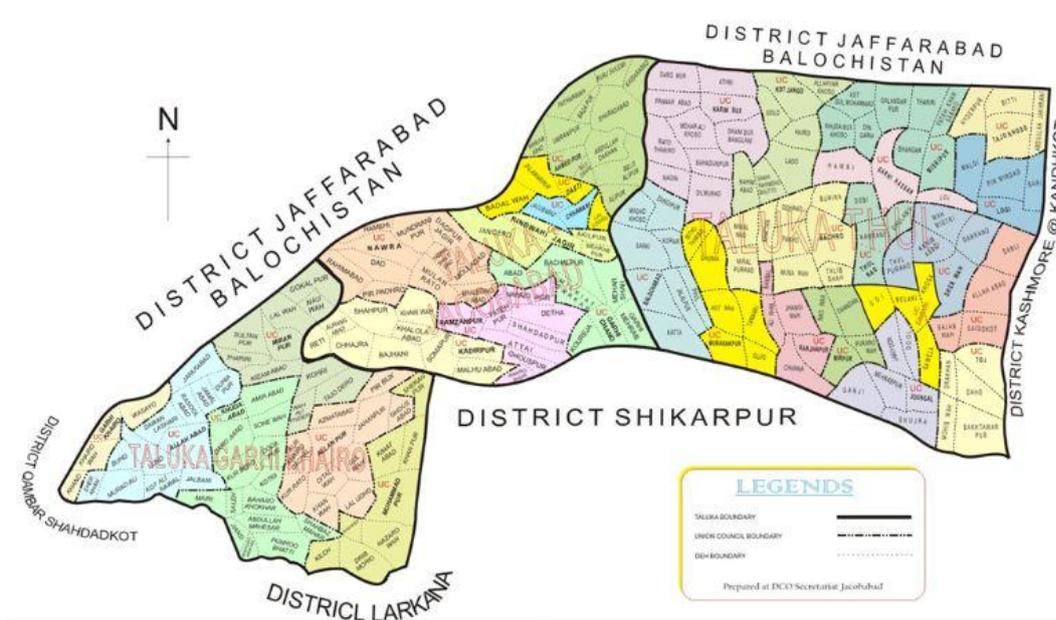


Figure 2: Map showing district Shikarpur

Shikarpur:

District Shikarpur is in Sindh spreading over an area of 2,512 km². It has a population of 880,438 (census 1998) with majority rural. Sindhi is the main language and Islam the major religion.

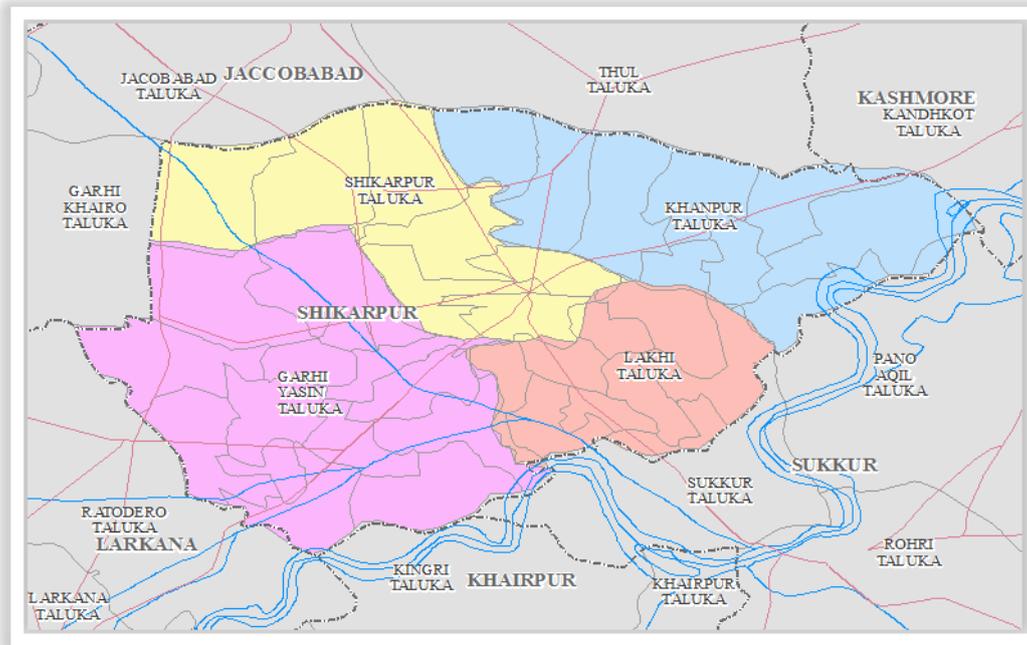


Figure 3: Map of District Jacobabad

4.3 Study Design

This assessment was carried out using both quantitative and qualitative methods.

4.4 Study Methods/Techniques

The evaluation utilized:

- a. **Quantitative technique:** Cross sectional survey was conducted with the target population in the three districts to measure the BMI and MUAC and to get data about their health habits.
- b. **Qualitative technique:** Focus group discussion with men and women ≥ 50 years in the three districts were carried out to document the reasons for the particular dietary habits and their views regarding nutrition.

4.5 Sampling strategy

The sample size calculation was based on a type I error of 5.0 % (i.e. a confidence interval of 95% and prevalence of malnutrition among older people (men and women ≥ 50 years old) to be 50%). Based on these assumptions a sample of 384 participants is derived which is then amplified with a design effect of 1.2 for adjusting the sampling strategy of multistage cluster sampling. This amplification enhanced the sample size to 462 participants. Considering 10%

nonresponse rate the sample was increased to 508 participants. However a total 514 participants were interviewed.

In the first stage of sampling, within each selected district, list of Basic Health Units (BHUs) and Tehsil Head Quarter hospitals (THQ) was considered as the sampling frame. A total of 3 BHUs and 3 THQs were selected from each district randomly. THQs were selected to represent urban and BHUs to represent rural population. List of all BHU and THQs within a selected district was acquired from the district health authorities.

The second stage of sampling was selection of 30 households within the catchment population of a selected BHU and THQs.

Procedure for Household's Selection

The procedure for household selection within an urban and rural area would be by moving to the centre/main mosque/chowk of the given area. Using the right hand rule, the first household on the right will be selected for conducting interview. Selection of households will be done through systematic sampling with a random start. Depending upon the total number of households within each selected village/cluster, a systematic interval of at-least 4 households will be maintained to select 5 households/respondents within a village.

