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ENSURING ACCESS TO QUALITY  
HEALTH CARE IN CENTRAL ASIA

FOCUS GROUP DISCUSSIONS REPORT:

## **Perceptions of Anemia and Nutrition among the Population and Health Care Workers in Uzbekistan**

**Authors:**

Center for Social Research "Expert-Fikri"

**March, 2001**

**Ferghana Oblast, Uzbekistan**



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# **ANEMIA**

## ***Main Conclusions***

Discussions conducted in the selected rural regions allow us to make a series of important conclusions and recommendations related to further activities of USAID/ZdravPlus implemented in Ferghana Oblast, related to technical assistance with the aim of improving the quality of healthcare services rendered to rural people. These conclusions and recommendations are based on the analysis of knowledge obtained from the population about anemia and nutrition.

First of all, it should be noted that participants in the group discussions made a connection between causes of anemia and a number of external reasons that they cannot overcome rather than between causes of anemia and their own attitudes towards nutrition, identified as internal reasons. As a result, anemia, in the opinion of the majority, is caused by financial difficulties and the poverty that has spread widely in recent years, and therefore is as impossible to overcome as some natural phenomena (e.g., mudslides, floods, and earthquakes). Moreover, they believed causes of anemia to be other illnesses and some “natural” conditions (e.g., pregnancy) or wrong treatment.

Other causes for anemia may be labeled as “internal” which in the opinion of most participants, were less important than “external” reasons. Thus, improper diet planning that includes foods accessible for rural population, unhealthy lifestyles, and inequality in the family (for example, infringed status of daughters-in-law, and women in general), do exist, but are not crucial factors for the development and prevalence of anemia.

Widely prevalent among rural inhabitants (according to some assessments 80-90% of the population suffers from anemia), anemia is considered by most participants to be a rather dangerous illness. On the one hand, anemia is seen as a complication of other diseases. On the other hand, it is thought to be the reason for development of more dangerous illnesses. Rural people have good knowledge of symptoms of anemia. In addition, they are aware of both external symptoms (e.g., weakness, paleness, increased fatigue, and decreased ability to work), as well as of internal manifestations of this illness (e.g., decreased level of hemoglobin in blood).

Despite the fact that they understood the danger of anemia, not all of the participants supposed that doctors should treat this ailment. Most of them thought that adequate nutrition and proper lifestyles are sufficient to cure the disease, although there were some who thought that they should follow the recommendations of doctors, in that otherwise anemia cannot be treated. There was also an opinion that the degree of medical intervention depends on the severity of anemia: in the initial stages proper nutrition is satisfactory; in later stages they thought that an anemic person should visit a doctor. However, the idea that in many cases anemia may be cured without a doctor was predominant.

There were numerous ideas related to the prevention and treatment of anemia through eating certain staple foods. Most participants agreed with the views that when the first signs of anemia appear there are certain kinds of staple foods which should be added to the diet. People gave various answers to the question related to the kinds of staple foods that should be added. The largest group of respondents thought that meat, meat products and animal foods should be consumed in large quantities. Many of those respondents who touted the health benefits of a diet that consists mainly of meat believed that tongue and liver were useful in preventing anemia.

A smaller group of participants supposed that because at the present time meat and meat products are costly, a wholesome diet should instead include vegetables and fruits. People who supported this viewpoint argued that legumes could entirely replace meat.

The third standpoint was based on the necessity of balancing nutrition. People who supported this view thought that it is not the amount of consumed food but its diversity along with healthy lifestyles that is important. Representatives of this group were in the minority.

The participants had incomplete and vague ideas about foods rich in vitamin C. Thus, carrots were indicated as vegetables rich in vitamin C. Some participants said this was easy to explain because carrots are the only easily accessible product in rural areas.

Thus, in the majority of participants, knowledge of matters related to vitamin content in certain products as well as of issues pertaining to nutrition of young children (i.e., younger than six months of age) is based on personal experience or that of relatives, friends, and acquaintances rather than on information obtained from reliable sources (e.g., from doctors, books, or journals).

Intake of various iron supplements was rare. However, despite this fact, many participants had heard about such supplements. These supplements are rarely utilized owing to their cost and the fear of side effects that result from their use.

Consequently, we may presume that prevention and treatment practices are unsystematic and are implemented without use of medications. The main hindrances in combating anemia are, indeed, inadequate living standards of the population that do not allow people to provide for healthy nutrition. It should be emphasized that many rural residents do not have a clear idea of the causes of anemia, its course, and complications. Incompleteness of information, lack of sound knowledge, and absence of access to consultations provided by qualified health workers make it impossible for rural inhabitants to plan their diets and to consume iron supplements that are sold at an affordable price.

## ***Recommendations***

Based on the aforementioned, we worked out a series of recommendations that USAID/ZdravPlus may accept as guidelines. In our opinion, it necessary that the following measures be undertaken:

- Reinforce explanatory and educational activities related to matters of anemia **prevention**.
- Improve provision to rural residents (especially those who come to rural health care facilities) of information about the **treatment** of anemia.
- Supply the market of the Ferghana valley with such iron supplements that will be sold at affordable **prices** to the general population.
- Inculcate gradually into people's minds the importance of **healthy lifestyles** and **balanced diets**.
- Inform the population as to **the role of different substances** (vitamins, iron, and other minerals) in maintaining health as well as to their content in various affordable and easily accessible staple foods.
- More widely cover issues related to **feeding infants**.

In order to achieve effectiveness of these measures it should be considered that:

- Information should be accessible both through mass media (i.e., television, radio, and newspapers) as well as directly through rural health care posts.
- The most popular forms of mass media should be used: television channel "Yoshlar" (Youth), (shows "Begoyim" (My Lady), "Azizim" (My Dear); radio channel "Vodiy Sadosi" (Echo of the Valley); newspapers "Darakchi" and "Adolat Yuli.
- Rural health care facilities should have plenty of posters and brochures that illustrate simply and clearly information on the above-mentioned topics.
- Analogous brochures should be distributed **free of charge** among the population (for example, by rural mailmen).

- Content of posters and brochures should be based on easily affordable foods and food supplements for the population of the Ferghana valley and not on what theories of nutrition recommend. For instance, it is absolutely unacceptable to recommend consumption of staple foods that many people cannot afford as well as to prescribe overly expensive iron supplements. This may lessen people's confidence in these kinds of promotion activities.

## ***Background***

In accordance with a “Memorandum of Understanding” signed on October 27, 1997, by the governments of the United States of America and Uzbekistan, USAID/ZdravPlus renders technical assistance aimed at improving effectiveness of health care services provided to rural populations of Uzbekistan. In particular, a new model of health care is being introduced in rural areas of Ferghana Oblast.

A series of focus group discussions were held in Ferghana Oblast which were aimed at further developing the new model and a thorough understanding of USAID/ZdravPlus' objectives. In the course of the discussions, knowledge of and attitudes towards anemia on the part of ordinary rural people as well as knowledge about and practice of anemia treatment by health workers (e.g., doctors and midlevel health personnel) from rural health care facilities were studied.

## ***Methodology***

In accordance with the specifications attached to the contract concluded between USAID/ZdravPlus and Expert-Fikri firm, the method of focus group discussions was selected for implementing the survey. Selection of participants of discussions was completed in four rural regions of Ferghana Oblast. A list of groups and criteria for selection of participants are shown in Table 1.

**Table 1. List of participants of focus group discussions.**

+№	<i>Title of the Group</i>	Topic	Participants	
			Sex	Age
1	Young women who do the shopping or cooking for their families	Anemia	F	15-30
2	Young women who do the shopping or cooking for their families	Anemia	F	15-30
3	Young women who do the shopping or cooking for their families	Anemia	F	15-30
4	Mothers and mother-in-laws	Anemia	F	35-50
5	Mothers and mother-in-laws	Anemia	F	35-50
6	Young husbands	Anemia	M	18-30
7	Young husbands	Anemia	M	18-30

The locations of focus group discussions are indicated in Table 2.

**Table 2. Location of focus group discussions**

<b>Village, Village Council</b>	<b>Region</b>	<b>Name of Rural Health Care Post</b>	<b>Population</b>	<b>Group Number</b>
Kuchkak village	Bagdad	Kuchkak (III)	8220	1
Zilkha village	Oltyarik	Zilkha (III)	5960	2
Same	Same	Same		4
Same	Same	Same		7
Birlik village council, Yakkatut village	Toshlok	Birlik (III)	12357	3
Same	Same	Same		5
Shakhimardan village council	Ferghana	Shakhimardan (II)	3400	6

Fieldwork was implemented over the period from April 1-11, 2001. Group discussions were conducted by two teams from the Expert-Fikri Center – a team of men (a moderator – Khasan Nazarov, an assistant – Ilkhom Khalilov) and a team of women (moderators – Dilbar Gulamova and Mavluda Eshkhuratova, an assistant – Mukaddas Azizova).

There were no difficulties during the selection process. Inhabitants of residential areas where discussions were conducted readily agreed to participate in them. Discussions took place in isolated premises, usually in the buildings of village councils, and were recorded on a Dictaphone. Detailed shorthand reports were prepared on the basis of these recordings.

The following report was prepared by the project manager Igor Pogrebov on the basis of shorthand reports as well as on the moderators' comments.

## I. GENERAL AWARENESS OF ANEMIA

### A. What is Anemia?

The discussions showed that residents of the surveyed regions, in general, have a good idea of what anemia is. None of them provided an extended definition of the illness; nevertheless due to the prevalence of the disease practically all of them encountered it, if not among the family then among their neighbors or friends.

The participants used several ways to describe anemia. A popular way was to describe the appearances of people suffering from anemia and signs by which the illness can be recognized. These descriptions included the following statements:

*When anemia is present lips become pale.* [Woman, 43 years of age. Group # 3].

*It is easy to detect anemia. For example, a pale face is a common sign.* [Woman, 27 years of age. Group # 1].

*You can recognize anemia the by way the person looks. A sick person becomes pale and weak. He tires quickly. He loses appetite.* [Woman, 27 years of age. Group # 2].

*Today anemia is a very prevalent illness among women and among daughters-in-law. For example, my daughter-in-law also has anemia. The person sick with anemia is pale and feeble.* [Woman, 49 years of age. Group # 5].

*An anemic person's eyes look tired; he has brittle nails.* [Woman, 18 years of age. Group # 1].

*You can recognize a sick person by his appearance. The sick person has an unhealthy, dark skin tone, and a healthy person's complexion is rosy.* [Woman, 19 years of age. Group # 2].

*Almost white and feeling dizzy.* [Woman, 48 years of age. Group # 5].

*You can detect the disease by facial appearances. I am very pale, but when I had a blood test it turned out that everything was fine.* [Woman, 26 years of age. Group # 2].

Another widely used method of defining anemia was the description of symptoms which indicate that a person suffers from anemia. Participants noted:

- Dizziness;
- sudden darkening before the eyes;
- weakness, fatigue;
- breathing disorders; and
- desire to eat salty foods, chalk, plaster, etc.

*Dizziness and weakness is also observed.* [Woman, 21 years of age. Group # 1].

*And your stomach swells up. I learned this from my grandmother. All diseases occur because of anemia.* [Woman, 23 years of age. Group # 1].

*I understood it myself. During the third month of pregnancy she (daughter-in-law) complained of dizziness and decline in strength. I advised her to see a doctor. My husband is a medical assistant and he said: "Obviously she has anemia. That is why she feels dizzy." Then I looked after her thoroughly. Now, thank God, she is all tight. She gave birth to a healthy daughter, who now is 9 months old. We carefully looked after her.* [Woman, 49 years of age. Group # 5].

*I felt that I was sick when everything went dark before my eyes. I referred to a doctor. They said I was fine. My blood became thin.* [Woman, 18 years of age. Group # 1].

*In our village you can say a person is anemic by the way he works. Those who have anemia become tired quickly and breathe heavily, isn't it so?* [Woman, 43 years of age. Group # 4].

*A person who suffers from anemia craves salty foods. Such people, in addition, eat chalk, and plaster, and like to smell gasoline.* [Woman, 19 years of age. Group # 2].

*I encountered cases of anemia three or four times. These anemic people look feeble and they cannot work. These people don't pay proper attention to their illness. They think that they will recover by themselves. They think that they are in such a condition because of exhaustion. Such people often fall ill. There are many examples among our population. [Man, a bank inspector. Group # 6].*

Far fewer participants attempted to define anemia as the lack of red blood cells or iron deficiency in blood. Here are characteristic statements for this definition:

*Anemia is malokrovie (Russian word for anemia). This is lack of iron in the blood. For the most part rural women suffer from this disease because they don't consume enough fruits, nuts, and raisins. [Man, 25 years of age. Group # 7].*

*Anemia is a disease of malokrovie. Mainly pregnant women have anemia. You need to know how this disease occurs. This is the key factor for effective treatment. [Woman, 30 years of age. Group # 2].*

Finally, these participants ranked anemia on a par with other, in their opinion, "blood diseases" which included jaundice, diabetes, and even syphilis.

*Jaundice is also a blood disorder. [Woman, 26 years of age. Group # 2].*

*Jaundice is detected through blood tests. This is a blood disease. One should consume fewer sweets. [Woman, 27 years of age. Group # 2].*

*Diabetes is also a blood disorder. [Woman, 26 years of age. Group # 2].*

*There is a blood disease called syphilis. [Woman, 30 years of age. Group # 2].*

Thus, it should be noted that despite the widespread occurrence of anemia among the rural population of the surveyed regions, most residents had a rather vague idea about anemia. Certainly, many of them have seen anemic patients, encountered symptoms of anemia, but they had very unclear information as to how this disease develops.

## **B. Anemia and Malokrovie<sup>1</sup>**

When people compared anemia and malokrovie, the majority thought that these two terms meant one illness that had two names. Nevertheless, many of them tried to define malokrovie in another way than anemia. Thus, for example, nobody attempted to define anemia as the decrease of hemoglobin in blood, whereas this condition was widely used to define malokrovie. Here are some related statements:

*I think that malokrovie is lack of blood. [Woman, 40 years of age. Group # 3].*

*Malokrovie is a complication of other diseases. [Woman, 48 years of age. Group # 5].*

*Malokrovie occurs due to lack of certain elements in the blood. For example, iron shortage leads to blood circulation disorder. [Woman, 30 years of age. Group # 2].*

*Malokrovie is lack of iron in the blood. Iron is contained in apples, apricots, liver, and eggs. But we do not consume enough of these foods. [Man, 30 years of age. Group # 7].*

*Malokrovie is lack of hemoglobin in the blood. [Man, a bank inspector. Group # 6].*

*Generally, pregnant women and girls suffer from anemia. This happens because of poor nutrition. In rural areas there are no chances to have good diets. Food is not rich in vitamins. This disease is widely spread among us. In rural areas unemployment is high. No money. [Woman, 21 years of age. Group # 1].*

*I think that malokrovie is the decrease of hemoglobin in the blood. Occurrence of this disease may be explained by the specifics of the Uzbek people. [Man, a bank inspector. Group # 6].*

At the same time, most participants in the discussions did not make an effort to provide a separate definition for malokrovie and argued that anemia and malokrovie mean the same thing.

