Nutrition Support Program to Improve Health Status of Socially Vulnerable Elderly Population in Qanaqer-Zeytun District of Yerevan

Master of Public Health Integrating Experience Project
Using Community Service Grant Proposal Framework

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CONTENT

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SPECIFIC AIMS AND OBJECTIVES:

The broad aim of this public health community service program is to improve nutritional status and self-reported mental, physical and social health in the socially disadvantaged elderly population of Qanaqer-Zeytun district of Yerevan. This improvement is going to be achieved through the direct provision of nutritious food packages, counseling sessions about healthy nutrition and food preparation by nutrition specialists, and diagnosis and treatment by dentists and gastroenterologists.

The objectives of this community intervention project are the following:

1) to reduce the proportion of elderly participants self-reporting poor health status
2) to reduce the proportion of elderly participants self-reporting poor mental health status
3) to reduce undernutrition among the elderly participants
4) to reduce food insecurity in the elderly
5) to improve the technical capacity of elderly participants to prepare and preserve their food safely.

INTRODUCTION

Older age and well-being

According to the World Health Organization (WHO) the chronological age of 65 years has been accepted as a definition of "elderly" or older person in many developed countries [1]. However, this age cut-off does not fully correspond to the situation of older people in less developed countries [1]. While the age of 60 or 65 is associated with retirement ages in many developed countries, in less developed countries the definition of older age is also associated with socially attributed roles to the elderly people with the emphasis on the reduction in active contribution to society, leaving less room for chronological attributions to ageing [2].

According to WHO, in 2010 there has been an estimated 524 million people aged 65 and older worldwide [3]. This number is expected to reach 1.5 billion by 2050, constituting 16% of the world's population [3]. The proportion of elderly is high in developed countries, reaching over 24% in some European countries [4]. Yet there is also a rapidly growing aging population in less developed countries [5,6]. As the number of older people continues to rise, socio-economic policies, services and research are necessary to help sustain their wellbeing and help them to realize their full potential [7]. Older age is associated with increased risk of certain diseases and conditions [8,9]. Undernutrition can impede healthy aging and negatively affect health outcomes in older adults [10-12].

Undernutrition in older people

Undernutrition is defined as a condition characterized by the lack of all or some of key nutritional elements essential for health [4]. The undernutrition in elderly is defined as lack of protein and energy deficiency, poor appetite, muscle wasting and weight loss [13].

The prevalence of undernutrition among elderly population is different in the community-dwelling elderly, in the nursing homes, and in the hospitals [14]. The prevalence of undernutrition in the general population was shown to substantially vary from country to country in Europe (from 21% to 37 % in 2012) [15]. According to other reports, the prevalence of undernutrition in the elderly population in Europe can reach as high as 37% to 40% in community dwelling settings, 60-100% in nursing homes, and 46% in hospitals[12]. In 2002 the Royal College of Physicians estimated the prevalence of malnutrition in United Kingdom at 20% among those in residential accommodation and up to 40% in those admitted to hospitals. The prevalence of undernutrition among free-living elderly population was about 7% in 2005-2006 in Netherlands[16 10].

Risk Factors for Undernutrition

Generally older age is associated with higher risk for undernutrition. The main risk factors associated with undernutrition in elderly are divided into three groups: physical, social and medical[11]. The physical factors include issues like aging associated impairment of smell and taste that leads to decreased interest in food and quickly achieved feeling of satiety[17], and deteriorating oral health interfering with chewing and swallowing. Another issue is the age related decrease in mobility that leads to inability to acquire and prepare food and/or feed oneself[18]. The main social factors include social isolation and low-income[19]. The medical risk factors are chronic illnesses and their impact on appetite as well as associated polypharmacy and restricted diet[20].

Health Effects of Undernutrition in the Elderly Population

The undernutrition in elderly is associated with increased morbidity and mortality, prolonged hospitalization, increased frequency of hospitalization, institutional placement, falls, increased risk of osteoporosis and increased fracture risk[21] . In elderly people the catabolic

processes overweigh the anabolic ones making the proper nutritious composition of consumed food vitally important for preserving the muscle and bone mass in sufficient condition for normal functioning [22].

Undernutrition leads to impairments of virtually all organ systems as well as to psychological disorders, decreased immunity and increased risk of chronic diseases and their exacerbations[14].