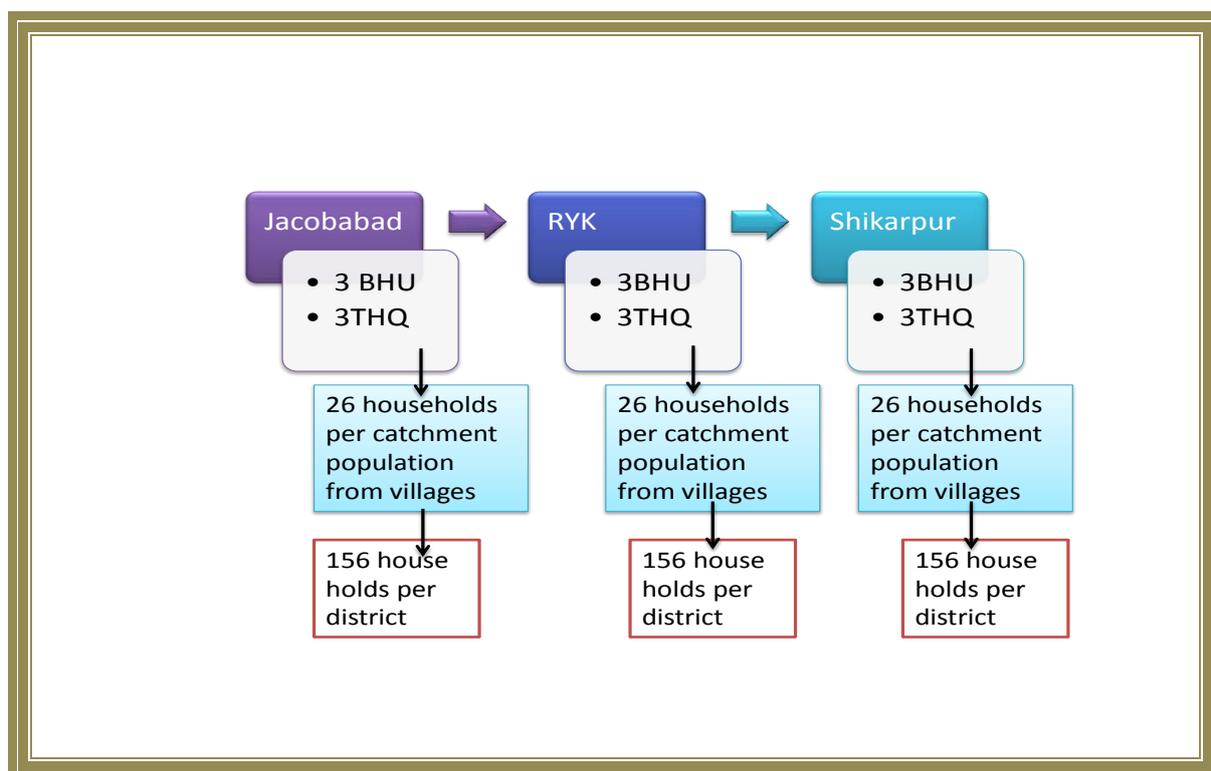


Figure 4: Household selection methodology

4.6 Research Tools

In order to meet the objectives of this study the following research tools were developed

- FGD Guide: Open ended questions were developed to gain an insight into the dietary presumptions, behaviours, patterns and reasons behind these. In addition questions were developed to get an in depth idea of the perceptions regarding the diet, health status and physical activity.
- Structured Questionnaire for cross sectional survey: structured questionnaire was developed and questions were asked pertinent to socio-demographics, economic status, knowledge related to health, importance of health, dietary habits, health seeking practices, physical activities, co-morbidity , MUAC and height and weight calculation for BMI.

4.7 Variables measured

The team measured the weight, height and mid-upper arm circumference (MUAC) of each older person using standard anthropometric procedures for older people

- Weight was measured to the nearest 0.1kg using digital electronic scales.
- Height was measured in standing position using a measuring tape in inches.
- Mid-upper arm circumference (MUAC) measured in inches according to standard criteria defined by UNICEF, using a non-stretch measuring tape. With the left arm bent the midpoint of the arm between the shoulder and tip of elbow was found. Measuring tape placed at the midpoint of the left upper arm, while the arm hanging down the side of the body and relaxed

4.8 Pilot Testing

After the preparation of research tools in English, they were translated in Urdu for easy understanding of the interviewers and the respondents. In order to check the validity of the translation the tools were back translated. These translated tools were then pretested to detect any required changes, omissions, additions, problems and the time estimate for each interview. The pretesting enabled the researchers to finalize the tool, devise the training design and mechanism and comprehend logistic requirement in the field.

4.9 Training Of Data Collectors

Training of the data collectors was a two phased process. In the first phase two team supervisors were trained by the qualitative and the quantitative experts themselves. A rigorous training was provided to the supervisors in Islamabad, based on explanation of the research ethics, the various protocols of moving into and engaging the community, detailed description of questionnaires and filling them (including the procedures of taking various measurements such as height, MUAC and weight) and the elucidation of an assortment of calculations to be made based on data.

In the second phase the two days training of the field workers in the selected districts was done. Any difficulties or ambiguities faced were conveyed to and clarified by the Qualitative/Quantitative experts.

4.10 Data Collection

The data collection team comprised of five members including two males and two female data collectors and one supervisor in each district. The team would reach a village and sample the households according to the sampling strategy. The help of the local village influential was sought a day earlier to get easy access to the households.

After knocking at the door, and if the house had an old member, a written consent was obtained and the relevant data was collected and recorded on the questionnaire. The supervisor would check for any errors or omissions in the daily data before leaving the village.

4.11 Data Management

Data collected from the three districts was daily scrutinized by the team supervisor/team leaders for completeness and accuracy. Quality assurance of the data was done by spot checking and verifying the data collected by the team members, on a regular basis, by the team leader. Incomplete data used to be sent back to the respective team member for completion. All the data collected at the district level was weekly dispatched to the researchers at the federal office. The data was kept secured in the project head office in hard and soft copies.

4.12 Data Analysis

4.12.1 Quantitative data analysis

The data was entered in SPSS version 16. Data was collected in the field on paper based forms by the research team. Necessary checks were put in to ensure minimal data entry errors. Data was checked by running basic frequencies and means to see trends and identify possible errors. Afterwards, data was analysed using SPSS and Microsoft Excel. Means and standard deviations for continuous variables and frequencies for categorical variables were calculated. The analysis included the basic description of the sample in terms of socio-demographics; knowledge, perception & practices about health; dietary habits; physical activity; use of health care services and results of quantitative measurements (BMI).

4.12.2 Qualitative data analysis

For the Qualitative data, manifest and latent content analysis was applied to the focus group discussions. This was done in a step wise method. The transcribed data was read several times by the qualitative expert and the principal investigator to get a sense of the whole. At first the data was segmented according to the related questions asked and was cleaned i.e. the information related to the research objectives was extracted from it. As a second stage the common responses of the people were put together and the data was coded. These codes were

grouped together to develop subcategories, categories and finally themes. As a final stage the themes were interpreted and described keeping in view the cultural context of the respondents. To ensure the quality of analysis the codes were developed from the condensed meaning units by both the consultants separately and then compared. The very contrary codes were reevaluated and a consensus reached. The subcategories, categories and the final themes emerged with the agreement of both the consultants.

5 ETHICAL CONSIDERATIONS

The proposal was stringently reviewed by the Ethical Review Committee assigned by National Public Health Institute (Health Services Academy).

A written informed consent was obtained from all the interviewees. It was the duty of surveyors to narrate and explain the objective and the contents of the interviews to study participants. The informed consent form described the purpose of this study. The participants were encouraged to ask questions and queries regarding the assignment.

The participants with serious illness or disability were assisted and referred to the local basic health units for further treatment.

6 RESULTS

Results are presented in two main sections i.e. Quantitative and Qualitative described as follows

6.1 Quantitative results

A total of 514 subjects were sampled for the quantitative survey.

6.1.1 Socio Demographic Characteristics

Descriptive statistics of demographic variables were carried out. Majority of the participants were male 58 % and the mean age of the respondents was 60 ± 8.8 SD (Figure 4 and 5)

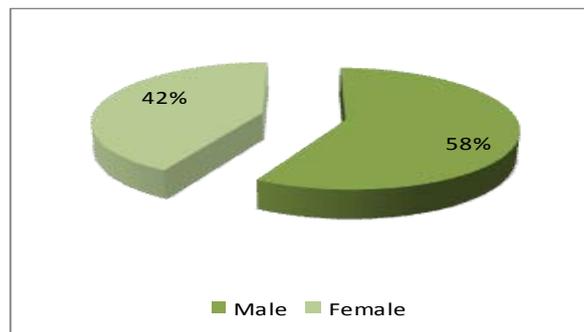


Figure 5: Sex distribution of the participants

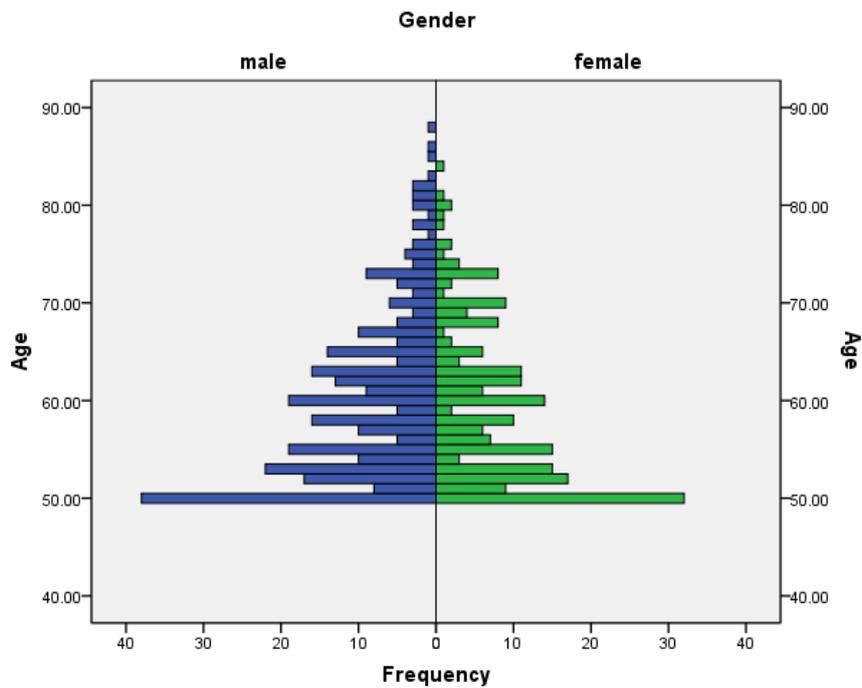


Figure 6: Age and sex distribution of the participants

Majority of the respondents were married, mean length of marriage being 35.4 ± 12.5 years. However the proportion of widows was found to be more (24%) (Table 1)