*This disease manifests itself in two forms, but this is the same disease. [Man, 24 years of age. Group # 7].*

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<sup>1</sup> In Russian two words are used for anemia: anemia and malokrovie. One of the goals of this survey was to find out whether or not people think these two words mean the same illness.

*They are the same thing. Anemia is the same as malokrovie. This is how we understand it. [Woman, 43 years of age. Group # 4].*

*Anemia and malokrovie are the same disease. This disease occurs because of lack of blood in a human body. [Woman, 37 years of age. Group # 2].*

*I think they are the same. But even if they mean different things, we don't understand anything about it. Doctors know what it is. [Man, 23 years of age. Group # 6].*

There were some participants who tried to establish cause-and-effect relationships between anemia and malokrovie. Below is one such argument:

*I think that anemia occurs in villages. If a person has enough blood, then his body is healthy and he will not have anemia. Anemia occurs as a result of malokrovie. [Man. Group # 6].*

Finally, there were some attempts to define malokrovie as “strange food cravings”:

*Malokrovie occurs when, for example, women eat soil, and how do you call it? Calcium gluconate? Soil seems to them very tasty and that's why they eat things like this. If you tell a woman “Don't eat it, this is soil!” she will eat it anyway. When you go to work, they hide and eat it. Probably the body needs this. It's calcium gluconate. If you eat too much of it you'll have little blood. [Man, a guard. Group # 6].*

Again, we should mention that most participants had a vague idea about malokrovie. When, for example, the moderator asked whether malokrovie was “thin blood” or “lack of blood,” the group, as a rule, divided into two parts. The first group thought malokrovie is thin blood, and the second group believed that it is lack of blood. At the same time, many participants unanimously stated that malokrovie occurs when “hemoglobin decreases” and they even indicated specific figures that characterized the blood of a healthy person and that of a sick person. Thus, signs of malokrovie (or anemia) such as appearance, decreased level of hemoglobin, and others were familiar to participants, but almost all of them were unaware of how this disease develops.

## II. CAUSES AND COMPLICATIONS OF ANEMIA

### A. External and Internal Causes for Anemia

In the opinion of the participants, there are many causes of anemia. Conditionally speaking, they can be classified as external and internal. External causes do not depend on people's traditions, customs, and habits. The main reasons that lead to anemia are poverty and financial difficulties. In such cases, people have unhealthy meal plans because they lack the finances to plan proper and adequate diets, rather than their poor knowledge about healthy diets or their unwillingness to have healthy diets.

*Nowadays, there are prosperous families and low-income families. There is no point in hiding this. Some of them can hardly feed their children. And what do they give to eat to their daughters-in-law, if a husband is unemployed and the wife is a homemaker? [Woman, 42 years of age. Group # 4].*

*Of course, financial difficulties. You probably know that there are no jobs in rural areas. Only 30% of the employable population works. One half works, another half doesn't. [Man, unemployed. Group # 6].*

*I work at Narodniy Bank and pay people their pensions. In my opinion, most of the population (about 80%) suffers from anemia. I know how much they earn; I know their families. Even those who have infants do not eat three meals a day. You know that they eat only in the evenings at home. Most of them heat up and eat leftovers from the previous dinner, and, as everybody knows, there are no vitamins in heated food... I heard that some [families] eat meat three times a week. On other days they don't eat meat. If there is an infant in the family, the mother should eat properly. If the mother is not consuming necessary vitamins and is breastfeeding, she can develop malokrovie. [Man, a bank inspector. Group # 6].*

*Presently, it has become difficult to take care of a family. We are very distressed because of this. We can't even eat enough bread. In the past, we would throw bread around. Now even children handle bread with care. [Woman, 37 years of age. Group # 2].*

*The main reason is financial difficulties. Some live in abundance, but most people are going through tough times. One sack of flour costs 7,500 soums, and we eat it up in 4-5 days. Then we have to sell fruit to buy flour. Now children only eat bread. In the city conditions are, of course, better. [Man, 31 years of age. Group # 7].*

*Nowadays everybody has anemia because it occurs as a result of inadequate and untimely nutrition. In addition, reasons that lead to anemia are lack of rest and stress. Anemia occurs more often because of all the hardships. This disease occurs not only in our republic, but also in others. But in Uzbekistan it occurs more often. Anemia develops also because women do not observe an interval between childbirths; they are giving birth to one child after another. [Woman, 39 years of age. Group # 3].*

*Schoolchildren don't eat sufficiently. When we studied at school, children were given snacks for lunch, cookies and tea; now they don't do this. [Woman, 48 years of age. Group # 5].*

*There are some families that do not eat meat for months. Office workers do get paid, but our farmers don't. They gather cotton for 3-4 months, and if [managers of collective farms] want to pay them, then farmers get paid, and if they don't want to, farmers don't get paid. [Woman, 42 years of age. Group # 4].*

*Our diets don't meet world standards. It is necessary to eat one egg a day. Three hundred and sixty-five eggs a year. And 250 grams of meat. It is also important to eat fish. Consumption of fish improves eyesight. We don't have an opportunity to eat like this. Quality of food is also crucial. [Man, 25 years of age. Group # 7].*

*We have terrible unemployment. It would be good if some enterprises were established here. [Woman, 17 years of age. Group # 1].*

*Speaking frankly, lack of money leads to the disease. For example, after a medical examination a doctor gives a prescription. One needs money for it. And if the doctor prescribes some treatment, it also requires money. And if in these villages problems related to lack of money exist, there is no point in hiding it. [Man, unemployed. Group # 6].*

Another essential external reason is illnesses and some conditions (e.g., pregnancy) that might lead to anemia. Diseases of nerves, vitamin and iron deficiency in blood, and multiple surgeries may cause anemia. Finally, an essential external reason of anemia is a natural condition such as pregnancy.

*Anemia may develop because of nerves. In fall, the blood thins. Any injury may lead to bleeding. [Woman, 21 years of age. Group # 1].*

*In most cases, pregnant women suffer from anemia. When they learn about this disease they see a doctor or take a blood test. [Man, a student. Group # 6].*

*Anemia develops because of lack of vitamins and iron in blood. Irritability is related to internal diseases. Everything depends on the individual. [Woman, 24 years of age. Group # 2].*

*I think that some other internal diseases lead to this illness. Seventy percent [of anemic people] suffered from different diseases before. I heard that this disease is treated with something. [Man. Group # 6].*

*Pregnant women suffer from malokrovie. My wife also had it. But we cured her. [Man, 25 years of age. Group # 7].*

*Yes, malokrovie mainly occurs because of iron deficiency. Internal bleeding may occur during menses that happen every month. Some women say that their [menses] should have lasted 3 days, but instead they continued for a week or ten days. Malokrovie develops because of long-lasting bleeding. [Woman, 39 years of age. Group # 3].*

*Anemia may occur in people who have had many surgeries. For example, a person who had three or four surgeries is transfused blood from someone else. Very few people are transfused blood during surgery. [Man, a student. Group # 6].*

External reasons may include **wrong treatment** or health care services.

*Often one of the causes of anemia is that young women in childbirth have IUDs inserted right after delivery. This is wrong... Most diseases, I think, occur because of this. All young people are sick and have colds. From this comes anemia. I have had an IUD for 21 years. I don't even know if I still have it or not. I had an IUD inserted forty days after childbirth. And now they insert it right away – and anemia results from this! [Woman, 49 years of age. Group # 4].*

However, the most significant factors along with financial difficulties and poverty are, from the participants' perspective, existing traditions, customs, nutrition stereotypes, as well as way of life. These reasons are not external; they are internal. Hence, the participants classified traditional interrelations in the family, sex and role stereotypes, as well as reproductive behavior as causes for anemia. Moreover, not only women repined at their unhappy destiny, but also some men agreed that the increase in anemia rates among women is brought about by inequality in the family.

*A woman does not think about herself. A pregnant woman should follow the doctor's advice. She should give birth every year. [Woman, 30 years of age. Group # 2].*

*Women don't maintain their health. They look after children, do things around the house and forget about themselves. This is how anemia develops. [Woman, 21 years of age. Group # 1].*

*A woman cannot take a rest at home. Guests may come and they ask right away, «And where is your wife?» The woman begins to hustle. We have no culture. I have a friend; he is Russian. Their way is different. [Man, 31 years of age. Group # 7].*

*Women feed poorly; they economize on themselves. They eat non-caloric foods. [Woman, 15 years of age. Group # 1].*

*I think that malokrovie is the decrease of hemoglobin level in blood. Development of this disease can be explained by specifics of the Uzbek people's mentality. After an Uzbek guy gets married he necessarily tries to make a child without observing any intervals and makes his wife give birth to one child after another. And they try to bring up their children faster. I think that our body is like a battery; it is charged for some time and if it is not recharged it begins to deteriorate. A woman's body is similar. If the body is not allowed a certain interval between births, then it [body] begins to wear out and this leads to various illnesses. For example, malokrovie. An interval between childbirths should be four to five years long. During this period the mother's organism fully recovers and is ready for new childbearing. During this time the body accumulates strength and energy. And if the body doesn't take breaks, there is no way it will endure. Our people don't pay proper attention to this. [Man, a bank inspector. Group # 6].*

A variation of inequality in the family is the **position of daughters-in-law** in a husband's family. Most participants, both male and female, mentioned that not only do daughters-in-law not talk about their illnesses and hide them, but they also eat poorly. Daughters-in-law are, first of all, considered as a new workforce; hence, they feel infringed upon and conduct themselves accordingly.

*Daughters-in-law sometimes are embarrassed to eat normally because they came from another home. It takes a while for them to get used to their new situation. At their homes they ate whenever and whatever*

they wanted, but here they are shy. They think: “Maybe, the mother-in-law is watching, or somebody else is watching”. [Woman, 48 years of age. Group # 5].

Our Uzbek daughters-in-law feel shy before their mothers-in-law and don't tell them if they are sick. In their opinion it looks inappropriate. Even when a young daughter-in-law goes to a doctor and finds out that she has health problems, at home she will never tell anyone about this. And she doesn't take measures until the disease becomes severe and comes to serious complications. [Man, a student. Group # 6].

Another important reason is **inadequate organization of nutrition**, which one of the participants called “the Uzbek way of nutrition.” Specific features of such nutrition are its irregularity and consumption of indigestible and greasy food at bedtime:

*I think that this illness occurs as a result of our unhealthy nutrition schedule – eating the Uzbek way. Today most people pay little attention to their health. They are immersed in family problems and they don't have time to maintain their health. Our people don't make their health problems a priority. [Man. Group # 6].*

*I think that this disease develops as a result of poor nutrition. A person sick with anemia, first of all, suffers from stomach disorders. Our people do not follow any nutrition schedules and because of this they suffer from different kinds of diseases including anemia. Even if they begin to consume foods rich in vitamins, it won't help because their stomachs don't function properly. In most cases women suffer from anemia. [Man, a bank inspector. Group # 6].*

Some participants supposed that anemia was caused by unhealthy lifestyles that people lead. This factor along with inadequate nutrition leads to anemia as well as to other diseases.

*Malokrovie probably occurs because a man eats poorly and doesn't participate in sports. I participate in sports. In the evenings, my daughter and I participate in sports. [Woman, 43 years of age. Group # 3].*

*Anemia is widespread in our area through our people's own fault. In the Ferghana valley people grow many useful plants that are not found in Sirdaryo or Samarkand. Because of their naiveté, women don't take the disease seriously. They don't try to stop the disease in the early stages. They don't even talk about their illness with their husbands. [Man, 24 years of age. Group # 7].*

*You should exercise! You can't just eat and eat. You can't just sit, be sorry for yourself, and say: “Oh, I have a headache, oh, I have malokrovie.” On the one hand, eating is good, but, on the other hand, you should exercise. [Woman, 39 years of age. Group # 5].*

Finally, older age groups of mothers and mothers-in-law assumed that one of the main causes for anemia is changed living conditions and habits of the younger generation. Some participants from these groups argued that formerly few people would fall ill with anemia as well as other diseases. On the whole, most of them thought that their generation was healthier physically and spiritually.

*This also depends on their attitude to life. You should take things easier, and young people like to fuss about everything. My daughter is always nervous and hits her child when he wets his pants. This always surprised me. I raised five children, but I never hit them for urinating. That's why I think that malokrovie worsens because of nerves too, and not only food. [Woman, 40 years of age. Group # 4].*

*In our time we worked in the fields and spent a lot of time under the sun and in the air. The body produces vitamin D that helps the body digest any food. And now young people don't work in the fields, and don't get enough sun. If they do work, they do it indoors. Girls, after they finish their studies, don't go to the fields or outdoors either. They marry and soon after that have children. The reason for all these illnesses is absence of vitamin D in their bodies. This is my opinion. Those who spend a lot of time outdoors have better complexions and health. Rural and urban people differ by facial appearances, don't they? [Woman, 43 years of age. Group # 4].*

*[The reason] is that they became fastidious about the food because they don't work too hard. They don't eat useful food. You should eat diverse foods. Even if you don't eat much food, it should be diverse. You shouldn't choose only what you like. [Woman, 43 years of age. Group # 4].*

*This also depends on his movements: the more a person moves the more blood circulates in his body. I, for example, never had malokrovie; I have six children and nothing happened. Now they give birth to premature and unhealthy children. My daughters too. In the past, we would lift heavy sacks and we would not have a miscarriage. Now I also milk a cow and plow. A pensioner, I work three times harder than my young daughters-in-law. People even ask me: “Why did you retire?” My son and my husband even if there is something to do they say: “Let mom do it.” I eat quickly and then do all the things around the house, then I go wherever I want, then I sleep if I want. That's it. [Woman, 49 years of age. Group # 5].*

We also received an explanation limiting the variety of reasons to a simple and easily understandable, in the opinion one participant, reason.

*It doesn't depend on food. You shouldn't shift all the blame onto food. Some people eat a little, but they are healthy. And others can eat a lot and suffer from malokrovie. People should eat normally. We bring everything from the bazaar, although we live in a village. We should eat everything that contains vitamins. Newspapers say that people who don't eat meat are also healthy. Diseases occur not because we don't eat meat. In villages people eat a lot of bread. Our women chew bubble gum too much. That's where all diseases come from. [Woman, 43 years of age. Group # 4].*

## **B. How Can Anemia Harm Health**

Is anemia dangerous for our health? There is no doubt that it is dangerous - almost all participants thought so. However, their views differed, when it came to the degree of danger. Thus, some participants united into a group of “extremists” who considered anemia a “life-threatening” disease. Here are some of their characteristic statements:

*After childbirth she lay for seven days, and on the 11th day they began giving her plasma, but it didn't help. They gave her a blood transfusion and then doctors left her untended. She wanted to go to the bathroom and she fell and died there. This happened because of malokrovie. Malokrovie leads to death. [Woman, 49 years of age. Group # 5].*

*Anemia should be treated because it is lethal. I heard that in one community our distant relative died from anemia. [Woman, 43 years of age. Group # 3].*

*I heard that my brother's acquaintance died at the age of 18 because his hemoglobin decreased to 5. First he was sick with jaundice and then his hemoglobin dropped so low. He died because of that. Malokrovie is a dangerous illness. [Woman, 49 years of age. Group # 3].*

*I knew Kirgizova Mamlakat who died when she was 27. She had severe anemia. Level of hemoglobin was 4. She received treatment in Ferghana. But after hospital she stayed home untended. Generally the normal [level of hemoglobin] should be nine. [Woman, 19 years of age. Group # 2].*

*You can die from malokrovie. [Woman, 30 years of age. Group # 2].*

The majority, however, thought that despite being dangerous, by itself anemia cannot lead to death, although, of course, it must be treated. When anemia is present, in the opinion of these participants, a number of symptoms appear. The description of signs demonstrated a contradiction in the opinion of the participants about anemia. Thus, one group said that because of anemia blood pressure may elevate and another group said that it may decrease.