Mental health along with the physical health of the elderly population suffers as a result of undernutrition, leading to an exacerbation of many problems including anxiety disorders, substance abuse, self-harm, dementia and depression[23]. Moreover, several studies worldwide specifically show that undernutrition itself leads to psychological problems, including depression and cognitive decline[24,25].

Quality of life of elderly above 65 has been shown to be associated with physical well-being as well as social and emotional health[26]. Finances, family of origin, and multigenerational residence can also affect quality of life in the elderly population, with better socio-economic conditions, and presence of multigenerational family having a positively impact [27]. Other studies document the positive relationship between quality of life, social participation and intimacy among the elderly population[28]. Undernutrition among the elderly has been shown to ultimately lead to the decline of their quality of life [29]

Strategies to address the Undernutrition among the elderly

As the global recognition of undernutrition among the elderly as a significant social and public health issue increases , the need for timely prevention and intervention becomes urgent. A number of community-based interventions have been designed to lower the rates of

undernutrition among the elderly[30]. The intervention practices involve strategies like food supplementations, food service practices, dietician assistance practices, and others[31].

Many studies have shown the benefits of oral nutritional supplements to clinical outcomes of the elderly, particularly the reduction of mortality, lowered rates of hip fractures, and prevention of weight loss[32]. Most recent literature shows the effectiveness of vitamin, protein and micronutrients supplementation in undernourished population ; yet it also emphasizes the importance of vegetable and fruit consumption for preventing a number of adverse health conditions such as cardiovascular disease, cancer and other chronic health conditions[33]. In fact, the food-based solutions to overcome unfavorable health conditions among the elderly may be more advantageous than solely vitamin and micronutrient supplementations[33].

There is a wide spectrum of community-based solutions to prevent undernutrition, applicable within specific settings. One of the common ways to solve the issue of undernutrition among the elderly on the community level is the operation of soup kitchens. However, this approach was shown to be not effective in vitamins and folate supplementation, therefore leaving space for more comprehensive solutions[34]. In addition , the breakfast and lunch provision contrary to only lunch provision among the elderly was shown to be significantly associated with improvement of health conditions and consequently quality of life[35].

The community based interventions do not have to rely on sole provision of different quality/quantity foods [30]. The comparative analysis of different interventions shows better health and social outcomes of those interventions which include the provision of food packages for home cooking, supported by the comprehensive home nutritional assessment, routine security check, examination by physicians and referral to other specialists[30]. Such comprehensive interventions improve not only the physical and mental health but also promote social

engagement through the regular contact with community members, friends and regular social activities[36].

SITUATION IN ARMENIA

Background

At the beginning of 90ies Armenia has undergone major socio-economic changes as a result of the breakdown of Soviet-Union, war for Mountainous Karabagh in 1988- 1994, and devastating earthquake in 1988[37]. Today's world-wide economic recession also worsened the economic situation in the country, as many Armenians' incomes depend on seasonal working opportunities abroad or on the financial support from relatives living in other countries [38]. All these factors can lead to the decrease in the affordability of nutritious food.

According to the National Statistical Service the proportion of elderly population in Armenia was 10.2% in 2012 [39].It is typical for Armenian elders to live together with the younger generation that takes care of them[40]. The elderly people living alone represent the most vulnerable group in the society [41]. For lonely elderly the economic situation may become a barrier for buying nutritious food in sufficient amount and quality. Economic situation also determines one's ability to prepare and preserve the food in a way that allows obtaining most benefit from it. In more developed countries the social net comprised of social and medical insurance and functioning assistance services may compensate for the absence of care and support for the elderly from their relatives, but in Armenia it is not the case. In Armenia, as well as in many post-soviet countries the transition from Soviet system to market economy led to the break down in the former social safety nets [42]. The government's failure to create effective and reliable social security system for elderly might endanger their nutritional status [41].

No data on undernutrition in elderly in Armenia is available, particularly on the community level. The data on the proportion of undernourished elderly population in the region is scarce as well. A cross-sectional study in Iran among community-dwelling elderly population showed that the proportion of elderly who are undernourished reaches about 12%[43].

There are several organizations in Armenia which address the issue of nutrition among elderly as part of their larger programs. "Lighthouse" in Armavir region provides freshly made food to the elderly during the weekends, plus the transportation to and from the NGO's center to help those with limited mobility. "Mission Armenia" is another organization which provides food to the elderly within specialized canteens. Another one is provided by the Armenian Church within the framework of Soup Kitchen food for the elderly[44] .