Table 1: Marital status of the participants	
Marital status	Frequency (%)
Un Married	3 (0.6%)
Married	360 (70%)
Divorced	2 (0.4%)
Widow	123 (24%)
Widower	26 (5%)

Educational status was low, as 25% reported to have any formal schooling and one third reported to have religious schooling (fig.6). Highest education reported was up to post graduate level and was only 1%. The education status of the spouse was not different as majority had no formal schooling or religious schooling (table 2).

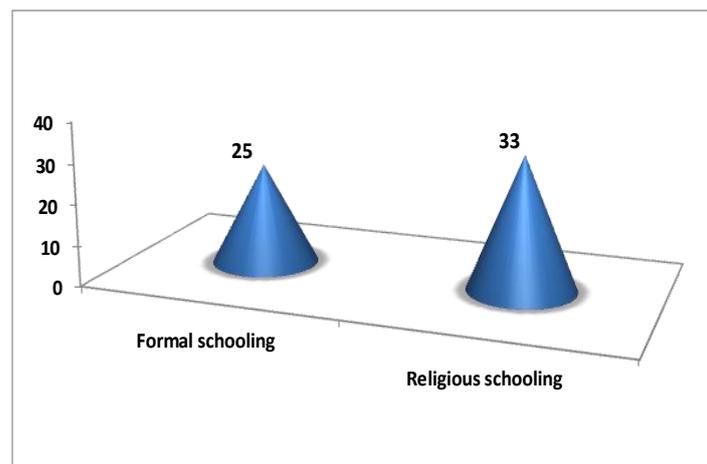


Figure 7: Formal and religious schooling of respondents

Table 2: Education status of the participants

Variable		Jacobabad n	RYK n	Shikarpur n	N (%)
Formal schooling		46	42	46	130 (25)
Religious schooling		43	74	53	170(33)
Highest education level completed	1. No education	139	106	134	379 (74)
	2. Less than primary	3	15	16	34(7)
	3. Primary	17	11	14	42 (8)
	4. Middle	7	9	6	22 (4)
	5. Secondary	2	8	4	14 (03)
	6. Intermediate	8	1	0	9 (2)
	7. Graduate	4	3	1	8 (2)
	8. Postgraduate	0	0	6	6 (01)
Spouse formal schooling		29	32	18	79(15)
Spouse religious schooling		43	35	43	121 (24)
		137	118	138	393 (76)
Highest education level of spouse	1. No education	149	120	163	432 (84)
	2. Less than primary	13	2	10	25 (5)
	3. Primary	7	11	5	23 (4)
	4. Middle	1	4	0	5 (1)
	5. Secondary	5	14	0	19(4)
	6. Intermediate	3	2	3	8 (1)
	7. Graduate	1	0	0	1 (0.2)
	8. Postgraduate	1	0	0	1(0.2)

6.1.2 Household characteristics and Social status

Average number of family members in the household was large (table 3). Considering the large family size the average monthly house hold income was small and rooms were crowded.

Table 3: Monthly income and house hold characteristics

Variable		Mean ± SD
Total number of family members in the household		9±4
No of own children		5.5±3.6
No of rooms in house		2.7±1.4
Total average monthly household income		Rs.8611±9406
Head of the family (decision makers)	Self	56%
	Husband	26%
	son	18%

Majority of older men were the decision makers in the home, whereas husband or the son was the decision maker for older women.

Majority of older men were still working, mostly as farmers or shopkeepers. The women participants were mostly house wives.

Table 4: Occupation status of respondents

Current occupation	MALE	FEMALE	N (%)
1. None	115	0	115 (22)
2. Housewife	0	194	194 (38)
3. Farmer	92	15	107 (21)
4. Teacher	14		14(3)
5. Shop	43	4	47 (9)
6. Blacksmith	3		3(1)
7. Labour work	30		30(5)
8. Government employee	2		2(0.38)
9. Private employee	1	1	1(0.19)
10. LHV			1(0.19)

6.1.3 Nutritional status

Height, weight and MUAC of the participants were measured by using standard techniques. Once a person height and weight was determined, the next step was to calculate the Body Mass Index (BMI). The results were then categorized as underweight, normal, overweight and obese. The results were interpreted using standard weight-status categories given by WHO that are the same for all adults men and women³. Please refer to table 5 and 6 below.

Table 5: Anthropometric and BMI measurements

Variable	Mean \pm SD	95% CI Lower limit; upper limit
Height in inches	59.8 \pm 6.6	58.2; 60.39
Weight in kg	64 \pm 13.1	62.9; 65.1
Mid Upper Arm Circumference(MUAC) mm	272 \pm 65.5	266.5; 277.9
BMI (weight in kg/height in m ²)	25.7 \pm 6.9	25.1; 26.3

³ http://apps.who.int/bmi/index.jsp?introPage=intro_3.html

Results of BMI

BMI was calculated as

$$\text{BMI} = \text{Weight} / \text{Height in m}^2$$

Table 6: BMI categories and prevalence

BMI Value	Weight Status	Prevalence
Below 18.5	Underweight	9 % (95% CI =6%; 11%)
18.5 - 24.9	Normal	43% (95% CI=38%; 47%)
25.0 - 29.933	Overweight	27% (95% CI=24%; 31%)
30.0 and above	Obese	21% (95% CI= 18%; 25%)

BMI calculation showed that 9% of the participants were underweight, 43 % were normal, 27% were overweight and 21% were obese. However, disaggregating the data according to gender, obesity is found to be more in females 23% as compared to males 21% (Table 7).

Table 7 : BMI distribution according to sex

BMI Value	Weight Status	Men frequency (%)	Women frequency (%)
Below 18.5	Underweight	24 (8)	20 (9)
18.5 - 24.9	Normal	132 (44)	88 (41)
25.0 - 29.9	Overweight	82 (27)	57 (27)
30.0 and above	Obese	62 (21)	49 (23)