*Blood pressure may elevate. This happened with me. Doctors told me that my blood pressure was elevated. And exactly at that time I had malokrovie. I could hardly lift my head. That is because I was sick with malokrovie and I got very weak and that's why I could barely overcome high blood pressure. [Woman, 42 years of age. Group # 3].*

*When anemia is present, blood pressure decreases. [Woman, 48 years of age. Group # 5].*

At the same time, practically all participants had the opinion that people who suffer from anemia become weak and pale, that they feel dizzy, their heartbeat accelerates, and memory worsens.

*A person becomes weak and he always wants to sleep. [Woman, 42 years of age. Group # 3].*

*Anemia is malokrovie. Mainly it occurs among women and children. Children sick with anemia quickly tire and their memory worsens. [Woman, 49 years of age. Group # 3].*

*My sister always had headaches. Once she had a headache for several days and then she fell ill. Doctors said that she had malokrovie. My sister is 25. Then she received treatment and now she feels better. She would always have headaches and her nails would become white and stick to her skin. She fell ill with malokrovie after she had given birth to her second son. [Woman, 44 years of age. Group # 3].*

*And the stomach swells. I learned about this from my grandmother. Malokrovie causes all diseases. [Woman, 23 years of age. Group # 1].*

*People ill with anemia suffer from dizziness and extraordinary weakness. [Woman, 18 years of age. Group # 1].*

*People who have anemia cannot overcome other diseases. Even ordinary diseases like flu; they have severe flu for 5-10 days. People with normal blood recover from flu in 3-7 days. [Woman, 39 years of age. Group # 3].*

*And you feel dizzy, and when a person gets up abruptly, his head starts “to boil.” Our girls who had malokrovie would say that they felt dizzy and their heads began to boil when they got up rapidly. [Woman, 44 years of age. Group # 3].*

*A person suffering from malokrovie gets exhausted fast; he complains of accelerated heartbeat and turns pale. [Woman, 17 years of age. Group # 2].*

Some participants indicated other quite specific symptoms caused by anemia:

*My friend’s fingernails and toenails turned black and her skin cracked. She was ill. And during pregnancy her condition worsened a great deal. [Woman, 27 years of age. Group # 2].*

*I heard that rash is also caused by blood disease. It appears because of malokrovie and lack of vitamins. Doctors say that rash appears because of malokrovie. [Woman, 40 years of age. Group # 3].*

*When malokrovie is present a person becomes very irritable. And he can get used to such behavior. It becomes a reflex. Then white spots can appear on your face. [Woman, 44 years of age. Group # 3].*

*Girls lose hair. Now many girls lose hair. This is connected with malokrovie and weakness. You feel the lack of some substance and this leads to hair loss and weakness. [Woman, 44 years of age. Group # 3].*

In the opinion of some participants, the influence of anemia on the functions of the body, especially heart activity, is more dangerous than anemia itself.

*Malokrovie affects the cardiovascular system – the heartbeat accelerates and this affects the heart. [Man, recently married. Group # 6].*

*If is not treated in time anemia might have complications. It can affect the heart. [Man, 25 years of age. Group # 7].*

*I heard that after this disease a person has poor eyesight. Complications of this illness affect eyes and weaken them. They affect brain activities. If a woman becomes near-sighted, this happens, as I heard, from anemia. [Man, a bank inspector. Group # 6].*

*I think that some other disease can aggravate malokrovie. My son complained of a stomachache. We went to see a doctor, and it turned out he [the son] had malokrovie. That’s why he received treatment. He took vitamins; then he had appendicitis. It’s been a month and a half since he’s recovered. Pinkness returned to his cheeks right away. That’s why I think that if one suffers from a disease it’s related to anemia. [Woman, 48 years of age. Group # 5].*

Finally, a group listed symptoms characterized as “strange food cravings”:

*A person who has anemia likes to eat salty foods. Such people, in addition, eat chalk, plaster, and smell gasoline. [Woman, 19 years of age. Group # 2].*

*My child ate chalk. After the doctor’s examination we found out that he had anemia. [Woman, 27 years of age. Group # 2].*

*My son has malokrovie. He also smelled gas and poisoned himself. Probably his body lacked something. [Woman, 27 years of age. Group # 2].*

*My son liked to smell gas too. My daughter ate chalk. Doctors said that they did this because of malokrovie. She is four. But I did not suffer from malokrovie when I was pregnant. We cured our son; we hid gasoline from him. We treated him with medicine. [Woman, 37 years of age. Group # 2].*

### **C. Treatment of Anemia by a Doctor**

Three groups of participants formed as a result of answering the question related to treatment of anemia by a doctor. The first group supposed that patients should strictly follow a doctor’s recommendations because only in this way can one overcome the disease.

*Anemia should be treated in time. You should see a doctor immediately. [Woman, 17 years of age. Group # 1].*

*We visited [a doctor]. We even brought a professor from Tashkent. [Man, a student. Group # 6].*

*You should consult with doctors. You should follow the doctor's advice and recommendations. Take all medications. [Woman, 27 years of age. Group # 1].*

*Doctors advised me to feed my son vitamins and give him Ferroplex medication. My son took these tablets. I treated him for three months. Then he was 6.5 years of age. Doctors really helped us. In three months his hemoglobin increased from 8 to 9.5. [Woman, 39 years of age. Group # 3].*

*Women suffering from this illness should tell their relatives about it without shame or embarrassment. If they can't tell their mothers-in-law, then they should tell their mothers or husbands. They should try to prevent this disease and they need to visit a doctor. [Man, inspector on natural gas supply. Group # 6].*

*Many people treat malokrovie at home. This shouldn't be done! I do it this way, but my husband is a doctor and he tells me what medications to take. People think: "I'll recover myself; I'll eat some meat and liver, and I'll get better." This is wrong! I was a witness to such a story. A person had anemia and was constantly fed fried liver and there was a worm in it. And this worm went into his blood. He had weak blood and it was harder to fight this. [Woman, 49 years of age. Group # 5].*

*You can't recover at home. [Woman, 30 years of age. Group # 2].*

*Many people think that once they begin to eat normally they will get better. Why should they see a doctor because of such a trifle? It's true that we spend more money on weddings than on our own health. [Man. Group # 6].*

*When doctors found out that my wife had anemia, they referred her to a regional center. When she visited a doctor in the regional center she was prescribed a fifteen-day treatment. During 15 days she was injected with different vitamins and other medications. Now she feels fine. [Man, a bank inspector. Group # 6].*

Another group – although it was in the minority – was opposed to doctors and thought that anemia can be cured without their intervention. Some of them thought that there are many incompetent doctors and therefore visiting them is only a waste of time and money.

*Our mother doesn't like doctors. She prefers to treat using herbs and fruit. A disease always has complications. [Woman, 27 years of age. Group # 2].*

*My son is a seventh-grader. In childhood he often fell sick. We received treatment in Faiziabad, but nothing helped us. He still fell ill every week. Then we received treatment in Khamza for twelve days. From there we were referred to Margilan where we were treated for a week. Then we were referred to Tashkent. In Tashkent we underwent an eighteen-day treatment. It turned out that his body lacked iron. And there he received a really good treatment. Now he is healthy and studies in the seventh grade. In Tashkent we were told to come again for a follow-up examination, but we never went. He always had fever. He was given injections, but they didn't help. We received treatment in Khamza, but they couldn't detect anything. The same in Margilan; he had a blood count, but doctors couldn't diagnose anything. Then we went to Tashkent and in Tashkent I was asked: "Does your child lick shoes?" I told them that I often see him do this. And they said that he lacked iron and began treating him for anemia and cured him. [Woman, 49 years of age. Group # 4].*

*Health workers cannot diagnose correctly. I didn't see doctors advising people to eat some [certain] foods. For example, you can recover by eating peanuts. [Man, 24 years of age. Group # 7].*

Finally, there were some who thought that one should follow the doctor's advice but that basic activities for anemia prevention need to be adequate nutrition and preventive health check-up of the population.

*That's what should be done... [doctors] should go around communities – for example, in Shakhimardan village, they should gather several communities, all people, and implement check-ups, like in military registration and enlistment offices ... It would be good for prevention if the population were checked every month. Or at least, once in three months. [Man, unemployed. Group # 6].*

### III. ANEMIA and NUTRITION

#### A. Influence of Various Staple Foods on Anemia

##### 1. Anemia Prevention Through Consumption of Various Staple Foods

Since good nutrition is the basis for good health, the participants assumed that anemia might be prevented through consumption of adequate and appropriate diets. Contradictions evolved only when the question related to the kinds of staple foods that need to be included in wholesome diets was discussed. Most participants thought that anemia may be prevented through daily consumption of meat, meat products, and, more comprehensively, animal foods.

*One should eat fats, eggs, and beef, that is, proteins. [Woman, 18 years of age. Group # 1].*

*I had malokrovie. Every month I should eat three kilos and 800 grams of meat. One should eat eggs and meat. [Woman, 30 years of age. Group # 2].*

*One should eat liver, tongue and navvat [Oriental sweets]. [Woman, 43 years of age. Group # 3].*

*Of course, the main thing is meat. Liver and meat. [Woman, 48 years of age. Group # 5].*

*The main thing is to eat meat. Better yet is to eat eggs; if you fry eggs in butter for breakfast you'll have a lot of energy. [Woman, pensioner. Group # 5].*

*One should eat 200 grams of meat a day and also consume foods that are rich in proteins. [Man, 23 years of age. Group # 6].*

Among the participants who believed that a meat diet is crucial in preventing anemia, there was a group which considered liver and tongue to be especially effective for anemia prevention. It is worthwhile noting that participants observed certain rituals when eating cow's tongue, that is, rules for its proper consumption.

*When my son had anemia our doctor suggested that I take a cow's tongue, cut it up into pieces, steam it, and feed it to my child as much as he can eat. And so we did. [Woman, 44 years of age. Group # 4].*

*My daughter-in-law is also pregnant. When she visited a doctor, she was told that she had malokrovie. We immediately went [to a market] and bought liver; we cooked it and told her to eat it. We brought her cow's tongue and cooked it. Then she went to see a doctor again and he told her that [her level of hemoglobin] was 8. [Woman, 60 years of age. Group # 5].*

*You need to eat liver to be healthy. There is 4% of iron in liver. [Man, 25 years of age. Group # 7].*

*You should buy liver at a market and eat it slightly fried. [Woman, 42 years of age. Group # 4].*

*Our ancestors thought liver was useful and they drank animals' blood when slaughtering them. They also consumed a lot of black raisins. [Woman, 39 years of age. Group # 4].*

Another group of participants supposed that due to the cost of meat and meat products at the present time, a wholesome diet should include more vegetarian foods.

*Right now living conditions are of course tough. But, nevertheless, it's possible to find a way out in rural areas. If you don't have a cow, then your relatives or your friends might have one. So, milk can be always easily found. And dried apricots too can be found, although many trees dried up. It all depends on the individual. [Woman, 40 years of age. Group # 4].*

*One needs to eat food rich in vitamins and one can't eat too much fat. [Woman, 18 years of age. Group # 1].*

*Nothing is better than greens; they are vitamins. [Woman, 48 years of age. Group # 5].*

*This year fruits were cheap; that's why we didn't have any troubles. We recovered from flu this year easily because we ate a lot of fruit. We ate a great deal of apricots. Since the beginning of the New Year I started giving children compotes made from apricots. Probably that's why we overcame the flu so easily. [Woman, 39 years of age. Group # 3].*

*It's very useful to drink fruit juices. Tomato soup and tomato juice are also helpful. [Woman, 49 years of age. Group # 4].*

*Compotes made out of apricots and out of mulberry. You need to eat regularly at the same time. You need to eat a lot of greens. [Woman, 49 years of age. Group # 5].*

*Compotes are useful, especially those made out of cherries. [Woman, 44 years of age. Group # 4].*

Some participants believed that consumption of one product of plant origin (e.g., apricots, raisins, or honey) is sufficient for prevention of anemia.

*My late grandfather, God bless him, ate plenty of apricots and liked them very much. And even when he was 90, he had a healthy heart. It's because he liked apricots. [Woman, 40 years of age. Group # 4].*

*They say that raisins contain a lot of vitamins that help to fight anemia. [Woman, 42 years of age. Group # 3].*

*Compotes are useful, especially those made out of sour cherries. [Woman, 44 years of age. Group # 4].*

*Raisins mixed with honey, one spoonful every morning. [Woman, 48 years of age. Group # 5].*

*Natural honey cleans blood. My mom told me about this. [Woman, 27 years of age. Group # 1].*

*It's also useful to boil dried apricots and to drink the decoction. [Woman, 49 years of age. Group # 4].*

Finally, some participants assumed that it was a matter of consuming certain staple foods so that all these foods were equally represented in one's diet. In addition, it was imperative that they be cooked properly so that they retained their food value.

*I read a lot. Avicenna said that it's enough for a person to eat one almond a day. And it can serve as food for the whole day. And how much do we eat?! In rural areas people go all the time to gatherings and weddings. And the person who goes to gatherings a lot can eat meat twice a day. But even among these there are anemic people. In order to avoid malokrovie, it's important to eat as much food rich in vitamins as possible. Some people have dreary diets; they consume few vegetables. [Woman, 43 years of age. Group # 4].*

*In the past I liked to eat rich and fried food. I looked bad; I got sick and my skin became yellow. My neighbor said: "You work at the central library and get paid on time. That's why you eat a lot. You need to eat thin soups and more vegetables." And really, recently I had stomach surgery and now I only eat vegetable soups. Thank God, now I am healthy and my complexion is normal. [Woman, 40 years of age. Group # 4].*

*Of course, all vitamins are lost when food is fried. That's why if I do fry vegetables, I do it slightly. It's best to boil them. [Woman, 39 years of age. Group # 4].*

## **2. Treatment of Anemia Through Intake of Different Staple Foods**

In the opinion of most participants, anemia can be prevented and even treated through consumption of certain staple foods. Some of them thought that it was important to consume a variety of useful foods; they even gave examples of how consumption of certain foods helped them or their relatives.

*You should eat all fruits. Besides that, you should consume meat. In rural areas we have no cheese, and cheese should also be eaten. And butter too. [Woman, 39 years of age. Group # 3].*

*My younger sister has malokrovie. But we don't give her medications. Our dad doesn't let us. We only give her fruits. Now she feels a little better. In the past her hemoglobin was 7. At school she had a blood count and we found out that she had malokrovie. Dad gave her a special kind of chocolate for malokrovie, and he kept giving it to her. He gave her this chocolate according to a certain schedule: one cube a day and 1.5 cubes for the next day. [Woman, 44 years of age. Group # 3].*

*My relative recovered. She would eat sacks of fruits. [Woman, 19 years of age. Group # 2].*

*Anemia can be treated at home as well. One should eat a lot of vegetables, fruits, and take other vitamins. This normalizes the amount of blood in the body. [Man, a student. Group # 6].*

*Fruits and vegetables should be consumed. They contain vitamins; if one kind of them doesn't another one does. All fruits should be consumed. [Woman, 44 years of age. Group # 3].*

Another group of participants thought that only consumption of some special foods or food groups will help overcome anemia. Both animal foods and foods of plant origin were indicated.