METHODOLOGY

Conceptual framework

The conceptual framework underlying the proposed community based service is Social Ecological Model[45]. The ecological model provides the importance of different layers of social life including individual, community, living conditions and policy, and is well-fitted to describe complex issues, including undernutrition among the elderly [46]. Based on the model, the provision of food packages at the individual level will provide support to the individual to overcome the undernutrition and benefit from the counseling by physicians. On the community level the involvement of local volunteers (high school students and university students), community members including neighbors, local NGO's, and primary health care providers will enhance the community networking, social support, social integration and social engagement. The living conditions of the intervention population will be addressed as well by the provision of gas-

cookers and refrigerators to those who do not have means for adequate food preparation and preservation.

Intervention Plan

Location

Qanaqer-Zeytun district is an administrative district situated in the north-eastern part of Yerevan. It's population reaches 74,400 [47].

The Qanaqer-Zeytun district of Yerevan was chosen as the intervention site, because similar interventions on the smaller scale were already implemented in that district and there are NGO's to cooperate with which have an experience with working in the local community.

Target population

The target population will include older people > 65 years of age, living alone or with the spouse, receiving the retirement pension, and support from the state (Paros program) for the socially vulnerable population. The beneficiaries will be recruited through the local NGO "Vision Armenia" which has a long history of working with the most disadvantaged part of this community. Two hundred forty-four participants will be recruited in the program.

Project Staff and Volunteers

In order to curb the program costs most of the work will be done on voluntary, non-refundable bases. The only paid positions will be the position of the Project coordinator demanding full-time involvement, and the position of the Project accountant.

The local primary health care nurses and physicians will participate in the program in the scope of their everyday duties. Whatever work above the scope of their working duties will be reimbursed by small non-financial incentives, such as certificates for voluntary participation in elderly population health promotion.

The volunteers participating in the implementation of this program will be socially active high-school and university students residing in Qanaqer-Zeytun who are interested in volunteer work for the benefit of the elderly population. They will be recruited from local NGO's list of volunteers as well as their contacts (friends, siblings, and classmates).

Intervention

The intervention will have four different components:

- The assessment of living conditions and provision of lacking utilities for healthy food preparation and preservation.
- Consultations with nurses and general practitioners followed by referrals to narrow specialists at the beginning of the program.
- Provision of "7 days Food Packages" .
- Educational component with two target groups:
    - Physicians and nurses
    - Community volunteers

The intervention will begin with the assessment of the living conditions of participants, based on which those who do not have gas cookers and/or refrigerators will be provided with them. Those who do have the equipment but do not use it due to inability to pay utility bills, will be eligible for the corresponding financial support sufficient to cover the price of gas and electricity necessary to operate above mentioned equipment. The eligibility for the support will be determined by home visits, which will be conducted by the project staff and volunteers

During the home visits the "Demographic and Basic Information Questionnaire" will be administered by the interviewers. The interviewers will also have to arrange an appointment between the general practitioner and the participant in the local primary health care center

(polyclinic). The volunteer will ensure that the participant is aware of the location of the health care center, name of his attending doctor and time of the meeting.

The involvement of the physicians and nurses will be organized through prior contacts and agreements with the local polyclinic administrative staff. The main objective of the polyclinic visits is to assess the health status of the participant and provide referrals for other interventions if necessary, for example, dental services to facilitate food intake. Also the program participants might be referred to other narrow specialists (gastroenterologists, psychologists, etc.) upon need. The polyclinic visits will help to stimulate the links between the local polyclinics and the older population.

The nurses will be more active on the community level via home visits for the provision of on-going support and identification of cases necessary for further physician's consultation and intervention.

The third component of the project will include the provision of food packages by the project staff and volunteers. The food package will contain the necessary ingredients for cooking including oil, butter, cereals, sugar, pastas, meat (including red meat, fish and poultry), potatoes, vegetable and fruits sufficient for one week. This package will provide necessary protein and vitamin intake for the elderly and will be distributed once a week at the NGO center. Those participants who are not able to come to the center will have the packages delivered to them by the volunteers.