BMI distribution is given in the following figure

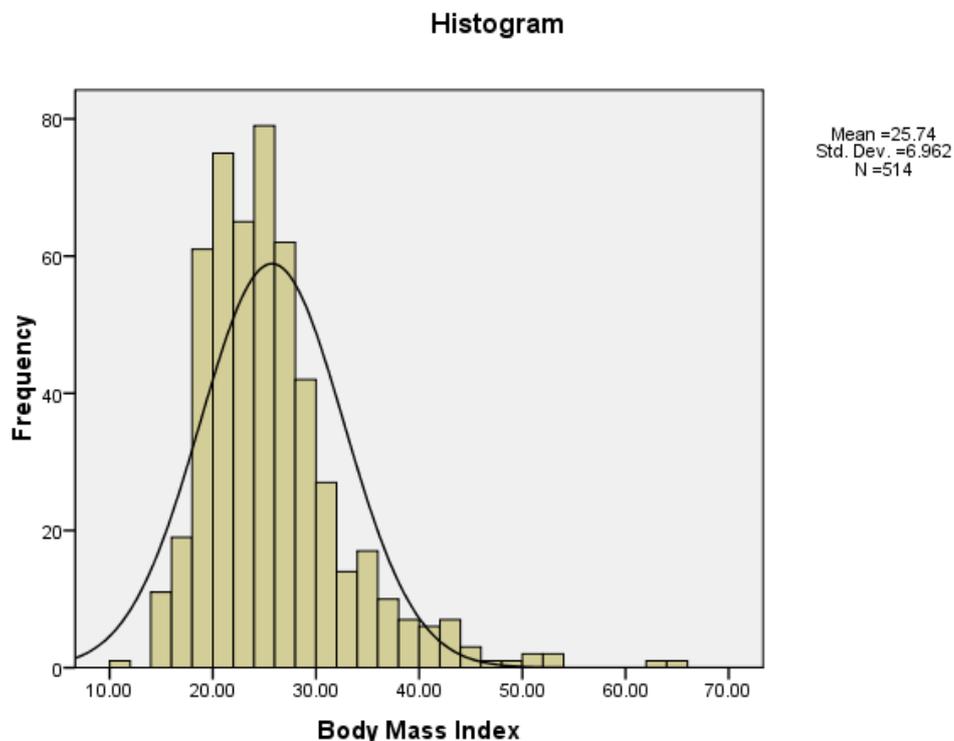


Figure 7: BMI distribution

Results of MUAC

Mid upper arm circumference of the participants was taken. This was further interpreted on the basis of standard criteria⁴ given as follows.

Table 8: MUAC and nutritional status

Class	Indicator	Prevalence
Severe acute under nutrition	<185mm	3 % (95% CI=1; 4%)
Moderate acute under nutrition	≥185-210mm	2 % (95% CI= 1; 4%)
Normal	≥210mm	95% (95% CI=93; 97%)

⁴ Ferro-Luzzi and James 1996; Duffield 1998; Strickland and Ulijaszek 1992)

These thresholds used in the previous research have been shown to be associated with increased mortality and morbidity in chronically undernourished and older populations (Ferro-Luzzi and James 1996; Duffield 1998; Strickland and Ulijaszek 1992).

Categorizing MUAC according to sex following are the results

Table 9: MUAC and nutritional status according to sex

Class	Indicator	Male Frequency (%)	Female Frequency (%)
Severe acute under nutrition	<185mm	13 (4)	1 (0.4)
Moderate acute under nutrition	≥185-210mm	6 (2)	6 (3)
Normal	≥210mm	281(96)	207 (97)

6.1.4 Dietary Habits

When asked about the dietary habits a significant proportion was only taking two meals a day. The variety of food consumed routinely mainly included vegetables and pulses. Daily consumption of fruit was reported in about half, only 83% consume meat once in a month. About 5% were taking additional multivitamins. (Table 10)

Table 10: Dietary Habits

Variable		Jacobabad n	RYK n	Shikarpur n	N (%)
Number of meals in a day	One	1	2	1	4(1)
	Two	107	50	79	236(46)
	Three	72	101	99	272(53)
	Four	0	0	2	2(0.3)
Daily Consumption of fruit		116	106	62	283(55)
Daily Consumption of vegetables		174	152	165	490(95)
Monthly consumption of meat *		160	131	140	431(83)
Added supplements (milk, multivitamins, calcium)	Vitamin	8	5	11	24(5)
	Iron	9	2	1	12(2)
	None	163	146	169	478(93)

**None were having meat daily*

Table 11: Physical activity

Variable		Jacobabad n	RYK n	Shikarpur n	N (%)
Routine physical activity		44	66	33	146(28)
Reported type of physical activity	• Domestic work (cleaning, cooking)	17	58	22	97(48)
	• Farming	34	26	47	107(53)
	• Namaz	24	0	4	28(14)
	• Walk	3	1	2	6(3)
Duration of physical activity	1-2 Hours	29	21	27	77(53)
	2-3 hours	12	7	31	50(14)
	> 3 hours	1	1	1	3(2)

6.1.5 Physical Activity

Assessment of functional ability is important in the evaluation of older people; it is generally rated in terms of daily routine activities. When inquired about routine physical activity about one fourth of the participants reported to perform such activity, which mainly included their work activities or household work for women. Offering prayers was also reported as a routine physical activity in some (Table 11).

The duration of this activity was mainly 1-2 hours in a day. Walk as an exercise was only reported by 3%.

6.1.6 Health status

Inquiring about the current health status, 65% of the participants reported to be suffering from a diagnosed illness. When further inquired about type of illness, arthritis, hypertension and diabetes were the top three diseases. Duration of disease varied from 1-10 years.

Visual impairment was reported by 1%. However 73% of the participants were taking regular medication for their illness.(Table 12)

Table 12: Current Health status

Variable		Jacobabad n	RYK n	Shikarpur n	N (%)
Suffering from any disease (diagnosed disease)		102	105	128	335(65)
Specific disease	1. Arthritis	32	36	38	106(32)
	2. Hypertension	24	29	45	98(29)
	3. Diabetes	17	14	17	48(14)
	4. TB	6	1	3	10(3)
	5. Heart disease	2	5	0	7(2)
	6. Hepatitis	0	3	1	4(1)
	7. Visual impairment	0	2	2	4(1)
	8. Other minor	7	21	16	44(13)
Duration of disease	1. 0-2 years	46	23	41	110(33)
	2. 3-4 years	11	31	31	73(22)
	3. 4-5 years	14	25	22	61(18)
	4. 6-7 years	8	4	6	18(5)
	5. 8-9 years	11	8	0	19(6)
	6. 10 or more	0	14	23	37(11)
Taking regular medications		87	68	91	246(73)

6.1.7 Health behavior and health seeking

Surprisingly health was not categorized as very important by majority; they thought it was somewhat important to them. Majority think that maintaining a good diet will keep them healthy on the other hand only 4 % think that exercise can also help for maintaining health. 17% of the participants take no measures for maintaining health. (Table 13)

Table 13: Importance of Health

Variable		Jacobabad n	RYK n	Shikarpur n	N (%)
Importance of health	• Very important	36	77	84	197(38)
	• Somewhat important	68	63	77	208(40)
	• Never thought about it	71	13	7	91(18)
	• Not important at all	5	0	13	18(4)
Reported Measures adopted to keep healthy	• Good diet	121	106	143	400(78)
	• Exercise	10	3	10	23(4)
	• Nothing	49	11	28	88(17)
	• Proper treatment of the illness	0	3	0	3(1)

Further inquiring about the health seeking behaviour of the participants 87% reported to seek health care services ever. One fourth seeks services weekly, about half monthly and 19% only when needed. Most of the participants 68% prefer public health facility whereas 23% consult privately. However doctor was the choice of health care provider 86%. (Table 14)

Table 14: Health seeking behavior

Variable		Jacobabad n	RYK n	Shikarpur n	N (%)
Seeking health care services		170	103	174	447(87)
Weekly		39	21	57	117(26)
Monthly		114	56	77	247(54)
When needed		17	26	40	83(19)
Type of Health facility	<ul style="list-style-type: none">• Public• Private	169 10	50 65	132 46	351(68) 121(23)
Type of Health care provider	<ul style="list-style-type: none">• Doctor• Pharmacist• Dispenser• Hakeem	161 1 0 0	71 8 19 3	168 4 0 0	400(86) 13(3) 19(4) 3(1)

6.2 Qualitative data

The demographic characteristics of the Focus Group Discussions participants from the three districts are given in the following table.

Table 15: Demographic details of the FGD participants

	Males	Females
Total Number	34	29
Rahim Yar Khan	12	13
Jacobabad	12	08
Shikarpur	10	08
Education (%)		
Nil	64.7	96.6
Less than primary	14.7	3.4
primary	11.8	0
middle	5.9	0
Post Graduate	2.9	0
Age (Mean ± SD)	59.71 (8)	58.55(10)
No of Children (Mean ± SD)	6(3)	6(2)

Detailed demographic profiles have been attached as annexure (Annex1, Annex2, and Annex3)

On the basis of the qualitative data analysis following main themes have emerged

1. Perceived healthy diet and body size
2. Barriers in getting desired diet
3. An insight into life style
4. Perceived health status and demands for betterment

The matrices of the qualitative analysis have been attached as annexure (annex 4, 5, 6)

Description

The analysis of the qualitative data from the three districts generated similar results with minor differences. As a result the themes that were generated for the three districts are analogous to one another. The trivial differences in the results have been curtly expressed in the three matrices drawn (annex 4, 5, 6) and are explained in details in the theme wise description in the paragraphs below.