*Yes, more meat should be eaten and more proteins should be consumed. Meat cures anemia better than other foods. [Man, a bank inspector. Group # 6].*

*My son's hemoglobin [level] dropped to 7. I have no money for medications. One needs to eat apples and tongue. We could feed him only one time. [Woman, 27 years of age. Group # 1].*

*It turns out that a person sick with anemia should eat tongue alone and shouldn't share it with anyone. I ate two tongues. I didn't share with others. It turns out that a vitamin is accumulated in one spot and if you share a piece with somebody it might be exactly that piece that has all the vitamins. [Woman, 35 years of age. Group # 3].*

*People who suffer from anemia should eat pistachios, almonds, and raisins. We don't grow pistachios and almonds. Duck meat and raisins contain iron. We only grow cucumbers and radishes. Everything is very expensive. One kilogram of meat costs 950 soums. Pistachios that contain 8% of iron cost 1,500 soums per kilogram. [Man, 31 years of age. Group # 7].*

*Our ancestors thought that it was useful to eat liver and they drank the blood of animals when slaughtering them. They also consumed plenty of raisins. [Woman, 39 years of age. Group # 4].*

*I had anemia myself when I was pregnant. I received treatment at a hospital. I had a blood count and it turned out to be 8[level of hemoglobin]. After I was discharged from the hospital I ate tongue and fruits. I was given a home remedy made out of raisins, peanuts, and apricots. I used this remedy for 40 days. This is grandmother's recipe. I also ate apples. Thank Allah, my blood increased to 12. I didn't take medications or injections because I was pregnant. [Woman, 21 years of age. Group # 1].*

*My younger son had suffered from anemia ... We began feeding him foods that we thought improved the blood. We fed him fried liver. We could barely increase his hemoglobin up to 9, and only after that he was admitted to school. [Woman, 39 years of age. Group # 3].*

*Red carrots have plenty of vitamins. When I was at a hospital I was recommended to eat one kilogram of carrots a day. [Woman, 21 years of age. Group # 1].*

*You need to eat liver. Cow's liver. [Man. Group # 6].*

*Our daughter-in-law recently became very pale. She is pregnant. I advised her to eat eggs cooked in a special way. Eggs should be fried on the fire and then buried in ashes. In a week our daughter-in-law looked much better again. [Woman, 30 years of age. Group # 2].*

*One needs to consume more milk and katik (sour milk) to get enough proteins. [Woman, 48 years of age. Group # 3].*

*She needs to drink more milk. I believe in the healing powers of milk. [Woman, 43 years of age. Group # 4].*

*My daughter – a ninth grader – had malokrovie. Her level of hemoglobin was measured at school and it was 7. I thought that they made a mistake at the school. I took her to a doctor, they said it was seven, and they prescribed her a treatment. We did as they said. Everything disappeared. I gave her apricots, apples, and chocolate. Chocolate was most useful. [Woman, 39 years of age. Group # 5].*

*When I was at a hospital in Margilan, children were given sour milk and curdled milk. This really helped the children. I don't have a cow, but I always try to drink sour milk. It cleanses the blood and tones up the body. [Woman, 49 years of age. Group # 4].*

*Red beets that are previously cooked should be eaten. Products rich in albumin, vitamins, and proteins need to be eaten. [Man, 23 years of age. Group # 6].*

*If it is mild anemia, then [an anemic person] may be given more apricots and raisins. There are a lot of fruits and nuts in our village presently. And if there is a way that we can treat anemia ourselves, we try to do this. For example, I cured my daughter myself doing the following: I added one spoonful of sugar to lactoserum (whey) and left it in a dark warm place for twenty-four hours. She daily drank this mixture and it helped her very much. This solution contained a lot of glucose. [Woman, 43 years of age. Group # 4].*

Foods of other origins were rarely mentioned. Some participants remembered about a wine called “Kagor” and a sweet bar called “Gematogen”.

*“Kagor” wine and “Gematogen” sweet bars contain a substance that helps treat malokrovie. The sweet bars are sold at drugstores. [Man, 27 years of age. Group # 7].*

Thus, the participants agreed in a single view related to the treatment of anemia through consumption of various staple foods: when some signs of the illness appear large amounts of certain kinds of staple foods should be added to diets. In addition, the opinions of participants pertaining to how anemia should be treated did not reflect their personal diets. The next section presents information about this.

### 3. Consumption of Various Staple Foods

The Uzbek cuisine is based on cooking of meat dishes. There are almost no vegetarian dishes in the Uzbek cuisine. If people deny themselves consumption of meat, this is usually brought about by poverty and their inability to afford meat rather than due to consideration of its use for health or religious concerns.

*In the past we would eat mutton all winter; now we don't have such an opportunity. [Woman, 37 years of age. Group # 2].*

*Everything is expensive and we don't have enough money. If we grow something on our field we take it and eat it, but if we need to buy it and we have no money for it, then we just don't buy it. [Woman, 48 years of age. Group # 5].*

*We have many fruits in the countryside. We also have dried fruits and raisins. We only have difficulties with meat consumption. [Woman, 18 years of age. Group # 1].*

*People can't afford it; that's why there's no demand for it. And as you know, demand causes supply. That's why little meat is consumed; for example, there is no mutton at all, and mainly we eat beef. [Man, unemployed. Group # 6].*

Such a state of affairs makes people search for replacement of animal foods.

*Beans contain many nutrients. So beans can replace meat. We grow a lot of beans. [Woman, 30 years of age. Group # 2].*

*We eat a lot of "mash" (small green beans); it is very useful, even more useful than meat. It is rich in vitamins and that's why we eat it. It's very a nourishing and nutrient-dense food. [Woman, 49 years of age. Group # 5].*

According to the participants' views, financial difficulties not only make people turn to vegetarian foods, but also lead to their unlimited consumption if there is such an opportunity. Goals of such diets are mainly satiation rather than wholesomeness and usefulness.

*... you know how Uzbeks go about this: if there is one kilo of something – they will eat that kilo, if there are two kilos – they'll eat two. This isn't helping the body. If people eat according to a certain norm then that's quite another matter. And sometimes they don't eat for weeks! [Man, 23 years of age. Group # 6].*

*For us it is important that the food be substantial and we don't pay attention to vitamins. We see on television the way people eat abroad but we can't be compared to them. I, for example, worked in Korea. There they eat not three but four times a day. Their food is delicious and nourishing, I liked it. But when I asked my family to cook like they do in Korea, they refused and said that we are Uzbeks and Korean food wouldn't suit us. I think the reason why Korean food was delicious was because they have a humid climate and they do not use much salt in their foods. After I came back I couldn't eat our food. Meals are now prepared for me in a separate pot. [Man. Group # 6].*

The most characteristic feature of the Uzbek diet is the wide use of tea. People drink tea before, during, and after their meals. For breakfast, according to the participants' statements, they "have tea and a flat cake." Both black and green teas are used. Tea is considered to be a necessary addition to any food and without which food may not be properly digested and assimilated.

*For breakfast and lunch we necessarily drink hot tea. Otherwise we'll have a headache. [Woman, 27 years of age. Group # 2].*

*We drink tea with pilaf and other second courses. [Several women. Group # 3].*

*Tea helps digest heavy food. For example, rice. [Woman, 30 years of age. Group # 2].*

*We drink tea with soups too. Because we put breadcrumbs in soup we drink tea. I drink tea with liquid dishes too. [Woman, 44 years of age. Group # 3].*

*We drink tea together with hot dishes. If we were to know that tea is harmful we would drink less tea. [Woman, 18 years of age. Group # 1].*

*My father-in-law is a man of good health. All his life he's been drinking tea. [Woman, 37 years of age. Group # 2].*

*... I take a rest with tea. I drink tea to dilute food made out of mutton fat. [Woman, 44 years of age. Group # 3].*

At the same time, despite a deep-rooted habit of drinking tea, some participants doubted the usefulness of tea. These doubts were caused by information that they had earlier received from other sources (e.g., television, acquaintances, and friends). Therefore, it is not by chance that all groups of participants gave lively feedback during discussions about the harmful effects of tea when it is used with food.

*I heard on television that tea should be had during meals. This is harmful for health. I heard about this during a Russian television show. I don't remember; I think it was the show "Utro" (Morning). [Woman, 39 years of age. Group # 3].*

*A doctor told me: "Don't drink tea with pilaf." When I asked: "Why?" she told me that this promotes malokrovie. But when I eat I forget about this. [Woman, 60 years of age. Group # 5].*

*We should drink less black tea. I read in a book [called] "Zdorovie" ("Salomatlik" (Health) that tea inhibits 90% of iron absorption. [Man, 30 years of age. Group # 7].*

*My elder sister is a nurse. She told us that black tea is very harmful for health. It impedes intake of vitamins by the body. After that we began drinking green tea. But we also drink black tea. Black tea makes a person weak. [Woman, 18 years of age. Group # 1].*

*I just learned about the harmfulness of tea and now we'll drink less tea. [Woman, 30 years of age. Group # 2].*

Participants did not have any particular systematic knowledge about the benefit or harm of certain kinds of staple foods. Therefore in choosing dishes and foods spontaneous decisions, often made under the influence of certain occasional factors, prevail.

*Recently I was at a hospital in Ferghana in the oncology ward. I was told that I should eat more carrots. Vitamins contained in carrots prevent development of cancer. There was a doctor; he was Korean and he advised me to drink one glass of carrot juice a day. If cancer already started to develop, then juice should be had for 60 days, one glass daily, then after a 30-day interval the carrot juice should be had for 90 days and then there should be another 30-day interval. It is very useful. Now I eat carrots all the time. [Woman, 49 years of age. Group # 4].*

*I used to enjoy eating spicy foods. I was told that spicy foods promote development of malokrovie; that's why I stopped eating spicy foods. [Woman, 42 years of age. Group # 3].*

Some participants referred to the positive experiences of their acquaintances, whose appearance and state of health, in the participants' perception, proved their correctness. These experiences may encourage rural people to make changes in their diets.

*Last year a woman came from Russia, and she was walking around choosing grapes. I saw that she was looking at the tips of the berries. I asked her why she was doing that. She explained to me that poisonous chemicals usually accumulate at the tips of the berries. It is clearly seen on white grapes; the tips of grapes look like blurry flowers. [Woman, 49 years of age. Group # 4].*

*We are used to eating hot food. If tea is hot, then meals should be hot too. And it turns out that it's harmful. Our neighbor, a Russian woman, never eats fresh bread. She is 70 and she can still spade her vegetable garden. [Woman, 42 years of age. Group # 4].*

## **B. Iron Fortified Staple Foods**

We compiled the following list of foods containing iron based on how often these foods were mentioned:

- apples
- cow's liver and tongue
- quince
- carrots
- potatoes

- greens

The opinion that apples are the main fruit containing iron dominated among the participants. Apples are affordable and accessible compared to cow's liver and tongue that are considered to be delicacies.

### C. Foods Rich in Vitamin C

The participants' ideas related to staple foods containing vitamin C usually contradicted information in medical reference books. The following is a list of such foods. The ranking is based on how often these foods were mentioned:

- carrots
- apples
- meat and eggs
- greens
- potatoes and onions
- sweet peppers

Beans, tomatoes, radishes, turnips, beets, plums, and peas were mentioned far less. Dog rose berries, watermelons, and melons were mentioned once. Abilities "to whet appetite" (Man, 27 years of age, Group # 7), "to normalize blood" (Man, 25 years of age, Group # 7), as well as "to help absorb iron" (Woman, 40 years of age, Group # 4) are seen as benefits of vitamin C.

### D. Breastfeeding as a Way to Prevent Blood Diseases

Most participants were not aware that breastfeeding prevents childhood blood diseases. However, practically all of them were convinced that breast milk provides better nutrition compared to infant formulas. This information was obtained either from personal experience or the experience of relatives, acquaintances, and friends. Sometimes such information was learned from the mass media (e.g., television, newspapers, and magazines).

*Breast milk contains all the vitamins that are necessary for a human. There was a show about this on television. [Woman, 21 years of age. Group # 1].*

*My brother was given cow's milk [in childhood]. When he grew up he was very weak. And my brother's son who was only breastfed is now very healthy and strong. Now he is 15. [Woman, 21 years of age. Group # 1].*

*My sister fed her daughter with infant formula. Now she is 5 years of age. She is very weak. And my daughter has very strong constitution because I only fed her with breast milk. [Woman, 37 years of age. Group # 2].*

*Yes, I heard about this. On television they say that breastfeeding is better than feeding with porridges (infant formula). A child grows to be healthy. The most important thing is that the child doesn't fall ill with infectious diseases. [Woman, 42 years of age. Group # 3].*

*Breast milk is like a shield for a child. The breastfed child is healthier than the child who was fed infant formula. [Woman, 39 years of age. Group # 3].*

*Breast milk is very useful for children. Such children don't fall ill that often! [Woman, 43 years of age. Group # 4].*

*The best nutrition for a child is breast milk. I know this. But sometimes children are also fed cow's milk, I saw neighbors do this. [Man, a bank inspector. Group # 6].*

*I had two children in a row. I breastfed the first child less - that's why he is sickly and short; the second child is much different. [Woman, 27 years of age. Group # 2].*

*Breastfeeding makes children strong. [Woman, 43 years of age. Group # 3].*

As far as the age until which children should be breastfed exclusively is concerned, the participants' opinions related to this issue differed insignificantly. Most of them assumed that children ought to be breastfed until they are 2-3 years old. In addition, they thought that boys should be breastfed six months to one year longer than girls.

*Yes, boys [should be breastfed] until they are 2.5 years old and girls until they are 2 years old. Boys have more rights for that. They have to become strong. That is why they should be breastfed longer. It is considered that girls should be breastfed until they are 2 years old; otherwise they get spoiled. [Woman, 49 years of age. Group # 4].*

*Boys should be breastfed until they're 3 years old, and girls until they're 2 years old. We breast feed girls until they are one year old. In order to change this situation, we need to have a 2-3 year interval between childbirths. [Man, 25 years of age. Group # 7].*

*Our ancestors told us about this. Boys should be breastfed for 25 months and girls for 19 months. [Woman, 39 years of age. Group # 5].*

In trying to prove the immense power of breast milk some participants told us about cases that are unlikely to have happened and about which they have usually learned from others (usually from a third party).

*One of my acquaintances told me that her neighbor has been feeding her son until the third grade. She is breastfeeding him every day after school. But he conducts like himself like a three-year old. He has a three-year-old child's character. She breastfeeds him after every meal. He is her youngest child and that's why she's been breastfeeding him for so long. [Woman, 42 years of age. Group # 3].*

*A woman breastfed her child until 7 years of age. [Woman, 26 years of age. Group # 2].*

## **E. Breastfeeding Children Younger than Six Months of Age**

As a rule, the participants could not rationally explain why a child younger than six months old needs supplementary foods. Most often they referred to their own experience.