The forth component will include the education provided both to the health care personnel and volunteers by hired dietitian and project staff. The main objective of the educational component for the health care providers would be helping providers to learn how to identify and deal with health problems related to undernutrition among elderly. The training will

alert healthcare specialists to the signs of undernutrition among elderly and facilitate active primary consultations, follow-up sessions and referral to other specialists. The nurses will be trained to counsel the elderly about the role of healthy eating , weight gain or weight lose, appetite management, the importance of vitamins, proteins and minerals and the main sources of them, importance of appropriate fluid intake, etc., during the home visits. Also they will learn about how to monitor chewing problems and other possible barriers for food intake, and adequately address them. In addition the nurses will learn easy recipes for cooking to demonstrate and teach them to the participants.

The volunteers will receive a TOT session held by a nutritional specialist on the importance of consumption of healthy food for the elderly's health. They will be instructed to pass this information to the program participants during routine home visits. It is assumed that the absorption of the information by the elderly will be facilitated in more informal setting during home visits, allowing for asking questions and frequent repetition.

In addition, volunteers will receive instructions about how to conduct their main activities including routine home-visits, staying in touch with the elderly by phone, and reacting in cases of emergencies.

Evaluation Plan

The evaluation of the program will be conducted through baseline data collection one month prior to the start of the intervention and follow-up data collection at the end of the 6^{th} and 9^{th} month of the intervention.

Objectives

The specific objectives of this community intervention project that will be used for the evaluation are the following:

1. To reduce the proportion of elderly participants (>65 year old) in Qanaqer-Zeytun district of Yerevan self-reporting poor physical health status by 10% by the end of the 6th month of the program.

2. To reduce the proportion of elderly participants (>65 year old) in Qanaqer-Zeytun district of Yerevan self-reporting poor mental health status by 10% by the end of the 6th month of the program.

3. To reduce undernutrition among the elderly participants (>65 year old) in Qanaqer-Zeytun district of Yerevan by 45% by the end of the 6^{th} month of the program.

4. To reduce food insecurity of the elderly participants (>65 year old) by 50% in Qanaqer-Zeytun district of Yerevan by the end of the 6^{th} month of the program.

5. To improve the technical capacity of elderly participants (>65 year old) in Qanaqer-Zeytun district of Yerevan to prepare and preserve their food safely by the provision of utilities to 100% of the participants in need (gas cooker and refrigerators) at the launch of the program

Evaluation design

The evaluation plan will utilize quasi-experimental non-equivalent control group design with multiple time series.

Graphical representation of the design

Participants group	***O X O O***
Control group	***O O O***

Participants and their recruitment

The intervention group will include people over 65 years of age residing in Qanaqer-Zeytun district. The control group will include participants over 65 living in Malatsia-Sebastia district of Yerevan. The recruitment of the participants in the intervention group will be done randomly

using the roster of the program participants. The control group participants will be recruited using the roster of the socially vulnerable elderly of the Vision Armenia NGO in Malatsia-Sebastia district. The inclusion criteria for both intervention and control group participants are the following:

- willingness to participate
- age over 65
- living alone or with an elderly spouse
- living on limited or low income (main source of income has to be the pension provided by the state)
- knowledge of Armenian language

Sampling

Sample size calculation

The sample size was calculated using the standard formulas for the difference in proportions. An assumption was made that at baseline 20% of the elderly would be undernourished, based on the literature [12]. It was expected that the program will produce a difference of at least 10 percentage points in the proportion of undernourished participants between pre and post measurements. It was assumed that the non-intervention control group will show no change over the pre-post period. With the α=0.05 and power= 0.8 [48]the resulting sample size was 219 for each group. The student investigator factored a possible refusal rate of .10, thus producing a total sample of 244 for each group.

The student investigator used the following standard formula for the calculation [48]:

$$n' = \frac{\left\{z_{1-\alpha/2}\sqrt{2\bar{p}(1-\bar{p})} + z_{1-\beta}\sqrt{p_1(1-p_1)+p_2(1-p_2)}\right\}^2}{(p_1-p_2)^2}$$

$$where,\ p = (p_1+p_2)/2$$

Sampling strategy

The participants will be selected through the systematic random sampling with random starting point. The step will be determined by dividing the number of participants by the number of intended sample size (244).