6.2.1 Perceived healthy diet and body size

When inquired about the diet which they considered healthy and the number of meals/day with the snacks taken in between the FGD groups from the three districts had more or less the same to say. Taking one name in particular, “Desi Ghee” (a kind of oil used for cooking

purpose high in saturated fats) is quite well-liked, used and considered healthy in these communities.

"We eat the food which is available at home however ghee (desi) is good to eat (female RYK)."

Milk and fruits were also said to be healthy by the people of all the three districts. Along with these although, as mentioned by many, that they could not afford to have it but meat was also considered a basic part of a healthy diet. Vegetables were also mentioned by a few of them as an essential part of the healthy diet. The frequency of meals preferred by all the districts were three with most having fruits as snacks in between the meals along with some others beverages.

"I consider milk, fruits and paratha (ghee wali roti) are healthy diet (Male RYK)."

"I think meat, milk, desi ghee, clean fresh vegetables are a healthy diet (Male SP)."

The participants seemed to have a fair concept of the healthy diet as most of them came up with mixed sort of composition catering all the essential components necessary to keep our bodies healthy and fit.

"Healthy diet is clean and fresh vegetables with milk and meat (Female SP)."

Regarding the healthy body size there was an overall accord for the average body size, with women from the districts of Rahim Yar Khan and Jaccobabad favouring average body size where as men from the same districts favouring slim sizes

"I think people with average body size are healthier than bulky people (Female RYK)."

However, it was an observation that the people, although very less educated had an awareness of the relation between illness and the weight of body.

"Body size shall be average as both fat and very slim people have more chances of being ill (Male JA)."

6.2.2 Barriers in getting desired diet

Majority from all the three districts have vegetables as the basic component of their diet. Most of the days in a week, they cook vegetables with potato, peas and cauliflower being the dominant ones.

"We cook vegetables regularly and diet pattern is changed after 5 to 7 days when we have sweet dish, meat and rice (male RYK)".

The use of meat, may it be chicken, mutton, beef or fish was occasional and the frequency differs in different households. Some families don't have meat for weeks and some only on certain occasions as religious festivals or when there are guests at home. This is evident from a number of responses stated below.

"We use cauliflower, potatoes, peas and tomato with garlic. We usually cook meat after three or four months but if we do not have money then we only have meat on the occasions of Eid and Shab-e- barat. Due to shortage of money we cook meat very rarely (Female RYK)".

"Our diet is changed only when we have guests at home. We have no earning member in family due to which we have even pulled out our kids from school (Female JA).

"We are poor and eat only potato, daal and vegetables with meat and rice on the 8th day (Male SP)."

"We usually have cabbage, daal and potato with seasonal fruits. We have meat after around 15 days and fish only in winters (Female SP)".

increased quantity of meat and an enhanced quantity of vegetables in their usual diet. They were not very well contented with their usual diet and desired for more.

"I want to improve the quantity of meat and chicken in my diet but we are poor people and the prices are rising every day, making us unable to afford (Male SP)".

Further inquiry into the issue lead to the finding that it is the high price and economical non affordability of these families which rendered them unable to consume the diet they yearned for. Many complained of the everyday increasing prices of the food components and

"Prices of meat, beef and chicken is increasing as only chicken is Rs.200/ per kg so we cannot afford to change our diet (Female RYK)."

These high prices leave them with no choice but to consume vegetables to satiate their hunger and to be in good physical shape and to be alive. This inflation is not only affecting their diet but lifestyle and living conditions as a whole as affirmed by one of the respondents.

"I want to have increased amount of mutton and chicken in my diet but we are farmers and we cannot afford. These high prices are affecting our lives (Female SP)".

It was evident from the responses that although the food prices are increasing but the wages they earn on a daily or monthly basis are not increasing at the same rate so as to match the expenses. Earning is no match and cannot contest with the everyday price rise.

"I would like to have mutton with biryani in my diet but we are a total poor community working as daily wages labourers and the food prices are increasing day by day, which, we are unable to afford (Male JA)".

In order to confirm whether the financial non affordability is the only reason of not having the preferred food types, the availability and personal preference for vegetables was also inquired for. The responses lead to conclusion that physical access, although vegetables bought from vendors were more accessible but the meat market as well, because of not being very far from the residential area, could not be the reason behind not having meat more often as compared to vegetables. Ultimate blame had to put upon the high prices of meat and rice which lead the community to restrict themselves from using them.

6.2.3 An insight into life style

To gain an insight into the life style of the older people community in the three districts they were inquired about the physical activity, the quality of their drinking water and addictions which prevail there. The results, as they assembled, very surprisingly showed that even at this age the bulk of population is very active physically. All the women in the FGD groups participate actively in the daily house hold chores. Apart from the household work many women especially in the Shikarpur district are farmers and help their men at their lands. Some have live stock at homes and take care of them.

"I am a farmer and help in the fields. I also work in my house all day long and I think that is enough physical activity for me (Female SP)".

"I do work at home like wash clothes, dusting etc (Female RYK)."

The men are all labourers or farmers and remain busy all day long in these activities. They have to be this active and undergo all this exertion to make both ends meet as poverty prevails predominantly in large areas of these districts.

"Most of us are farmers here and we work all day long (Male SP)"

They are of the view that this physical activity is enough for them and they do not need extra time out to perform special exercises or indulging in other recreational physical activities. As far as their water supply is concerned all the three districts used water from hand pumps and considered it safe. Although a couple complained of germs in water but neither of them could not justify their claim as they never had it checked.

"We get underground water and its quality is fine (Male RYK)."

Mixed responses were gathered when they were asked about the various addictions prevailing in the community. Majority agreed on the fact that smoking and snuff usage are ubiquitous in the three districts.

"Many people use snuff and smoke cigarette as they feel uncomfortable with the more severe addictions (Male RYK)."

"Most of the older people people use snuff and they smoke" (Male SP)

Some were of the view that hash, heroine and alcohol are also used by the older people population but in a clandestine manner and not very openly as that of smoking or snuff.

"Snuff and smoking are very commonly used here. Heroine and hash are used secretly and alcohol too (male JA)".

6.2.4 Perceived health status and demands for betterment

Quite a number of diseases were quoted to be present among the older people community of the three districts but a very few of them were viewed as cropping up due to malnourishment or the pattern of diet that they use. The females mostly complained of suffering from joint pains apart from sugar, eyesight defects and high blood pressure.

"I think due to malnutrition many older people suffer from sugar and hepatitis C (Male RYK)."

"Weakness of eye sights is more common and this is due to non-availability of healthy diet (Female RYK)"

They wanted government to do more for the older people population; nearly all demanded that government should decrease the prices and formulate feasible availability of subsidized food products. They also demanded that government shall plan and devise special campaigns to perk up the diet and overall health of the older people populations.

"If they want to do something for us they should ensure provision of food and subsidy be given as quality is linked with price. They should also campaign for healthy food (Male RYK)".

Some also demanded to ensure that labelling of the various food product wrapped in packets be in local language or in Urdu so that they may better understand it.

"Many people have sugar and BP problems here but I am quite healthy. Government shall discount the food prices, should campaign for healthy eating and the food labels should be in local languages (Male SP)".

A few were quite annoyed with the government policies and blamed it of establishing nothing so as to resolve tribulations faced by the older people population. They paid their tribute to the NGOs as they considered them to be working more towards their betterment as compared to the government itself and demanded the government to take on and fulfil its responsibilities.

"I am suffering from eyesight problems and joint pains. Rest sugar and BP are common here. I have only seen NGOs working to some extent for our betterment but government doesn't support in any sense. Government shall make special policies to facilitate the older people (Male JA)".

7 DISCUSSION

The prevalence of acute malnutrition found in this survey differs slightly depending on whether we use body mass index (BMI) or mid-upper arm circumference (MUAC). BMI is not as good as MUAC for screening as MUAC is much less affected by body shape and edema. However, both of these measures show that comparatively a small percentage of older people have malnutrition. In this study, obesity and overweight is one of the concerns, these findings are consistent with another study carried out nationwide⁵ where majority of the older people were either obese or overweight. The reasons for such high BMI being unhealthy eating habits, lack of exercise and additional chronic diseases.