*I begin to give my children supplementary foods when they turn 40 days old. I give them broths. [Woman, 30 years of age. Group # 2].*

*Children drink boiled water to quench their thirst. [Woman, 30 years of age. Group # 2].*

*My nephew started eating mashed potatoes when he was three months old. [Woman, 43 years of age. Group # 3].*

*I've been giving my son carrot juice since he was born. [Woman, 42 years of age. Group # 3].*

*I also gave juices to my children. I heard about this from doctors. [Woman, 35 years of age. Group # 3].*

*My mother-in-law gave mashed vegetables [to her children] beginning at three months of age. [Woman, 40 years of age. Group # 3].*

*I begin giving supplementary foods when a child is 40 days old; I give cookies, etc. [Woman, a pensioner. Group # 5].*

*An infant should be breastfed until he is three months old and after the fourth month some other foods may be added to the child's diet. [Man, an inspector on natural gas supply. Group # 6].*

*I think that upon 40 days after birth cream should be added to a child's diet. [Woman, 18 years of age. Group # 1].*

The only rationale that the participants were able to provide stated that supplementary nutrition is necessary only in case the mother does not produce breast milk, or her milk is not sufficient to satiate her child.

*When a woman doesn't have milk, supplementary foods are given. Boiled water should also be given. [Woman, 27 years of age. Group # 1].*

*A child should be fed porridges if the mother doesn't have milk. [Woman, 44 years of age. Group # 3].*

*I had a good diet, but my children still did not have enough of my milk. That's why I had to give supplementary foods to my child. Now it's difficult – expensive. Weak children should receive it, at least those on the list. [Woman, 39 years of age. Group # 3].*

*My younger brother was taught to eat food since the beginning. He even slept with bread because he didn't have enough food and was sleepy all the time. That's why I think that the child should be given supplementary foods when he is over three months old. Only now, in the kindergarten, he conducts himself better. [Woman, 42 years of age. Group # 3].*

*It also depends on breast milk. If it's thick and the baby is full, then supplementary nutrition should be introduced later. But if breast milk is thin and the child can't have enough of it and is moody, then you need a doctor's advice. A doctor can advise you to add "Malyutka" or "Malysh" (infant formulas) to a child's diet. [Woman, 40 years of age. Group # 4].*

## IV. PREVENTION AND TREATMENT OF ANEMIA

### A. Iron Supplements

#### a. Indications and Contraindications

Most participants had heard about tablets (supplements) that contain iron; they called them “Ferroplex”. Ideas related to the mechanism of action of these tablets as well as related to other issues were contradictory. For example, some argued that supplements should be given to pregnant women, whereas others thought that pregnant women must not take these supplements. Some participants assumed that these tablets were useful for everybody and others considered that children should take this medicine.

*It's important to refer to a doctor; he will give you advice. Mainly pregnant women should take these tablets, because a child's health depends on the mother's health. [Woman, 39 years of age. Group # 3].*

*Medicine should be given to children. [Man, 30 years of age. Group # 7].*

*Tablets are useful for everybody. [Man, 23 years of age. Group # 7].*

Some respondents assumed that it was best to try to manage without tablets and only take them when the disease aggravates.

*In the initial stages the illness can be treated through consumption of fruits and vegetables. But once the disease worsens, medications need to be taken. [Woman, 21 years of age. Group # 1].*

Utilization of these supplements caused serious fear in many respondents. In particular, they feared side effects.

*The tablets have side effects. For example, the stomach begins to hurt. That's why it's better to eat fruits and vegetables. Our biology teacher told us about this. [Woman, 18 years of age. Group # 1].*

*These tablets have side effects on the heart. [Woman, 37 years of age. Group # 2].*

*The tablets contain many chemical substances. [Woman, 21 years of age. Group # 1].*

*These tablets can have side effects on the heart and liver. This [is similar] to abusing sedative analgesics. [Man, 24 years of age. Group # 7].*

*Doctors prescribe medications without thinking about side effects. Many people have stomachaches because of these tablets. [Woman, 17 years of age. Group # 1].*

Certain categories of sick people who should not take these supplements were pointed out. Moreover, it was mentioned that the tablets may cause anemia and unpleasant sensations.

*These tablets shouldn't be given to pregnant women. [Man, 31 years of age. Group # 7].*

*Children mustn't take too many medications. It's harmful. [Woman, 18 years of age. Group # 1].*

*Pregnant women shouldn't take medications during the first three months of pregnancy. [Woman, 15 years of age. Group # 1].*

*They say about Ferroplex that if the body doesn't like it a rash can break out. [Woman, 35 years of age. Group # 3].*

*I couldn't take Ferroplex because they smell like blood and I vomited. [Woman, 42 years of age. Group # 3].*

Thus, none of the respondents could convincingly answer the question as to why these tablets can cause side effects; therefore, we can conclude that the participants' awareness of the mechanism of action of iron supplements was very low.

#### b. Problems Related to Taking the Tablets

The main problem connected with taking tablets is not poor knowledge about their mechanism of action and possible side effects. The main problem is the cost of iron supplements.

*Tablets which treat anemia cost 2,000 soums per pack. They're taken for three months. [Woman, 19 years of age. Group # 2].*

*I want medications to be a little cheaper because glucose alone costs 850 soums. [Woman, 39 years of age. Group # 5].*

*There're not enough finances for treatment. The medication costs 2,000 soums and in fifty days you need to buy it again. It's outrageously expensive! [Man, 31 years of age. Group # 7].*

*Their costs are high. One pack costs 2,500 soums. They're not sold apiece. The main problem is cost. [Man, a bank inspector. Group # 6].*

*A worker gets paid 3,500-4,000 soums per months and these tablets cost 2,000 soums! That's half of the salary! Very expensive. [Man, 25 years of age. Group # 7].*

*We need the government's support. We need free medications. Salary isn't enough. [Woman, 47 years of age. Group # 5].*

## **B. Need for Additional Knowledge About Prevention and Treatment of Anemia**

Naturally, at the level of awareness demonstrated by the participants, the need for additional knowledge about anemia is rather high. The participants would like to:

- know more about prevention and avoidance of anemia;
- have opportunities to access consultations with qualified health workers; and
- have easier access to information about anemia.

## V. CHANNELS OF INFORMATION

### A. Channels of Information on Nutrition

Decisions related to cooking and eating, in general, are made differently in each family. However, there are general rules according to which people plan their diets. Two circumstances play an essential role: (1) availability of certain foods at home, and (2) traditions of eating. Under the restricted conditions which most participants described during the discussions, the list of available staple foods is rather short. As far as eating traditions are concerned, the list of foods that are consumed in different families is also rather brief: for lunch and dinner they have dishes of traditional Uzbek cuisine such as pilaf, shurpa (soup), and mastava (rice soup). For breakfast they eat porridges made out of rice and other cereals. More frequently they have only tea and a flat cake for breakfast.

Naturally, under such conditions questions related to what food to cook do not arise: they cook food that is available at home. It is not by chance that few participants mentioned arguments and disagreements about meal plans. Usually men or elder women in the family (e.g., a mother-in-law, a grandmother) make this decision. Usually a disease or inclinations of a certain family member are taken into consideration; however, this, as a rule, happens rarely. Normally, the family cooks “whatever all people eat.”

Sources of information about proper and useful nutrition are diverse. The following is a list of these sources. They were prioritized according to the frequency of references to them:

- relatives, friends, acquaintances, and neighbors;
- doctors and health care workers;
- mass media (television, newspapers, and magazines); and
- books.

It is typical that people made decisions concerning nutrition based on advice that they heard somewhere by chance. Doctors or people who can prove their words through their own examples (e.g., neighbors or acquaintances who lead healthy lifestyles and have adequate diets) are considered to be reliable sources.

*Recently I was at a hospital in Ferghana in the oncology ward. I was told that I should eat more carrots. Vitamins contained in carrots prevent development of cancer. There was a doctor and he was Korean He advised me to drink one glass of carrot juice a day. If cancer already started to develop, then juice should be had for 60 days, one glass daily, then after a 30-day interval the carrot juice should be had for 90 days, and then there should be another 30-day interval. It is very useful. Now I eat carrots all the time. [Woman, 49 years of age. Group # 4].*

*When my son and I were at a hospital in Tashkent, there was a doctor, a woman. She told me that I should give my son rich soups, more juices, and dairy products. Because he didn't get enough of these his body lacked iron. They didn't do a blood transfusion because it was useless in his case. [Woman, 49 years of age. Group # 4].*

*I have a Russian neighbor. She always gives me advice not only about food, but also about diseases. She, for example, never takes medications; she finds her own ways of curing herself. I always listen to her advice. [Woman, 42 years of age. Group # 4].*

*In the past I liked to eat rich and fried food. I looked bad; I got sick and my skin became yellow. My neighbor said: “You work at the central library and get paid on time. That's why you eat a lot. You need to eat thin soups and more vegetables.” And really, recently I had stomach surgery and now I only eat vegetable soups. Thank God, now I am healthy and my complexion is normal. [Woman, 40 years of age. Group # 4].*

The input of mass media to education of the population was less than expected. None of the participants referred to a source (e.g., a show that they constantly watch) that systematically covers issues connected with proper nutrition and healthy lifestyles.

## **B. Celebrities with an Image of a Healthy Person**

The following is a list of celebrities and famous persons that most participants mentioned:

- A singer Yulduz Usmanova (“she looks sturdy and strong;” “during her performances you can’t see that she gets tired;” “she is very energetic”)
- The President of Uzbekistan, Islam Karimov (“he looks brisk;” “it’s pleasant to look at him”)
- Uzbekistan’s boxers and boxers from other countries – Mukhamad Kadirov, Arthur Grigoryan, Mike Tyson (only because they participate in sports and regularly have health checkups)
- Uzbek singers and actors – Ravshan Komilov, Ozoda Mirsaidova, Anvar Sanaev, Tuti Yusupova, Yodgor Sadiev, Khairulla Lutfullaev (“I just like them;” “well-groomed, look healthy”)
- American singer Michael Jackson
- All astronauts (“because doctors always look after them”)
- All city dwellers (as compared to rural residents)

It is interesting that Yulduz Usmanova was mentioned more often than others. It is difficult to say whether this was because she appears often on television or due to different reasons. The fact that the respondents pointed to so many singers and actors reveals that for the participants the image of a healthy person was linked with good looks, “satiety,” and similar characteristics rather than some indirect health indicators (for example, physical exercise, good constitution, etc.). Probably Michael Jackson is an exception in this regard. On the other hand, most respondents were convinced that sportsmen and astronauts are in good shape mainly because they are under vigilant surveillance of doctors.

## **C. The Most Popular Television Channels**

The participants in the discussions had access to very few television channels; therefore a list of popular television channels consists of those that are accessible:

- “Yoshlar” channel
- UzTV-1 channel
- UzTV-4 channel

As far as the most popular television shows are concerned, the participants indicated the following ones:

- “Davr” news program
- “Begoim”
- “Azizim”
- “Akhborot” news program
- some Russian television shows (ORT)

The participants also mentioned shows such as “Maslakhath” (Advice), “Ochil Dasturkhon,” “Tasvir,” “Khandalak” (Cantaloupe), “Tabiat Olamida”(Nature Show), “Assalom Uzbekistan” (Hello Uzbekistan), “Otarlar Suzi” (Fathers’ Words), “Askar Maktabi” (Soldier’s School).

## **D. The Most Popular Radio Stations**

Radio, according to the participants' opinions, is used less frequently as a source of information than television. The main reason for this is because all wired radio outlets that in the past were available for almost every family are now out of order. Nowadays, very few rural people have good radio sets that receive radio shows of different stations including those that broadcast on short wave.

Despite this fact the leader among radio stations was the Ferghana radio station "Eho Doliny" ("Vodiy Sadosi" Echo of the Valley). The second most popular radio station was Tashkent's "Golos Molodyoji" ("Yoshlar Ovozi" Young People's Voices). Some participants also mentioned other radio channels: "Mash'al" (Lighthouse), "Ozodlik" (Freedom). The most popular shows were the ones that broadcast music and news. Most people, according to one participant's opinion, listen to the radio after 6 p.m., although there are some people whose wired radio outlets work all day long.

## **E. Newspapers and Magazines**

Participants read newspapers and magazines considerably less than they watched television or listened to the radio. There were some popular periodicals. Here are the periodicals cited by participants:

- Ferghana newspaper "Darakchi"
- Ferghana newspaper "Adolat Yuli"
- Ferghana newspaper "Tasvir"
- Ferghana newspaper "Fargona Hakikati"

The participants also pointed to periodicals such as newspapers "Shifokor" (Doctor), "Ishonch" (Trust), "Bogdod Haeti" (Life of Bogdod), "Tashlaksaiia Zarya" (Tashklak's Dawn), "Ma'rifat" (Enlightenment), as well as magazines "Gulkhan" (Fire) and "Guncha" (Bud). Readers of these newspapers were mainly interested in entertaining information, crosswords, "various stories," advertisements, and letters.

## VI. CONCLUSIONS

This report includes results of focus group discussions devoted to matters of awareness of and attitudes towards anemia and diet of rural people living in the surveyed regions of Ferghana Oblast. The discussions showed that despite the prevalence of anemia among rural people (some participants assessed that 90% of the population suffers from anemia), most participants had a rather vague ideas about how anemia develops as well as its causes.

Most participants linked the main causes for development of anemia with existing financial difficulties and poverty that, in their opinion, has spread widely in recent years. According to the viewpoint of the participants, external reasons (e.g., financial difficulties, other illnesses, and wrong treatment) most often lead to anemia. On the other hand, most participants admitted that internal factors (e.g., inequality in the family, the status of daughters-in-law, nutritionally deficient diets, and unhealthy lifestyles) are among essential causes that result in anemia.

Anemia, despite being habitual and widespread, is considered to be a very dangerous disease and some participants even called it a “fatal disease.” Most participants were well informed about both external symptoms of anemia (weakness, paleness, fatigue, decreased ability to work) and internal manifestations of this illness (low level of hemoglobin in blood). Some participants also indicated various specific symptoms and also noted “strange food cravings” that are sometimes characteristic of anemic people.

The participants’ attitudes towards the treatment of anemia with the help of a doctor were divided. Some participants thought that anemia must be treated with the help of doctors, and that patients should strictly follow doctors’ advice. Others thought that with wholesome diets and proper lifestyles they could easily manage without doctors. Finally, a third group assumed that it depends on the severity of the disease: in the initial stages they can do without a doctor, but as the disease progresses a doctor’s help becomes necessary. Thus, the participants’ opinions reflected a wide range of attitudes towards anemia varying from recognizing the necessity of health care during all stages of the disease to complete rejection of medical intervention.

The participants’ beliefs related to prevention and treatment of anemia through consumption of staple foods were also mixed. Similar were the opinions that when some signs of anemia appear certain kinds of staple foods should be added to the diet. However, the participants were not aware of the benefits or disadvantages of certain kinds of staple foods. Therefore, the respondents gave various answers to the question pertaining to the kinds and amounts of staple foods that should be eaten.

The participants also had incomplete and vague ideas connected with foods rich in iron and vitamin C. They also had inadequate knowledge as to why children under six months of age should be given supplementary foods in addition to breast milk. Usually the decision whether or not the child should be fed supplementary foods is based on both personal experience and the experience of one’s relatives. Personal experience is also grounds for the belief that breast milk is the best nutrition for children (“children grow to be healthy and strong,” etc.).