Evaluation procedures and instruments

All possible determinants of poor nutritional status will be accessed via the interviewer administered questionnaire. The questionnaire will include questions assessing demographic profile of the participants, affordability and availability of food, and food preparation and preservation practices.

SF-36 will assess limitations in physical and social activity limitations in usual role activities due to physical health problems, bodily pain, general mental health, limitations in usual role activity due to emotional problems, and vitality. The SF-36 was validated and adapted for the use in Armenian population[49].

The Armenian translation of Mini Nutritional Assessment will be used for measuring the risk of undernutrition[50]. The MNA includes anthropometric measurements (weight, height, and weight loss), global assessment (the lifestyle of the individual, medication history, and mobility), dietary questionnaire (fluid intake, ability to feed independently, and number of meals), and subjective assessment (personal interpretation of health and nutrition status. The MNA was not

adapted or validated for the Armenian population. The Household Food Insecurity Access Scale will be used to evaluate the food insecurity of the elderly due to physical and economic constraints. The scale will be adapted for the use in Armenian population. The scale measures food insecurity in three domains: 1) Anxiety and uncertainty about the household food supply, 2) Insufficient Quality (includes variety and preferences of the type of food), and 3) Insufficient food intake and its physical consequences.

The intervention group participants will be examined at the local polyclinic for oral cavity health, digestion issues, and overall health by the narrow specialists and general practitioner using their routine forms.

Data collection/Evaluators

The volunteers from Malatia-Sebastia district will do data collection in Qanaqer Zeytun and vice versa to assure full confidentiality of the data and facilitate the willingness of the participants to provide honest responses. The data will be entered into SPSS 20 statistical package. To ensure precision of the data double entry will be conducted. The chi square test and t-test will be used to compare the differences in the program indicators between baseline and follow-up and between intervention and control groups.

Ethical Considerations

As the intervention is expected to lead to health improvement in the participants, the participants of the control group will receive analogous intervention after the end of the program in intervention district.

Before the start of the interview the participants will be read a consent form to be informed about the aim of the evaluation and all the other issues related to it as well as about their right to refuse the participation or interrupt the interview process at any time. The

participants will be provided with a copy of consent form, but the original form will not be signed by the participant to protect their anonymity. Instead the evaluator will mention about the consent form introduction in the data collection journal next to the ID number of the participant.

No personal identifiers will be attached to data to maintain anonymity. The names, addresses or other individual information that may lead to the identification of the participants will not be recorded on the survey questionnaires; instead a special ID system will be generated and recorded on the questionnaire. The journal forms will not contain any identifiable information. The completed questionnaires will be kept for further research purposes and only the investigators and the project manager will have access to them.

Budget

Food package ingredients								
Item	**unit**	**quantity**	**price per unit (AMD)**	**total number of participants**	**total number of units**	**total price per week per participant (AMD)**	**Project duration per week**	**Total price (AMD)**
Oil	liter	0.5	500	244	122	61,000	25	1,525,000
Butter	Kg	0.3	2,000	244	73.2	146,400	25	3,660,000
Cereal/ Pasta	package	1	1,500	244	244	366,000	25	9,150,000
Sugar	Kg	0.2	450	244	48.8	21,960	25	549,000
Red meat	Kg	0.3	3,000	244	73.2	219,600	25	5,490,000
Fish	Kg	0.3	2,000	244	73.2	146,400	25	3,660,000
Poultry	Kg	0.3	2,500	244	73.2	183,000	25	4,575,000
Vegetables	package	1	1,500	244	244	366,000	25	9,150,000
Fruits	package	1	1,500	244	244	366,000	25	9,150,000
Utility compensation								
Description	**unit**	**quantity**	**price per unit**	**number of months**	**total price**			

			per month		
Electricity/gas	household	15	10,000	6	900,000
Equipment					
Description	**unit**	**quantity**	**price per unit**	**total price**	
Gas cooker	pieces	15	150,000	2,250,000	
Refrigerator	pieces	15	100,000	1,500,000	
Personal					
Description	**unit**		**per month**	**total months**	**total price**
Project Coordinator	month		130,000	9	1,170,000
Accountant	month		15,000	9	135,000
Transpiration					
Description	**unit**	**quantity**	**price per unit**	**Total number of months**	**total price**
Transportation	liter	40	495	9	178,200
Printing					30,000
TOTAL BUDGET					53,072,200

Timeline

The program will start on June 1, 2015.