Over all the findings suggest that there is limited knowledge and awareness regarding a healthy life style in the study districts. Majority of the participants are poorly educated and their perception regarding health is not satisfactory. In addition, most of the older men being head of the family are under extra burden due to financial constraints so they are still working. Furthermore the added chronic diseases have further limited their physical activity.

Diabetes, high blood pressures are usual yet, there is no modification in the dietary habits or daily routine. The health seeking behavior is reported to be good. By majority of the participants disability due to disease is considered to be part of the aging process, the perception that needs to be addressed.

Although qualitative findings reveal that most of them are cognizant with the essentials, and quote foods from a variety of groups to be healthy, but this was in contrast to their actual intake of the balanced diet as revealed from qualitative findings. The financial constraints keep them from achieving the desired nutrition.

.

⁵ National nutritional survey. Agha Khan University, Pakistan, 2011

8 CONCLUSIONS AND RECOMMENDATIONS

This study carried out in three districts gives a clear picture of the situation of older people. Changes are required from policy level so that older people health can be focused. Although, Interventions in an older people population may not be expected to produce such obvious responses as, say, increased growth in height among children. The likely response would be a reduction in morbidity and mortality at a specific age. A typical example of intervention would be an exercise programme in a nursing home, designed to improve health status for people suffering from arthritis or such disease.

Following are some of the recommendations deduced from this study

1. Creating awareness among older people

The study leads us to the fact that majority of older people are neither aware of a healthy life style nor do they take any specific measures for keeping themselves healthy. Obesity and overweight is more as compared to normal weight. Exercise or any leisure activity is not considered to be a part of healthy life. Efforts are required to create awareness regarding healthy life style among older people.

2. Support system for older people

Extended family system in Pakistan helps provide opportunity to family members to care for older people living with them. However with a large family size and with a low monthly house hold income, financial pressures are also increased upon the head of the family which makes them to still earn resulting in neglect of their own health. Government agencies and Non-Governmental organizations providing services to marginalized older people in Pakistan are very few and of questionable value. There are very few residential facilities for older people, no dedicated funds or discounts for basic care, no allowances after retirement and no discounts in medical coverage. This scenario is posing a major challenge for the existing health care system and it needs to be improved

3. Obesity control

The findings suggest that most of the participants are obese and overweight. The major factors for such high BMI being unhealthy eating habits, lack of exercise and additional chronic disease restricting mobility as well. Focus is required to control obesity; however this requires efforts from an early age so that one entering an older age people should get conscious about their eating habits.

ANNEXURES

Annexure 1: Demographic Details of the FGD participant Rahim Yar Khan:

S. NO.	NAME	AGE	OCCUPATION	MARITAL STATUS	EDUCATION	No. Of CHILDREN
1.	Female 1	50	Laborer	Married	Less than primary	5
2.	Female 2	60	Laborer, utensils	Married	Nil	11
3.	Female 3	56	Laborer, utensils	Widow	Nil	4
4.	Female 4	77	Nil	Widow	Nil	5
5.	Female 5	70	Laborer	Married	Nil	5
6.	Female 6	50	Laborer	Widow	Nil	10
7.	Female 7	52	Laborer	Married	Nil	6
8.	Female 8	54	Laborer	Married	Nil	8
9.	Female 9	57	Laborer	Married	Nil	7
10.	Female 10	54	House wife	Widow	Nil	9
11.	Female 11	65	House wife	Married	Nil	8
12.	Female 12	54	House wife	Married	Nil	7
13.	Female 13	58	House wife	Married	Nil	1
14.	Male 1	51	Tyer shop	Married	Primary	1
15.	Male 2	56	Laborer	Married	Less than primary	3
16.	Male 3	62	Laborer	Married	Nil	7
17.	Male 4	73	Laborer	Married	Nil	9
18.	Male 5	61	Laborer	Married	Less than primary	6
19.	Male 6	59	Laborer	Married	Nil	6

20.	Male 7	58	Nil	Married	Less than primary	7
21.	Male 8	52	Laborer	Married	Nil	8
22.	Male 9	62	Laborer	Widow	Nil	0
23.	Male 10	70	Laborer	Married	Nil	7
24.	Male 11	69	Laborer	Married	Primary	5
25.	Male 12	82	Laborer	Widow	Nil	8

Annexure 2: Demographic Details of the FGD Participants Shikarpur:

S. NO.	NAME	AGE	OCCUPATION	MARITAL STATUS	EDUCATION	No. Of CHILDREN
1.	Female 1	72	Farmers	Widow	Nil	6
2.	Female 2	52	Farmers	Married	Nil	5
3.	Female 3	50	Farmers	Widow	Nil	7
4.	Female 4	53	Farmers	Widow	Nil	7
5.	Female 5	55	Housewife	Married	Nil	5
6.	Female 6	52	Farmers	Married	Nil	6
7.	Female 7	58	Housewife	Married	Nil	2
8.	Female 8	96	Nil	Widow	Nil	10
9.	Male 1	55	Laborer	Married	Nil	5
10.	Male 2	68	Nil	Widow	Nil	6
11.	Male 3	64	Farmer	Married	Middle pass	4
12.	Male 4	66	Farmer	Married	Less than primary	10
13.	Male 5	53	Farmer	Married	Less than primary	15
14.	Male 6	50	Teacher	Un Married	post graduate	Nil4

15.	Male 7	68	Farmer	Married	Middle pass	2
16.	Male 8	55	Farmer	Married	Nil	4
17.	Male 9	63	Nil	Married	Nil	7
18.	Male 10	50	Laborer	Married	Nil	7

Annexure 3: Demographic Details of FGD participants Jacobabad:

S. NO.	NAME	AGE	OCCUPATION	MARITAL STATUS	EDUCATION	No. Of CHILDREN
1.	Female 1	52	House wife	Married	Nil	6
2.	Female 2	62	House wife	Married	Nil	5
3.	Female 3	55	farmer	Married	Nil	7
4.	Female 4	68	Nil	Widow	Nil	9
5.	Female 5	53	farmer	Married	Nil	4
6.	Female 6	59	farmer	Married	Nil	5
7.	Female 7	51	Nil	Married	Nil	7
8.	Female 8	53	farmer	Widow	Nil	7
9.	Male 1	55	laborer	Married	Primary	6
10.	Male 2	59	laborer	Married	Nil	4
11.	Male 3	71	Farmer	Married	Nil	5
12.	Male 4	58	Laborer	Married	Nil	9
13.	Male 5	54	Nil	Married	Nil	9
14.	Male 6	51	Nil	Widow	Nil	3
15.	Male 7	55	Street Hawker	Married	Nil	7
16.	Male 8	50	Laborer	Married	Nil	9
17.	Male 9	58	Nil	Married	Nil	6
18.	Male 10	63	laborer	Married	Nil	3

19.	Male 11	58	Nil	Married	Nil	3
20.	Male 12	51	laborer	Married	Primary	4

Annexure 4: Matrix of qualitative data analysis for Rahim Yar Khan

Matrix of qualitative data analysis: Rahim Yar Khan			
Subcategories	Categories	Themes	
<ul style="list-style-type: none"> Milk is a healthy diet Meat comprises healthy diet fruits are a healthy diet desi ghee considered a healthy diet 	<ul style="list-style-type: none"> Milk, meat, fruits and desi ghee are components of a healthy diet 	PERCEIVED HEALTHY DIET AND BODY SIZE	
<ul style="list-style-type: none"> having three meals per day is most common fruits are taken as snacks and many take nothing 	<ul style="list-style-type: none"> preferred number of meals in a day with in between snacks 		
<ul style="list-style-type: none"> Women consider average body weight as perfect Slim body size considered perfect by men 	<ul style="list-style-type: none"> Average to slim body size perceived perfect 		
<ul style="list-style-type: none"> Vegetables are the most usually consumed diet Meat is used occasionally Meat consumed with gaps of some to several days Rice consumed with gaps of days Ghee is used for cooking of food 	<ul style="list-style-type: none"> Vegetables the most usual component of diet with occasional meat cooked in “Ghee” 		BARRIERS IN GETTING DESIRED RATHER ROUTINE DIET
<ul style="list-style-type: none"> Wish to add more meat to usual diet Wish to have more milk in usual diet Wish to have more fruits in usual diet 	<ul style="list-style-type: none"> Desire of being able to add more meat, milk and fruits to diet 		
<ul style="list-style-type: none"> Food products are very expensive Earning is less Vegetables are readily available Meat market at a distance from residential area 	<ul style="list-style-type: none"> Food prices are high as compared to earnings Vegetables are more easily available as compared to meat 		