Many participants had heard about iron supplements, but they rather rarely use them. The main reason for rare utilization of these supplements is their cost and fears related to side effects of these supplements.

Most participants understood that they have limited knowledge about anemia, its prevention, and treatment. They felt a need for access to such knowledge as well as consultations provided by qualified health workers. In addition, the available channels of information do not meet the needs of the participants.

## *Moderator's Guide for Conducting Focus Group Discussions on Anemia*

### **1. Introduction (5 minutes)**

- A. *Introduction.* Hello. My name is \_\_\_\_\_ and I work at the Center for Social Research “Expert” located in Tashkent. I think that most of you haven’t participated before in the discussion that we are going to conduct. I would like to thank you for sparing some of your time for this discussion. Today we are going to talk about some issues that are related to anemia and other illnesses.
- B. *Goal of the discussion.* Our main goal is to learn what YOU PERSONALLY think and know about the questions that we will discuss. I will not be an expert and try to teach you something; vice-versa, YOU WILL speak about everything you know and think. Besides your group there will be several other groups in different regions of Ferghana Oblast. Results of these discussions will be used to help avoid anemia and improve people’s health.
- C. *Methods of conducting discussions.* There are several main rules for our discussion.
- Our discussion will last for two hours and will be taped. My assistant will do some recording. This is done so that we will not miss any of your thoughts and ideas. I want to assure you that no one except for the research group will hear what you will be talking about today. Your last names and first names will not be mentioned in the reports.
  - There cannot be right or wrong answers during our discussion. We want to hear everything that you think based on your beliefs and experience. You do not have to agree with each other, and you can express positive and negative remarks. If you do not agree with a speaker, please express your opinions. Feel completely free.
  - It is important that we hear everyone, so please speak loudly if you have something to say. We are taping the discussion, so please try to take turns when you speak, because only in this way will we be able to hear each speaker. Try to make your answers concise. The objective of this discussion is to collect various opinions.
  - I will not express my opinion. My role is to direct the conversation so that everybody has an opportunity to express oneself and be heard. If I interrupt you and go on to another topic, please do not be offended. We have many topics for the discussion and sometimes I will need to change topics quickly. We can talk more after the discussion, if you feel that we have missed something.
  - MAKE SURE THAT EVERYBODY KNOWS WHERE BATHROOM IS LOCATED. If you need to leave the room during the discussion, do not hesitate to tell me about it.
  - Do you have any questions?
- D. *Introduction of the participants.* I would like to go around and let everybody introduce themselves, tell us what they do, a little bit about their families, and so on. Please, let us start with ...

### **2. General Awareness about Anemia (15 minutes)**

- A. First, we will talk generally about anemia. What do you know about anemia?
- What is anemia? What characterizes this disease?
  - How do you know that some of your family members have anemia? Do you know any signs of anemia? What are the signs? [ELUCIDATE ANSWERS RELATED TO PALENESS, FATIGUE, HEADACHES, DIZZINESS, HAIR LOSS AND HAIR BRITTLINESS, “STRANGE FOOD CRAVINGS” – DESIRE TO EAT CHALK, PLASTER, SPICY AND SALTY FOODS].
  - Does anyone in your family suffer from anemia? Who exactly does? How does it proceed? If none of your family members suffer from anemia, then did you meet any people (neighbors, friends, etc.) who had anemia? How often do you meet anemic people?

- B. Now I would like to ask you what you know about malokrovie. What is malokrovie? Is this “thin blood” or is this “lack of blood?” Are anemia and malokrovie the same illness or different illnesses?
- What characterizes malokrovie?
  - How do you know that a person has malokrovie? Are there any signs of malokrovie? What are these signs?
  - Does anyone in your family have malokrovie? Who does? How does this illness proceed? Do you often meet people who suffer from malokrovie?
- C. Are there any other blood diseases that bother you or your family members? What are these diseases?

### **3. Causes and Complications of Anemia (20 minutes)**

- A. Let us talk about causes and complications of anemia and malokrovie. What do you consider to be the main causes of anemia? Where did you hear about these causes?
- Are these causes external, for example, poor nutrition, or internal, for instance some illness? Why do you think so? Where did you hear about this? [ELUCIDATE ANSWERS RELATED TO INTERNAL BLEEDING, IRON DEFICIENCY IN THE BODY, AND BREASTFEEDING.]
  - What can you say about malokrovie? Are causes for anemia and malokrovie different? If so, then how do they differ?
- B. Do you consider anemia life threatening or not? Why do you think so? Will the disease go away by itself or does it have to be treated by a doctor? Why yes and why no?
- Do anemia and malokrovie have any complications? What are the main complications of anemia? Where did you hear about these complications?
- C. Did any of your family members refer to a doctor for anemia treatment? If so, was this referral of any use? If nobody referred to a doctor, then why? [BECAUSE NOBODY FELL ILL? OR BECAUSE THIS DISEASE IS NOT CONSIDERED TO BE SERIOUS?]

### **4. Anemia and Nutrition (25 minutes)**

- A. Our next topic is anemia and nutrition. Are there any staple foods that may prevent development of anemia, malokrovie, and other blood diseases? What staple foods? Where and from whom did you hear about this?
- If there are such foods then what amounts should be consumed to prevent anemia? [SEPARATELY FOR ADULTS AND CHILDREN OF DIFFERENT AGES.]
- B. Are there foods that can treat anemia and other blood diseases? What are these foods? Where and from whom did you hear about this?
- If such foods exist, then what amounts should be consumed to treat anemia? [SEPARATELY FOR ADULTS AND CHILDREN OF DIFFERENT AGES.]
- C. Which of these staple foods do you consume? How much of them do you consume a day or a week? Do you consume them regularly or only sometimes? If you do not use them often, what is the reason for this? [FIND OUT WHETHER THIS IS BECAUSE OF LACK OF MONEY, INAVAILABILITY OF SUCH FOODS , ETC.]
- D. Do you know any iron rich foods? What kinds of such foods do you know? Who told you about them? Do you know any foods rich in vitamin C?
- What kind of foods rich in vitamin C do you know? How did you find out that they are rich in vitamin C?

- Do any of you drink tea with your meal? What foods do you drink tea with and how often? Did you hear that tea that you drink with your food inhibits absorption of iron contained in this food? What do you think about not drinking tea with meals? Could you not drink tea with meals? If not, then why?
- E. Did you hear that breastfeeding is one of the methods to prevent blood disorders in childhood? If so, where did you hear about this?
- Until what age should children be breastfed? Why do you think so?
  - Are there benefits of breastfeeding in comparison with other ways feeding children, for example, bottle-feeding, etc.? If so, then what are the benefits? Where did you hear about them? If there are no benefits, then why?
  - Up to what age should children receive nothing but breast milk? Why do you think so? Where did you learn about this?
- F. Under what conditions, in your opinion, should children under six months of age be given supplementary liquids? What liquids should be given to children and which ones shouldn't be and why? Under what circumstances in your opinion should children under six months of age be given other foods in addition to breast milk? What foods should be given to children and which foods shouldn't be given?

### **5. Prevention and Treatment of Anemia (20 minutes)**

- A. Now I would like to talk in detail about the prevention and treatment of anemia. Did you ever hear about supplements (tablets) containing iron that are available at drugstores? If so what supplements (tablets) did you hear about?
- Under what circumstances should you take these supplements (tablets)?
  - Under what circumstances you should not take these supplements (tablets)? Why?
- B. For whom, do you think, it would be good to take these supplements (tablets)? [ELUCIDATE ANSWERS RELATED TO IMPAIRED PEOPLE, PREGNANT WOMEN, AND YOUNG PEOPLE.]
- If you think that somebody has a special need for iron supplements, then why?
  - If, on the contrary, you think that they will be of no use, then explain why.
- C. Are there, in your opinion, any problems related to the use of these supplements (tablets)? What are these problems? [ELUCIDATE ANSWERS RELATED TO SIDE EFFECTS, AVAILABILITY OF TABLETS, PRICES]
- D. Is there something else that you would like to know about prevention and treatment of anemia? What exactly?
- What would you like to learn about blood diseases or about keeping the blood healthy? What exactly?

### **6. Informational Channels (20 minutes)**

- A. Let us talk a little about from where you receive information on proper nutrition and other issues. Who in your family makes decisions related to what you should eat? Why is the opinion of these people decisive? Do arguments pertaining to proper diet take place in your families?
- If so, what are these arguments about?
  - Do you accept opinions of people who are not your family about proper nutrition? Whose opinion is important for you? Why?

- B. Can you remember a famous person, for example, a famous television commentator, a singer, a sportsman, a politician, or an actor who you think is a healthy person? Why exactly this person? How can you see s/he is healthy?
- C. What television channels do you watch more often? What shows on these channels do you like most? What part of the day do you watch television shows and how much time do you spend on watching them?
- D. What radio stations do you listen to? What radio shows do you like most? During what part of the day do you listen to the radio and how much time do you spend on this?
- E. Do you regularly read newspapers and magazines? If so, what newspapers and magazines do you read? When you read them, what sections do you like in newspapers and magazines?

### **7. Conclusion**

- A. That is all I wanted to talk about. Do you have any questions? Thank you for your participation in this discussion.

# NUTRITION

## ***Main Conclusions***

Discussions held in selected rural areas allow us to make a number of important conclusions and recommendations for future technical assistance performed by USAID/ZdravPlus in Ferghana Oblast to improve the effectiveness of health care services to the rural population. These findings and recommendations are based on the analysis of knowledge perceptions of the rural population concerning nutrition, as well as on their habits and behavior in this area of human activity.

The most important thing to note is the rural residents' rather limited knowledge of nutrition issues. This is accounted for, in the first place, by their meager subsistence and the lack of many food products. However, they apparently showed little interest in getting more information about an adequate and healthy diet. In our opinion, it can be explained by people's conservative choice of cuisine and food products, traditional values, and perceptions. Eating and cooking were not regarded as a field for innovations or experiments.

Attitudes toward diet and diet cooking should be understood in the context of resistance to rational changes in nutrition. Diet was considered only as a remedy against certain illnesses. The prevailing view was that a healthy individual should never be «picky» about food, or try to limit the consumption of heavy and fat food, or try to balance his daily ration. Only during illness, when the ailing organism needs “to be fixed,” should a person consume certain kinds of food products, and that is what people understood as “diet.”

This attitude toward one's own nutrition results in premature aging of the organism, illnesses, shorter life expectancy and poorer quality of life. As long as «healthy food» for rural residents means «substantial» and calorie-rich food, it will be difficult to change their behavior and attitudes towards the daily diet. The idea of balanced nutrition is not very popular, first of all, because of poverty. Two viewpoints prevail: (a) health depends on the consumption of vitamins; (b) health depends on the consumption of foods of animal origin. Both of them, in our view, stem from a scanty choice of food products. The first is linked with what is commonly accessible; the other with what is inaccessible.

Knowledge about the various vitamins and iron in food is quite fragmentary and vague. However, people had heard more of one vitamin (vitamin C) than of the others (vitamin A), but in principle this does not change the whole picture. The same situation is with people's knowledge about the content of different elements (protein, starch, etc.) in foods. People regard oils and fats only from the viewpoint of their energy value, and the majority showed little interest in or knowledge about their other effects on health.

Food ration preferences lie within a narrow circle of traditional cuisine with an absolute dominance of plov, the most popular and favorite Uzbek dish. Despite the fact that most food products are produced by households themselves, their ration is not balanced, because a significant part of their produce is to be sold at the market rather than consumed by them. Seasonal differences in nutrition patterns are quite great: summer and fall are the time of intensive vitamin consumption, whereas winter is the time for calorie-rich foods (meat and fats), and spring is a period when the organism is weakened by vitamin deficiency.

## ***Recommendations***

Therefore, one can hardly expect to be able to change significantly the nutrition strategy to make it more balanced while the above perceptions and stereotypes prevail. What can actually be done without being able to quickly and greatly improve the standard of living? We believe that USAID/ZdravPlus should develop its strategy on the basis of steadily creating awareness of the following key ideas among rural population:

- A properly organized diet is a key factor for human health **regardless of the population's level of well-being** in one or another region
- Nutrition must depend **not only on traditions**, but also on a clear understanding of what is useful or harmful for the human organism
- The choice of food must be based on **the knowledge of what type and quantity of nutrients** a particular product contains
- A rational approach to nutrition means an estimate of a the **long-term effect** that nutrients would produce on the organism

These ideas should be presented in a few short and eye-catching slogans, the design and introduction of which may be the subject of a separate social study. At the same time it is necessary to use an image of a «healthy person» as a means of creating motivation among the rural population to rationalize their diet. Our study has identified a number of individuals whom the participants believe to be healthy; these people could be used to plant the idea of a rational diet into their minds. Excessive edification, just like unrealistic claims and appeals should be avoided in the process.

The most popular and accessible mass media, as well as brochures, posters and other printed materials can be used and given out to people free of charge by the SVPs [rural medical stations]. The following are the most popular media:

- TV channel «Yoshlar» («Begoyim» and «Azizim» programs)
- Radio channels «Vodiy Sadosi» and «Yoshlar Ovozi»
- Newspapers «Darakchi» and «Adolat Yuli»

## ***Background***

In accordance with a “Memorandum of Understanding” signed on October 27, 1997 by the governments of the United States of America and Uzbekistan, USAID/ZdravPlus renders technical assistance aimed at improving the effectiveness of health care services provided to rural populations of Uzbekistan. In particular, a new model of health care is being introduced in rural areas of Ferghana Oblast.

A series of focus group discussions were held in Ferghana Oblast and aimed at further development of the new model and a thorough understanding of USAID/ZdravPlus' objectives. In the course of the discussions, knowledge of and attitudes towards anemia of ordinary rural people as well as knowledge about and treatment of anemia by health workers (e.g., doctors and midlevel health personnel) from rural health care facilities were studied.

## Methodology

In accordance with the specifications attached to the contract concluded between USAID/ZdravPlus and Expert-Fikri firm, the method of focus group discussions was selected for implementing the survey. Selection of participants of discussions was completed in four rural regions of Ferghana Oblast. A list of groups and criteria for selection of participants is shown in Table 1.

**Table 1. List of participants of focus-group discussions**

№	Title of the Group	Topic	Participants	
			Sex	Age
8	Adult women	Nutrition	F	20-50
9	Adult women	Nutrition	F	20-50
10	Adult men	Nutrition	M	20-50
11	Adult men	Nutrition	M	20-50

Location of focus-group discussions is indicated in Table 2.

**Table 2. Location of focus-group discussions**

Village, Village Council	Region	Name of Rural Health Care Post	Population	Group Number
Kuchkak village	Bagdad	Kuchkak (III)	8220	8
Same	Same	Same		11
Shakhimardan village council	Ferghana	Shakhimardan (II)	3400	9
Birlik village council, Yakkatut village	Toshlok	Birlik (III)	12357	10

Fieldwork was implemented over the period from April 1-11, 2001. Group discussions were conducted by two teams from the Expert-Fikri Center – a team of men (a moderator – Khasan Nazarov, an assistant – Ilkhom Khalilov) and a team of women (moderators – Dilbar Gulamova and Mavluda Eshkhuratova, an assistant – Mukaddas Azizova).