Month	Activity
June	Development of the study instrument, Selection of interviewers, Regular meetings, Progress report
July	Training of interviewers, Pretest of the interview guides, Technical and logistic arrangements for the start of the field work, Data Collection, Regular meetings, Progress Report

August	Intervention, Regular meetings, Progress Report
September	Intervention, Regular meetings, Progress Report
November	Intervention, Data Collection, Regular meetings, Progress Report
December	Intervention, Regular meetings, Progress Report
January	Intervention, Regular meetings, Progress Report
February	Intervention, Data collection
March	Data Analysis, Regular meetings, Progress Report, Final Report

Sustainability

This community-based intervention is aimed at providing the elderly population with access to health care, healthy nutrition, and social life through the provision of food packages, healthcare providers' consultations and involvement of volunteers as mediators between the older people and the wider community. The sustainability of the proposed intervention will be safeguarded through enhancing the awareness among healthcare providers and volunteers about the needs of older members of the community and providing them with knowledge and skills to respond to their needs. Also, the elderly will be made more aware about their possibilities of access to community resources, which will help them to become more proactive in meeting their needs. The involvement of the local NGOs in the program will help to foster institutions which are capable to raise the issues of support to older members of the community on both local and state level.

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Appendix: Instruments

SOCIO-DEMOGRAPHIC CHARACTERISTICS OF THE PARTICIPANTS AND CCOOKING COMODITIES

1. **How old are you? ___**

2. **What is your gender?**
    a. Male
    b. Female

3. **What is your marital status?**
    a. Married
    b. Divorced
    c. Widowed
    d. Single

4. **Mention the number of people living in your household ___**

5. **What is your household monthly income?**
    a. Less than 50 000
    b. 51 000 – 100 000
    c. 101 000 – 150 000
    d. 151 000 – 200 000
    e. More than 201 000

6. **What is your current employment status?**
    a. Employed
    b. Retired

7. **What is the size of your personal monthly average income including pension?**
    a. Less than 50 000
    b. 51 000 – 100 000
    c. 101 000 – 150 000
    d. 151 000 – 200 000
    e. More than 201 000

8. **What is your educational level?**
    a. No education
    b. Primary school
    c. Secondary school
    d. High school

e. Undergraduate education
f. Post-graduate education

9. Do you have a functional refrigerator?

a. Yes, I have a functioning refrigerator
b. I have refrigerator, but do not operate it due to utility payments
c. No, I do not have a refrigerator

10. Do you have a gas cooker?

a. Yes, I have a functional gas cooker
b. I have a gas cooker, but do not operate it due to utility payments
c. No, I do not have a gas cooker

HOUSEHOLD FOOD INSECURITY ACCESS SCALE (HFIAS) MEASUREMENT TOOL

No	Question	Response Options	CODE
1.	In the past four weeks, did you worry that your household would not have enough food?	0 = No (skip to Q2) 1=Yes	….|___|
1.a	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks)	….|___|
2.	In the past four weeks, were you or any household member not able to eat the kinds of foods you preferred because of a lack of resources?	0 = No (skip to Q3) 1=Yes	….|___|
2.a	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks)	….|___|
3.	In the past four weeks, did you or any household member have to eat a limited variety of foods due to a lack of resources?	0 = No (skip to Q4) 1 = Yes	….|___|
3.a	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks)	….|___|
4.	In the past four weeks, did you or any household member have to eat some foods that you really did not want to eat because of a lack of resources to obtain other types of food?	0 = No (skip to Q5) 1 = Yes	….|___|
4.a	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks)	….|___|
No	Question	Response Options	CODE
	In the past four weeks, did you or any household member have	0 = No (skip to Q6)	….|___|

5.	to eat a smaller meal than you felt you needed because there was not enough food?	1 = Yes	
5.a	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks)	….|___|
6.	In the past four weeks, did you or any other household member have to eat fewer meals in a day because there was not enough food?	0 = No (skip to Q7) 1 = Yes	….|___|
6.a	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks)	….|___|
7.	In the past four weeks, was there ever no food to eat of any kind in your household because of lack of resources to get food?	0 = No (skip to Q8) 1 = Yes	….|___|
7.a	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks)	….|___|
8.	In the past four weeks, did you or any household member go to sleep at night hungry because there was not enough food?	0 = No (skip to Q9) 1 = Yes	….|___|
8.a	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks)	….|___|
9.	In the past four weeks, did you or any household member go a whole day and night without eating anything because there was not enough food?	0 = No (questionnaire is finished) 1 = Yes	….|___|
No	Question	Response Options	CODE
9.a	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks)	….|___|

		3 = Often (more than ten times in the past four weeks)	

36-Item Short Form Health Survey (SF-36) 1.0 Questionnaire Items

SF-36 HEALTH SURVEY

INSTRUCTIONS: This survey asks for your views about your health. This information will help keep track of how you feel and how well you are able to do your usual activities.