<ul style="list-style-type: none"> Labour work is the physical activity Doing house hold chores is the physical activity 	<ul style="list-style-type: none"> Daily labour work and household chores comprise the physical activity 	AN INSIGHT INTO LIFESTYLE	
<ul style="list-style-type: none"> The water supply is from hand pimp Majority considers water clean and pure A few consider water contains germs 	<ul style="list-style-type: none"> Use hand pump and consider the water clean 		
<ul style="list-style-type: none"> Most people are addiction free among community Cigarette is the most common addiction Snuff, hash and heroin addiction are rare 	<ul style="list-style-type: none"> Smoking is common 		
<ul style="list-style-type: none"> Majority consider themselves healthy Women suffering from joint pains Eye sight defects are complained about 	<ul style="list-style-type: none"> Majority satisfied with health status 		PERCEIVED HEALTH STATUS AND DEMANDS FOR BETTERMENT
<ul style="list-style-type: none"> Joint pains most prevalent among community Many among community suffer from sight defects Sugar is fairly prevalent Some consider there are no major ailments in community 	<ul style="list-style-type: none"> Joint pains, eyesight defects and sugar, the primary prevalent ailments 		
<ul style="list-style-type: none"> Quality of foods needs improvement Food prices should be decreased Food labels need to be in Urdu There should be campaigns enabling old people to eat healthy 	<ul style="list-style-type: none"> A need to decrease food and improve food quality Demand of special campaigns for older people health 		

Annexure 5: Matrix of Qualitative data analysis for Shikarpur

Matrix QRM analysis: Shikarpur		
Subcategories	Categories	Themes
<ul style="list-style-type: none"> Milk is a healthy diet Meat comprises of a healthy diet Vegetables & fruits are a healthy diet 	<ul style="list-style-type: none"> Milk, meat, vegetables, fruits and Desi ghee are 	PERCEIVED HEALTHY DIET AND

<ul style="list-style-type: none"> • Desi ghee considered a healthy diet 	<ul style="list-style-type: none"> • components of a healthy diet 	<p>BODY SIZE</p>	
<ul style="list-style-type: none"> • having three meals per day is most common 	<ul style="list-style-type: none"> • preferred number of meals in a day with in between snacks 		
<ul style="list-style-type: none"> • fruits are taken as snacks and many take nothing 			
<ul style="list-style-type: none"> • some consider average body weight as perfect 	<ul style="list-style-type: none"> • Average to slim body size perceived perfect 		
<ul style="list-style-type: none"> • Slim body size considered perfect by others 			
<ul style="list-style-type: none"> • Vegetables are the most usually consumed diet 	<ul style="list-style-type: none"> • Vegetables the most usual component of diet with occasional meat cooked in “Ghee”/oil & spices 	<p>BARRIERS IN GETTING DESIRED RATHER ROUTINE DIET</p>	
<ul style="list-style-type: none"> • Meat is used occasionally 			
<ul style="list-style-type: none"> • Meat consumed with gaps of some to several days 			
<ul style="list-style-type: none"> • Rice consumed with gaps of days 			
<ul style="list-style-type: none"> • Ghee and oil both are used for cooking of food 			
<ul style="list-style-type: none"> • Food is spicy 			
<ul style="list-style-type: none"> • Wish to add more meat to usual diet 			<ul style="list-style-type: none"> • Desire of being able to add more meat & better quality vegetables to diet
<ul style="list-style-type: none"> • Wish the quality of vegetables to be better 			
<ul style="list-style-type: none"> • Food products are very expensive 			<ul style="list-style-type: none"> • Food prices are high as compared to earnings • Vegetables are more easily available as compared to meat
<ul style="list-style-type: none"> • Vegetables are readily available 			
<ul style="list-style-type: none"> • Meat market at a distance from residential area 			
<ul style="list-style-type: none"> • Food is readily available and there is no shortage 			
<ul style="list-style-type: none"> • Labour work is the physical activity for men 	<ul style="list-style-type: none"> • Daily labour work and household chores comprise the physical activity 	<p>AN INSIGHT INTO LIFESTYLE</p>	
<ul style="list-style-type: none"> • Women are farmers 			
<ul style="list-style-type: none"> • Doing house hold chores is the physical activity 			
<ul style="list-style-type: none"> • The water supply is from hand pimp 	<ul style="list-style-type: none"> • Use hand pump and consider the water clean 		
<ul style="list-style-type: none"> • Majority considers water clean and pure 			
<ul style="list-style-type: none"> • Cigarette is the most common addiction 	<ul style="list-style-type: none"> • Smoking and snuff are 		

<ul style="list-style-type: none"> • Snuff is fairly used by community 	common	<p>PERCEIVED HEALTH STATUS AND DEMANDS FOR BETTERMENT</p>
<ul style="list-style-type: none"> • hash and heroin addiction are rare 		
<ul style="list-style-type: none"> • Majority consider themselves healthy 	<ul style="list-style-type: none"> • Majority satisfied with health status 	
<ul style="list-style-type: none"> • Women suffering from joint pains 	<ul style="list-style-type: none"> • Minor complain of joint pains, weak eye sight & sugar 	
<ul style="list-style-type: none"> • Eye sight defects are complained about 		
<ul style="list-style-type: none"> • A few complained of Backache, sugar, headache are 		
<ul style="list-style-type: none"> • sugar is most prevalent among community 	<ul style="list-style-type: none"> • Sugar, Joint pains and high BP, the primary prevalent ailments 	
<ul style="list-style-type: none"> • Many among community suffer from high BP 		
<ul style="list-style-type: none"> • Joint pain is fairly prevalent 		
<ul style="list-style-type: none"> • Malaria, skin problems and hepatitis are rare 		
<ul style="list-style-type: none"> • Quality of foods needs improvement 	<ul style="list-style-type: none"> • A need to decrease food and improve food quality 	
<ul style="list-style-type: none"> • Food prices should be decreased 	<ul style="list-style-type: none"> • Demand of labels to be in Urdu 	
<ul style="list-style-type: none"> • Food labels need to be in Urdu 		
<ul style="list-style-type: none"> • No idea how anyone can help to improve the communities health 		

Annexure 6: Matrix of Qualitative data analysis for Jacobabad

Matrix QRM Analysis: Jacobabad		
Subcategories	Categories	Themes
<ul style="list-style-type: none"> • Milk is a healthy diet 	<ul style="list-style-type: none"> • Milk, meat, fruits, vegetables and Desi ghee are components of a healthy diet 	<p>PERCEIVED HEALTHY DIET AND BODY SIZE</p>
<ul style="list-style-type: none"> • Meat comprises healthy diet 		
<ul style="list-style-type: none"> • Fruits & vegetables are a healthy diet 		
<ul style="list-style-type: none"> • Desi ghee considered a healthy diet 		