There were no difficulties during the selection process. Inhabitants of residential areas where discussions were conducted readily agreed to participate in them. Discussions took place in isolated premises (as a rule, in the buildings of village councils) and were recorded on a Dictaphone. Detailed shorthand reports were prepared on the basis of these recordings.

The following report was prepared by the project manager Igor Pogrebov on the basis of shorthand reports as well as on the moderators' comments.

# I. General Ideas About Nutrition

## A. Associations linked with the concept of "Nutrition"

The multitude of associations linked with the "nutrition" concept was primarily gender-related. For instance, women from group 8 said that for them "nutrition" meant taking food together with their children.

*When they say «nutrition», it means that you bring food and eat it together with children. That is, the cooked food in a family circle. [Woman, 42. Group 8].*

*...whenever you eat without children the feeling is as if you haven't eaten anything. [Woman, 30. Group 8].*

Participants from male groups (10 and 11) associated the word "nutrition" with dire necessity of life that makes every man take care of his family and provide food for it.

*When I hear the word «nutrition» it comes to mind that to find food I must labor. No one can have food without working. If a person works well, he eats well too. [Man, 49. Group 10].*

*To me the word means the necessity of life. One cannot live without nutrition. Nutrition is a source of energy for a human. Plov, for example. Fatty dishes. [Man, 49. Group 10].*

*To live one must eat. [Man, 27. Group 11].*

*If you put nothing in a sack, it will not stand, just like a human who cannot live without food. [Man, 41. Group 10].*

Another important array of associations was linked with the usefulness of food for health, because it allows a person to stay healthy himself and to bring up healthy children. This aspect was mentioned chiefly by women.

*The primary need of human is food. If he doesn't have food, he will become weak and anemic. Food must be taken on schedule. Food first of all means health. [Woman, 42. Group 9].*

*It makes me think of anemia. [Woman, 23. Group 8].*

*A mother must have good nutrition to give birth to healthy children. For example, we have a young daughter-in-law, Muazzam, living with us; she has to take vitamin-rich food to have healthy babies. [Woman, 42. Group 9].*

*One should take calorie-rich food not to have anemia and other illnesses. [Woman, 28. Group 9].*

*Nutrition should be understood not only as simply taking food, but also as an impact on nerves. I work as a lab assistant and sometimes I am a blood donor. And when they tell us we have anemia, we start thinking, "We eat well, why the analysis showed I have anemia?" [Woman, 26. Group 9].*

Many associations, regardless of participants' gender, were linked with particular kinds of food and dishes.

*For Uzbeks the main food is plov. [Woman, 44. Group 9].*

*For Uzbeks the most important dish is plov. Plov is the most substantial and healthy food, the food of Uzbeks. [Man, 38. Group 11].*

*What first comes to mind are food products: oil, meat, etc. [Woman, 36. Group 8].*

*Food is what we eat everyday. A person says, «I want this or that», «Today I'll make soup.» All this is food. [Man, 38. Group 11].*

*...On Thursday and Sunday one must cook plov, buy some mutton - both fat and meat - if possible, 1 kg of each. [Man, 28. Group 11].*

Finally, some participants shared their ideas about what nutrition should be like. They did not try to give it any definition, but were simply saying that one should follow such and such diet.

*To have the most essential elements for the organism.* [Man, 49. Group 10].

*One should eat vitamin-rich, strong food.* [Woman, 44. Group 9].

*Calorie-rich food.* [Woman, 51. Group 9].

*Food must be with vitamins.* [Woman, 26. Group 9].

Thus, it may be concluded that the associations of men and women linked with the concept “nutrition” somewhat differed. For women the association array looks as follows:

- intra-family relations, sharing food
- health of children and women who must give birth to children
- particular kinds of food and dishes
- general ideas about healthy food

Whereas for men the association array acquires a slightly different character:

- the necessity of life, care for one’s family
- particular kinds of food and dishes
- general ideas about healthy food

## **B. Associations linked with the concept of “Diet”**

For most participants the notion of “diet” is primarily associated with an illness. It is commonly thought that a healthy person does not need any diet and his organism can deal with any kind of food. Below are some characteristic quotes to illustrate this perception:

*In case of illness one should go on a diet. For example, children and adults with hepatitis have to be on a special diet, so that the disease could be cured without consequences. People with diabetes must also have dietetic food. Diet is prescribed depending on the type of illness.* [Woman, 51. Group 9].

*When I hear the word, I think that a person on a diet should not eat certain foods during a certain period of time, following his doctor’s advice. For example, anything fried. Only light food should be taken.* [Woman, 40. Group 8].

*There are different diets for different illnesses. A person with diabetes must follow one diet, the one with hepatitis - another. The type of diet is to be chosen on the basis of medical characteristics of an ailing person: his energy, anemia, etc. It is to be determined by doctors.* [Man, 49. Group 10].

*Diet is prescribed by doctors depending on the type of disease. I never knew what a diet is. Doctors know about it and they will tell you what and when to take.* [Woman, 21. Group 9].

*If a person is ill or has a sick stomach, he must eat light food or diet food. All food in the village is dietetic; there is no nutritious food here.* [Man. Group 11].

Another understanding of «diet» is linked with particular dishes or food products. For instance, many participants said that depending on the situation, “light dishes,” “vitamin-rich foods,” “calorie-rich and substantial foods,” “boiled and fat-free dishes,” “easily digestible meals,” and the like should be considered dietetic food.

*Dietetic dishes mean strong food. Diet is prescribed for easier treatment of a disease. I myself had an operation on my liver. I had echinococcus. Before the operation I was put on a diet which mainly*

*consisted of boiled food and soups. Chicken soup, mutton or mutton fat soup. They told me this would give me strength before the operation. [Woman, 28. Group 9].*

*I don't care: I see no difference between types of food. But I think that diet means eating dietetic dishes - dishes that are quickly digested in a human organism. For example, boiled rather than fried, dairy food. [Man, 41. Group 10].*

*Bread and other products of bakery which are made using yeast other than ours [i. e. home-made yeast], products made in public bakeries. Crackers. Rye bread. [Man, 44. Group 10].*

*...dishes cooked of poultry also belong to dietetic food (i. e. dishes that are not fried). [Man, 41 Group 10].*

*My elder son has diabetes. He is on a diet, and I cook for him on cottonseed oil (oq moi), and fry only slightly. He has to eat every two hours, avoiding mutton and mutton fat. [Woman, 44. Group 9].*

One participant from group 9 said that a diet is not necessarily prescribed only in case of illness. In her view, a diet means taking food during the day, with restriction on “heavy” hard-to-digest food. She also said that eating regularly is much more effective for health support than eating “strong” “substantial” food.

*Diet is prescribed not only during illness. We ourselves have to keep a diet when we are healthy. Healthy food is dietetic food. For example, we cannot eat plov made of mutton and fat in the morning. In the morning we must drink a cup of milk or tea. This will help our stomach work properly. For lunch we should have stronger food, and something light in the evening. One should not devour food only because it is substantial. It still can harm your stomach. Everything should be eaten in the right time. Non-substantial food taken regularly is healthier than simply substantial food. [Woman, 26. Group 9].*

Thus, the majority of the participants linked the concept of diet with some sickness that prevents a person from taking the food which everyone else (“healthy people”) is taking. This perception was based on the idea that a human organism can be in only two states: health and sickness. While the body is healthy there is no need to pay attention to food - it should satiate (“be strong”) and, naturally, show some diversity, to the extent possible. But if one suddenly gets ill, one needs to take completely different food: “light,” “fat-free,” “vitamin-rich,” and the like.

These associations do not appear by accident: they are firmly rooted in the everyday life of rural people, which is full of hardships and daily life problems. Extremely limited choice of food products which they can use to design their rations does not allow them, while “being healthy,” to get involved in such unimportant, as they deem it, matters as keeping a diet, selecting more nutritious and healthier products, etc. Some participants even said that they were “on a diet” because of economic difficulties. Here are just two examples that characterize daily existence in the rural areas:

*We already said that very few families eat plov. Rice and oil are expensive and to buy meat one also needs money. Now we cannot even buy eggs. That is why many eat dietetic food. Mostly noodles and macaroni. But macaroni now is also expensive. It cannot be made at home, only bought in a shop. The cheapest product is rice chaff [non-standard, very small rice], therefore many people eat it. [Man. Group 11].*

*Today in our circumstances the main problem is lack of food products. In our district there are many cases of anemia. For example, very few people eat meat. This is no secret. Some families have nothing to boil and they eat only bread and tea. If our women ate meat, dairy food, fish and sea food, they would never be sick. [Man, 38. Group 11].*

### **C. Associations linked with the concept of “Healthy Food”**

Economic hardships experienced by rural residents also influenced their ideas about “healthy food.” They believe that “healthy food” is first of all “substantial food” the embodiment of which is fatty plov with

mutton. Besides, it also means solid food rather than liquid, because liquid food is associated with “diet” (see above).

*For me... it is plov. When I think of plov, what comes to mind is plov cooked of mutton and sheep's rump fat, a fatty plov. Because plov is the most favorite national dish of our people.* [Man, a barber. Group 10].

*Nutritious food is first of all fat food. Fat makes a person feel satiated. The food with lots of fat is the most substantial [nutritious].* [Man, 23. Group 11].

*The healthiest food, in my opinion, is milk mixed with honey.* [Man, 41. Group 10].

*Substantial food for me is food made of flour, because it is nutritious.* [Man, 46. Group 10].

*Plov, solid, not liquid, food.* [All female participants. Group 8].

*Plov, dimlama [meat stewed with assorted vegetables].* [Woman, 30. Group 8].

*Plov and dimlama are very substantial food.* [Woman, 50. Group 8].

Secondly, rural people are so far from being spoiled by the abundance of food, that the very concept of “healthy food” makes no sense to some of them. If there is “healthy food,” the logic of things suggests that there should be “unhealthy food” too, and that is what they fail to comprehend.

*I think there is no such thing as unhealthy food. For instance, there can be food that is not fresh, food already spoiled.* [Woman, 40. Group 8].

That is why «healthy food» is:

*Fresh food.* [Woman, 23. Group 8].

*[Food] that gives energy.* [Woman, 30. Group 8].

Dreams of good diet and “healthy food” are reflected in the following statement:

*If for breakfast one has an egg, 50 grams of sausage and cheese with bread, one will not feel hungry till the evening. And one will also be healthy.* [Man, 28. Group 11].

Therefore, the discussions showed that the majority of the participants simply do not have such a concept as “healthy food” in their daily use, because, in their view, there cannot be “unhealthy food.” In the best case, the concept of “healthy food” is linked with the idea of freshness, of food being unspoiled.

## **D. Nutrition and Health**

Discussions about the relation between nutrition and health revealed several different viewpoints regarding the dependence of health on how and what people eat. The largest was the group of participants who maintained that health first of all depends on the consumption of sufficient amount of vitamins contained in herbs, vegetables and fruits.

*Every product contains its own vitamins, but the most useful are fruits. Grapes, for example. They contain glucose, the most important element for human life.* [Man, 49. Group 10].

*They [vegetables] are important for curing illnesses. For instance, onion is good against flu and bad colds. Whenever I have the flu I take onions with pepper and convalesce quickly, as if I never had that illness.* [Man. Group 10].

*Fruits and vegetables. One should drink kompots [boiled fruit].* [Woman, 42. Group 8].

*Even in Tyumen [North-West Russia] they seem to have all essential fruits and vegetables. My brother recently visited that area and told us that people there chew onions while walking down the streets. My brother explained that their organism requires that, so they eat it.* [Man, 44. Group 10].

*In spring one should eat lots of herbs. It is very healthy because they contain a lot of vitamins.* [Woman, 30. Group 8].

*If one eats fruit, in due time one will be healthy.* [Man, 34. Group 11].

The other group believed that health can be guaranteed by the consumption of the right qualities of animal food:

*One should eat eggs and meat, drink milk and eat dairy products.* [Woman, 42. Group 8].

*Of course, to stay healthy, one should eat dairy food in the morning. One should regularly take dietetic food such as meat and eggs. The one who eats these products never gets sick.* [Man, 38. Group 11].

Besides these two viewpoints, some others were expressed, where health was linked not only with sufficient and proper nutrition, but also with following a certain regime and sports.

*Food must be taken regularly and on schedule. This is the most important thing. For example, in the army we were fed at the same hour. When I enrolled I noticed that our rations are about 1/3 of what we used to eat at home. But that was okay. When I returned home, it started all over again: come on, why don't you eat, have some more, etc. If one takes food on schedule, the organism will also call for food at the same hours of the day. In the army they know this is the way to preserve health.* [Man, 49. Group 10].

*If one eats on time, one will be healthy.* [Man, 34. Group 11].

On the other hand, talking of sports and regime did not find support of among the majority, because sports to them is an amusement of urban residents who have no need to engage themselves in physical labor and who are economically better off.

*Sports and games... We don't have any opportunity for that. We have enough of household chores: cooking, laundering, and cleaning.* [Woman, 30. Group 8].

*To go in for sports one must have a strong will; and to have a strong will one needs energy; and there is no energy if a person does not eat well. A human cannot run on an empty stomach.* [Man, 38. Group 11].

Naturally, a point of view was expressed that health is linked neither with a particular kind of food, nor with a certain regime or physical activity, but primarily with dire living conditions, lack of food and money.

*All our ailments are owed to deficiency.* [Woman, 42. Group 9].

*There is severe unemployment, no jobs and no money. That's why everyone is nervous and people get mad at one another.* [Woman, 28. Group 9].

*Men get nervous because of unemployment and freak out, affecting their wives. The wives then get ill and nervous.* [Woman, 45. Group 9].

*There are problems with bread. For example, once a month they give two kg of flour per person. Perhaps, you can guess how much bread we eat here. Nowadays many families live on bread and tea only. In some families there is nothing to boil. Truth must be spoken, not concealed. For instance, if I and my family consume 100-120 kg of flour a month, this costs 12-13 thousand soums. The whole salary can buy only flour, but we need to buy other foods too!* [Man, 27. Group 11].

*We already said that very few families eat plov. Rice and oil are expensive and to buy meat one also needs money. Now we cannot even buy eggs. That is why many eat dietetic food. Mostly noodles and macaroni. But macaroni now is also expensive. It cannot be made at home, only bought in a shop. The cheapest product is rice chaff [non-standard, very small rice], therefore many people eat it.* [Man. Group 11].

*Today in our circumstances the main problem is lack of food products.* [Man, 38. Group 11].

So, if the link between nutrition and health is regarded outside the socioeconomic context, two viewpoints prevail: (a) health depends, first of all, on the consumption of vitamins; (b) health depends, first of all, on

the consumption of animal food. Another point of view that health is also linked, besides the quantity of food, with regime and physical activity (sports), finds but few supporters among the rural population.

## II. DIFFERENT GROUPS OF FOOD PRODUCTS

### A. Protein

Most participants did not use the word "protein." Many even could not understand what the moderator was talking about until he used a different word, a synonym. As regards protein, the absolute majority believed that protein is contained in the following animal food products:

- meat
- eggs
- milk and dairy products
- fish

However, there were people who thought that proteins can be found in the following plant-related foods:

- fruit
- bread, flour
- soy bean products

A woman from group 9 believed that proteins were also vitamins, and a man from group 10 thought that proteins were contained in almost all food products that people eat. The usefulness of proteins was unquestionable to the participants, and for some reason, it was discussed mainly by men.