Answer every question by marking the answer as indicated. If you are unsure about how to answer a question, please give the best answer you can.

1. In general, would you say your health is:

(circle one)

Excellent 1

Very good 2

Good 3

Fair 4

Poor 5

2. Compared to one year ago, how would you rate your health in general now?

(circle one)

Much better now than one year ago 1

Somewhat better now than one year ago 2

About the same as one year ago 3

Somewhat worse now than one year ago 4

Much worse now than one year ago 5

3. The following items are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much?

(circle one number on each line)

ACTIVITIES	**Yes, Limited A Lot**	**Yes, Limited A Little**	**No, Not Limited At All**
a. **Vigorous activities**, such as running, lifting heavy objects, participating in strenuous sports	1	2	3
b. **Moderate activities**, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf	1	2	3
c. Lifting or carrying groceries	1	2	3
d. Climbing **several** flights of stairs	1	2	3
e. Climbing **one** flight of stairs	1	2	3
f. Bending, kneeling, or stooping	1	2	3
g. Walking **more than a mile**	1	2	3
h. Walking **several blocks**	1	2	3
i. Walking **one block**	1	2	3
j. Bathing or dressing yourself	1	2	3

4. During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of your physical health?

(circle one number on each line)

	YES	**NO**
a. Cut down on the **amount of time** you spent on work or other activities	1	2
b. **Accomplished less** than you would like	1	2
c. Were limited in the **kind** of work or other activities	1	2
d. Had **difficulty** performing the work or other activities (for example, it took extra effort)	1	2

5. During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?

(circle one number on each line)

	YES	NO
a. Cut down the **amount of time** you spent on work or other activities	1	2
b. **Accomplished less** than you would like	1	2
c. Didn't do work or other activities as **carefully** as usual	1	2

6. During the past 4 weeks, to what extent has your physical health or emotional problems interfered with your normal social activities with family, friends, neighbors, or groups?

(circle one)

Not at all 1

Slightly 2

Moderately 3

Quite a bit 4

Extremely 5

7. How much bodily pain have you had during the past 4 weeks?

(circle one)

None 1

Very mild 2

Mild 3

Moderate 4

Severe 5

Very severe 6

8. During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?

(circle one)

Not at all 1

A little bit 2

Moderately 3

Quite a bit 4

Extremely 5

9. These questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the past 4 weeks -

(circle one number on each line)

	All of the Time	Most of the Time	A Good Bit of the Time	Some of the Time	A Little of the Time	None of the Time
a. Did you feel full of pep?	1	2	3	4	5	6
b. Have you been a very nervous person?	1	2	3	4	5	6
c. Have you felt so down in the dumps that nothing could cheer you up?	1	2	3	4	5	6
d. Have you felt calm and peaceful?	1	2	3	4	5	6
e. Did you have a lot of energy?	1	2	3	4	5	6
f. Have you felt downhearted and blue?	1	2	3	4	5	6
g. Did you feel worn out?	1	2	3	4	5	6
h. Have you been a happy person?	1	2	3	4	5	6
i. Did you feel tired?	1	2	3	4	5	6

10. During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting with friends, relatives, etc.)?

(circle one)

All of the time 1

Most of the time 2

Some of the time 3

A little of the time 4

None of the time 5

11. How TRUE or FALSE is each of the following statements for you?

(circle one number on each line)

		Definitely True	Mostly True	Don't Know	Mostly False	Definitely False
a.	I seem to get sick a little easier than other people	1	2	3	4	5
b.	I am as healthy as anybody I know	1	2	3	4	5
c.	I expect my health to get worse	1	2	3	4	5
d.	My health is excellent	1	2	3	4	5

U.S.

SF-36