<ul style="list-style-type: none"> • Having three meals per day is most common 		
<ul style="list-style-type: none"> • Fruits are taken as snacks and many take nothing 	<ul style="list-style-type: none"> • preferred number of meals in a day with in between snacks 	
<ul style="list-style-type: none"> • Buttermilk and yogurt used as snacks between meals 		
<ul style="list-style-type: none"> • Women consider average body weight as perfect 	<ul style="list-style-type: none"> • Average to slim body size perceived perfect 	
<ul style="list-style-type: none"> • Slim body size considered perfect by men 		
<ul style="list-style-type: none"> • Vegetables are the most usually consumed diet 	<ul style="list-style-type: none"> • Vegetables the most usual component of diet with occasional meat cooked in “Ghee” and spices 	<p style="text-align: center;">BARRIERS IN GETTING DESIRED RATHER ROUTINE DIET</p>
<ul style="list-style-type: none"> • Meat is used occasionally 		
<ul style="list-style-type: none"> • Meat consumed with gaps of some to several days 		
<ul style="list-style-type: none"> • Rice consumed with gaps of days 		
<ul style="list-style-type: none"> • Ghee is used for cooking of food 		
<ul style="list-style-type: none"> • Food consumed is spicy 	<ul style="list-style-type: none"> • Desire of being able to add more meat & good quality vegetables to diet 	
<ul style="list-style-type: none"> • Wish to add more meat to usual diet 		
<ul style="list-style-type: none"> • Wish to have good quality food specially vegetables 	<ul style="list-style-type: none"> • Food prices are high as compared to earnings • Vegetables are more easily available as compared to meat 	
<ul style="list-style-type: none"> • Food products are very expensive 		
<ul style="list-style-type: none"> • Earning is less 		
<ul style="list-style-type: none"> • Vegetables are readily available 		
<ul style="list-style-type: none"> • Meat market at a distance from residential area 		
<ul style="list-style-type: none"> • Availability of food is not much an issue 		
<ul style="list-style-type: none"> • Labour work is the physical activity 	<ul style="list-style-type: none"> • Daily labour work and household chores comprise the physical activity 	<p style="text-align: center;">AN INSIGHT INTO LIFESTYLE</p>
<ul style="list-style-type: none"> • Doing house hold chores is the physical activity 		
<ul style="list-style-type: none"> • The water supply is from hand pimp 	<ul style="list-style-type: none"> • Use hand pump and consider the water clean 	
<ul style="list-style-type: none"> • Majority considers water clean and pure 		
<ul style="list-style-type: none"> • Cigarette is the most common addiction 	<ul style="list-style-type: none"> • Smoking is common 	
<ul style="list-style-type: none"> • Snuff is very commonly used 		
<ul style="list-style-type: none"> • hash and heroin addiction are rare 		
<ul style="list-style-type: none"> • Majority consider themselves healthy specially women 	<ul style="list-style-type: none"> • Majority satisfied with health status 	<p style="text-align: center;">PERCEIVED</p>
<ul style="list-style-type: none"> • Some suffering from joint pains 		

<ul style="list-style-type: none"> • Eye sight defects are complained about 	pains and weak eyesight	HEALTH STATUS AND DEMANDS FOR BETTERMENT
<ul style="list-style-type: none"> • sugar most prevalent among community 	<ul style="list-style-type: none"> • Joint pains, eyesight defects and sugar, the primary prevalent ailments 	
<ul style="list-style-type: none"> • some among community suffer from sight defects 		
<ul style="list-style-type: none"> • joint pain is highly prevalent 		
<ul style="list-style-type: none"> • BP problems, skin problems and hepatitis are less prevalent 	<ul style="list-style-type: none"> • A need to decrease food and improve food quality and Urdu labels for food • Demand of special campaigns for older people health 	
<ul style="list-style-type: none"> • Quality of foods needs improvement 		
<ul style="list-style-type: none"> • Food prices should be decreased 		
<ul style="list-style-type: none"> • Food labels need to be in Urdu 		
<ul style="list-style-type: none"> • There should be government policies for old people to eat healthy 		

REFERENCES

¹ Ashfaq T, Qidwai W. Older people Patients and Their Health in Pakistan: Current Status, Issues, Challenges and Opportunities. JLUMHS September-December 2011; VOL 10: NO. 03

² Bloom DE, Finlay JE. Demographic change and economic growth in Asia. Asian Economic Policy Review. 2009; 4(1):45-64.

³ Baig LA, Hasan Z, Iliyas M. Are the elderly in Pakistan getting their due share in health services? Results from a survey done in the periurban communities of Karachi. J Pak Med Assoc. 2000 Jun; 50(6):192-6.

⁴ Qidwai W, Rauf MU, Sakina S, Hamid A, Ishaque S, Ashfaq T. Frequency and Associated Factors for Care Giving among Older people Patients Visiting a Teaching Hospital in Karachi, Pakistan. PLoS One. 2011; 6(11):e25873. Epub 2011 Nov 4.

⁵ Hickson M. Malnutrition and ageing. Postgrad Med J. 2006 January; 82(963): 2–8. doi: 10.1136/pgmj.2005.037564

⁶ The State of Food Insecurity in the World Addressing food insecurity in protracted crises food and agriculture organization of the united nations Rome, 2010

⁷ FAO 1997. Human nutrition in the developing world (29). Agriculture and consumer protection department. Food and Agriculture Organization. Available on <http://www.fao.org/docrep/W0073E/W0073E00.htm>

⁸ FAO 2000. The state of food insecurity in the world. Food and Agriculture Organization of the United States, 2000. Rome. Italy

⁹ WHO 2013. Nutrition for older persons. Available from: <http://www.who.int/nutrition/topics/ageing/en/index.html> nutrition for older persons. [Cited: 28th February 2013]

¹⁰ McGee M, Jensen GL: Nutrition in the older people. J Clin Gastroenterol 2000,30(4):372-380.

¹¹ Australian Society for the Study of Obesity (ASSO): Healthy weight Australia: A National Obesity Strategy. 1995.

¹² Andreyeva T, Michaud P, van Soest A: Obesity and Health in Europeans Ages 50 and above. Rand Working Paper WR-331 2005, 1-25.

¹³ Defay R, Delcourt C, Ranvier M, Lacroux A, Papoz L: Relationships between physical activity, obesity and diabetes mellitus in a French older people population: the POLA study. Int J Obesity 2001, 25(4):512-518.

¹⁴ Janssen I, Heymsfield SB, Allison DB, Kotler DP, Ross R: Body mass index and waist circumference independently contribute to the prediction of non-abdominal, abdominal subcutaneous and visceral fat. American Journal of Clinical Nutrition 2002, 75(4):683-688.

¹⁵ Hengstermann S, Fischer A, Steinhagen-Thiessen E, Schulz RJ: Nutrition status and pressure ulcer: What we need for nutrition screening. Jpen-Parenter Enter 2007, 31(4):288-294.

¹⁶ Liu L, Bopp MM, Roborson PK, Sullivan DH: Under nutrition and Risk of Mortality in Older people Patients within 1 Year of Hospital Discharge. Journal of Gerontology 2002, 57:M741-746.

¹⁷ Alam I, Larbi A, P Graham. Nutritional status influences peripheral immune cell phenotypes in healthy men in rural Pakistan. *Immunity & Ageing* 2012, 9:16

¹⁸ Pakistan, Govt of Pakistan Demographic Survey (2003). Federal Bureau of Statistics 5-SLIC Building, F-6/4, Blue Area, Islamabad, Pakistan; 2003.

¹⁹ Jalal S, Younis M Z. Aging and Older people in Pakistan & ageing Int DOI 10.1007/s12126-012-9153-4

²⁰ Khan MA, Shah SAA. Food Insecurity in Pakistan: Causes and Policy Response. *Journal of Agricultural and Environmental Ethics* 2011;24(5): 493-509

²¹ Maplecroft.(2009). http://www.maplecroft.net/about/news/food_security_research_reveals_differing_fortunes_of_key_economies_04.html.

²² IFPRI—International Food policy Research Institute and Welt Hunger Hilfe, and Concern Worldwide. (2009). *Global Hunger Index*, Washington, DC, October.

²³ Government of Pakistan National Health Survey of Pakistan. Pakistan Medical Research Council, federal Bureau of Statistics National Center for Health Statistics. Islamabad. 1998.

HelpAge International helps older people claim their rights, challenge discrimination and overcome poverty, so that they can lead dignified, secure, active and healthy lives. Our work is strengthened through our global network of like-minded organizations - the only one of its kind in the world.

Health Services Academy was established in 1988 as an autonomous department under the Federal Ministry of Health and now under the Cabinet Division, Government of Pakistan, provided short courses and training for public health professionals. Since its humble beginnings as a training institute, the Academy has grown steadily and has established itself as the premier institute of public health in Pakistan, looking to provide more academic programmes in the near future, as well as providing an environment that focuses on excellence in academics, research, and policy-making.

www.helpage.org

www.hsa.edu.pk