*Protein is very good for health. If proteins are in deficit, a person may get a sick stomach or a heart attack, diabetes, anemia. I think that anemia develops when protein counts low in the body. [Man, barber. Group 11].*

*Proteins are very useful for the human organism. [Man, 38. Group 11].*

*Proteins are very useful for the organism. As far as I know, blood consists mainly of proteins. [Man, 23. Group 11].*

*There are lots of proteins in soy beans. On the whole, almost all foods consumed by people have proteins. Of course, it is important. It is the basic element of the organism. Our body is built of proteins. [Man, 34. Group 10].*

*...protein deficiency affects the blood system. [Man. Group 11].*

### B. Starch

The word "starch," unlike "protein," was familiar to all participants. According to them starch is contained in the following products:

- potatoes
- rice
- gourds
- some fruits (apples, quinces)

One participant thought that the presence of starch is indicated by the darkening of products after they have been cut. As to the usefulness of starch, the unanimous opinion of the participants was that, to a certain extent, starch is good for health. However, nobody was able to explain why it is useful and what would happen if a person stopped taking it with food.

*Perhaps, one must take starch. Without it one can get sick. Perhaps, some bodily function would fail if there is starch deficiency. [Woman, 51. Group 9].*

### **C. Fruits and Vegetables**

The participants were much better informed about fruits and vegetables. For instance, they said vegetables are essential for preparing any dish and taking vegetables is as natural as breathing. Priorities were given to the following types of vegetables:

- carrots
- potatoes
- onions
- cabbage
- tomatoes
- radishes, turnips, beetroots

Vegetables contain various vitamins that are good for health. Food does not taste good without them. Some vegetables (onions) help cure such diseases as flu or cold. Cabbage is good as a preventive remedy against goiter. The participants considered less useful the "low-calorie" vegetables, such as turnips. But in general, every vegetable contains its own vitamins that are good for a human being.

Fruits are more useful than vegetables because they contain more vitamins. As regards fruits, the participants' knowledge was more sophisticated. For instance, apricots are good for the heart, apples have lots of iron to prevent anemia, peaches influence "organs of motion," grapes contain glucose, strawberries and pomegranates are good for blood, etc.

Of fruits, the most commonly consumed are apples, apricots and quinces. As for other varieties, such as grapes, pomegranates, peaches, figs and cherries, normally a family would not often have them for food, but would try to sell them at the market. Fruits are clearly associated with vitamins without which a human can not be healthy. In a word, fruits and vegetables constitute the basis of the rural residents' diet.

### **D. Oils and Fats**

The words "oil" and "fat" do not cause any negative associations. On the contrary, the majority stressed the importance and exceptional value of oils and fats for nutrition. Some participants simply declared the usefulness of oils and fats without getting into explanation; others tried to find reasons for their usefulness.

*A human needs oil to prevent the organism from drying out; oil makes it soft. [Woman, 50. Group 8].*

*They are useful, because the inner structure of the organism is built of fats. [Man, 49. Group 10].*

Lamb's fat is considered to be particularly valuable and is thought to have extraordinary nutritious qualities. Many believe that a "healthy person" must eat lamb's fat, because it gives strength. Some participants bitterly complained that in their current economic hardships they cannot, despite all their desires, eat lamb's fat.

*Healthy people must eat lamb's fat. I myself cannot. My mouth gets dry. But after I have eaten food cooked in cottonseed oil, I feel better. [Woman, 44. Group 9].*

*The moderator asked: If a healthy person does not eat food cooked in lamb's fat, can he get sick because of the lack of it, or wouldn't it affect his health? This reply was noted: Of course it would. Because the lamb's fat is very strong. It gives strength and therefore should be taken. [Woman, 45. Group 9].*

Cottonseed oil is the most common oil and it is used to cook most of the dishes. Compared to other kinds of oils and fats, it is the least expensive. Besides cottonseed oil, the participants also mentioned other kinds of oil: soybean, sunflower, "haricot bean." Their idea was that oil is contained in the fruits and seeds of many fruits and nuts (peaches, walnuts, almonds, peanuts). The discussions revealed that the use of oils and fats is limited mainly to cottonseed oil, lamb's fat, and home made butter. Lamb's fat is seldom used because of its costliness. Home-made butter is used more often, but not daily. As for other ("exotic") kinds of vegetable oil, such as olive oil, rural residents have never heard of them.

The word "fat" was not linked with excessive blood cholesterol, which the majority, most probably, has never heard of either. Meager rural existence evokes only positive associations linked with the word "fat."

## **E. Choice of Food Products and Reasons for It**

In accordance with limited financial opportunities and their own ideas of the usefulness of a particular product, the participants prioritized their choice of foods as follows:

- price
- nutrition ("full meal")
- availability
- usefulness

Price is the main criterion that counts for making a decision to buy. Of course, many wished to buy chocolate, butter, lamb's fat and meat, despite all reservations concerning their not being very useful for human health. Very characteristic is the following episode in group 8. The moderator asked, "*Suppose I set some food on the table before you: protein is meat, starch is rice, fruits, vegetables, oils and fats. What will you choose?*" "*Meat and oil,*" said a 40-year old woman without a moment's hesitation. "*Why?*" "*Because meat gives energy,*" replied the participant.

Thus, if the limitation of price is removed, the unconditional priority would be given to meat and oil, although many said that lamb's fat, for example, is food too heavy and strong for them. Given limited economic opportunities and hard physical labor which is often the lot of rural populations, their priorities in the choice of food products cannot be arranged otherwise.

*If we were comfortably off, we wouldn't care about price. One should eat vitamin-rich and calorie-rich food. Whenever we have money, we buy calorie-rich products. Our main products are flour and oil. [Woman, 51. Group 9].*

*Economic considerations are the most important for us, as well as the availability of certain kinds of products in the household. [Man, 49. Group 10].*

*With 200 families in our village, you won't be able to find cookies or chocolate in any of them. The economy is in a poor state here, and instead of improving, it's getting worse from day to day. I just want to say at the end that if there is money, a person is healthy, well fed and clothed. It's been already 10 years since we have been independent, and if you compare a village to a city, the city is thriving and the village is falling into decay. [Man, 38. Group 11].*

*...when... food is running out, we first look into our pockets, comparing prices for foods. [Man, 44. Group 10].*

*These days no one is able to buy nuts in the market: 1 kilo costs 600 soums. I, for example, cannot afford it; of course, when there are nuts, you can enjoy eating them with bread. Or almonds, 1,200 soums a kilo.*

*I cannot buy almonds either. But I have an almond tree in town that yields from 1 to 5 kg. I do not sell those almonds; we eat them ourselves. [Man, 38. Group 11].*

The next criterion after price that determines the choice of food products is their nutritional or calorie value, "ability to fill," "strength." People's first choice is products that give the feeling of satiety. For example, bread and potatoes, the most common products in the diet of rural populations, meet well this criterion.

Availability comes next in the priority list following price and calorie value. The choice is for products that are easily available in the household, which are mainly what a family grows in its personal land plot for subsistence.

*But we have the "uzbekchilik" [Uzbek mentality]; that's why we cook from what's available. You do not necessarily have everything handy. [Woman, 42. Group 9].*

*Some can afford eating plov, some cannot. Ration in our families mainly depends on the available products. [Man, 49. Group 10].*

The last criterion in the priority list is the usefulness of the product. Despite the fact that many participants spoke of the usefulness of a particular product, in reality its usefulness defers to all the other criteria: price, nutrition, and availability. In addition, speaking of the usefulness of certain products or dishes, the participants meant that those products were simply hard to digest, without mentioning other characteristics of such foods.

*We should mainly eat cottonseed oil. It is a light oil. We are all anemic and cannot receive strong fats. One should eat mixed food, that is, a bit of everything. [Woman, 42. Group 9].*

*I am not sure which products, but one should avoid fried dishes, because they are hard to digest. For example, plov. Of fruits, one should not eat too many peaches. [Man. Group 10].*

*In the circumstances, especially in spring, one should eat a lot of vegetables and food cooked with vegetables. Also herbs, because they are good for health. All of them contain different vitamins. This is considered light food. [Man, 23. Group 11].*

*It is possible to cook tasty food without meat, just vegetables and herbs. But then oil must not be spared, and the more potatoes and other vegetables the better. [Man, 46. Group 10].*

*Cabbage should be eaten as little as possible. It is not fat and will absorb all fat in the intestines. It would be good to have milk and butter in the morning - it can last you till lunch time. [Man, 38. Group 11].*

### III. VITAMINS AND IRON

#### A. Vitamin C

All participants had heard something about vitamin C. At the same time their knowledge of its content in particular foods and its usefulness was rather vague. Some participants believed that vitamin C is present in all products, even in fermented milk (Woman, 21. Group 9) or in oils (Woman, 26. Group 9).

The majority gave names of products with a greater content of vitamin C. Below is the list of the most frequently mentioned products which contain vitamin C:

- carrots
- onions
- tomatoes
- dog rose fruits
- peaches
- quinces
- all vegetables, fruits and herbs in general

According to the participants, the reasons why vitamin C has to be taken are as follows:

- it is generally good for health
- it prevents anemia (or: "increases the amount of blood")
- it strengthens teeth
- it gives energy

Therefore, the participants failed to demonstrate any more or less clear understanding of which foods are particularly rich in vitamin C, and what effect it has on the human organism. There was a general conviction that this vitamin is one of the most useful and has to be taken.

#### B. Vitamin A

Ideas about vitamin A are even more indefinite. An absolute majority could say nothing either of vitamin A-containing foods, or its functions, or why people need it. However, some had come across information about this vitamin (for instance, in the polyclinic's billboard), but that information was fragmentary and inaccurate.

*The one who wants to get information will read and inquire. For example, recently I read about this vitamin in the polyclinic's billboard. I discovered that vitamin A deficiency can lead to rickets. There was a lot of information and I could not remember it all. There were also pictures of different foods showing which vitamins they contain. If I am not mistaken, vitamin A is present in fish... It is good against rickets. Of the rest I am not sure. [Man, 49. Group 10].*

*We heard that it is present in some fruits, but I'm not sure which. Maybe in oranges. [Man, 28. Group 11].*

"We know it is useful, but why precisely, we are not sure." This statement by a 23-year old woman from group 8 describes the scope of the participants' ideas about vitamin A. Some people had once learned that this vitamin is prescribed together with injections.

## C. Iron-rich Food

Compared to knowledge of vitamins, knowledge of iron-rich foods is more extensive. This is, of course, accounted for by widespread anemia and educational campaigns telling people how to prevent and cure it.

Most participants had heard that iron is present in apples, raisins and meat, particularly beef liver and tongue. Some believed that iron is also present in foods made of flour, in potatoes, quinces, and other fruits and vegetables. Peoples' ideas about apples as one of the most iron-rich products were supported by their own experience.

*I used to have a hemoglobin level of 11. Once I was told it had dropped to 9. Then doctors said that apples contain iron, which is good against anemia. There are lots of apples in our village, and after I started eating them, the hemoglobin level increased. Other fruits also have a lot of iron, raisins, for example. Raisins help raise the hemoglobin level. Grapes are also rich in iron and are very good for health. [Woman, 51. Group 9].*

## D. Diet Preferences

The discussion about the participants' culinary likes and dislikes showed a high degree of commonality in their answers, which is not at all surprising, considering the limited opportunities of the rural population. An unmatched winner among all dishes was, naturally, plov<sup>2</sup>. Plov is the main national food of the Uzbeks. Reasons for this attachment to plov were many:

- its ability to fill and its taste
- its status as a ceremonial dish (“During all events plov is cooked” Man, 23. Group 11)
- its harmlessness even for ailing people (“We cook plov more, because children had hepatitis” Woman, 38. Group 8)
- its ease of preparation
- “just because we love it”

*I like only plov. As our ancestors used to say, the horse's food is corn, the man's food is plov. Receiving guests and holding various events can never happen without plov, because the main dish of the Uzbeks is plov. [Man. Group 10].*

Naturally, there were people among the participants who preferred other dishes. Reasons why other dishes were preferred to plov were mostly limited to situations when a person could not take heavy meals. Other favorite dishes included:

- shurpa [meat soup]
- mastava [meat and rice soup]
- pelmeni [kind of ravioli]
- dairy foods

The most curious fact is that plov served as a kind of starting point for naming dishes people most disliked. For instance, when the participants were talking of foods they would never eat, they often started with mentioning plov. The reasons for this dislike, although rare, were that plov is a heavy food and is hard to digest.

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<sup>2</sup> Plov is a dish consisting mainly of rice cooked in oil; it usually contains onions, carrots, and meat and sometimes other vegetables or even dried fruit, depending on local tastes and product availability.

*Here we say that plov is substantial and tasty, but when we eat it and go to bed, we ruin our stomachs.*  
[Man, 23. Group 11].

Besides, it should be noted that the discussion was not about foods, but about dishes. The matter is that the participants could not conceive how one could reject any food product. The way the question was formulated confused them.

*One must not choose [be picky about] food. Only spoiled food can be rejected.* [Man, 49. Group 10].

Many participants do not like eating liquid dishes and dishes with low-calorie products ("sovukliq"), such as turnips. They apparently believe that taking low-calorie foods (like turnips) is a pointless burden on the stomach and intestines.

## IV. FAMILY DIET

### A. General diet arrangements in the family

Today in the rural area it would be impossible to find anyone who would not have one's own little farm, grow essential fruits and vegetables for subsistence and sales, and rear cattle or poultry. Such a family would simply not survive in the present circumstances. The most commonly grown fruits and vegetables are:

- carrots
- potatoes
- tomatoes
- (black) radishes, garden radishes, herbs
- onions
- (French) beans
- apples

Most people grow fruits and vegetables not only for their personal consumption, but also for sale. Some households with more land sell 60-70% of the yield, but there are families who cannot spare anything to market.

*We have a tiny piece of land, 0.06 ha. We don't sell; we keep it for ourselves only. [Woman, 45. Group 9].*

*We've got everything: even garden radishes, herbs, etc. If we yield one ton of potatoes, we sell 500 kg and 500 kg is for ourselves. [Man, 44. Group 10].*

*For example, if we harvested one ton of bell peppers, we keep 100-150 kg, which is enough for us, and sell the remaining 900 kg. [Man, 23. Group 11].*

The main products bought in the market are those that cannot be produced or grown domestically. These are:

- salt
- flour and macaroni foods
- vegetable oil
- sugar
- rice

At the same time, many people also buy foods for daily consumption, such as potatoes, onions and meat (seldom). The fact that basically all people grow fruits and vegetables does not mean that they eat enough of these, because many depend on money raised from sales of these products in the market. The market has drastic rules and only good quality products can be sold, that is why villagers have to make sacrifices.

*We select red and beautiful apples and sell them. Small apples we give to children. [Woman, 42. Group 9].*

*If, for example, we harvested 500 kg of potatoes, 400 kg is sold and 100 is kept in the household - small potatoes. [Man, 38. Group 11].*

*...I know for sure that 99% of families slaughter to sell. Of course, there are families who live comfortably. They feed a sheep then slaughter it, say, in November, for winter. But many keep livestock only to sell. [Man, 38. Group 11].*

Particularly interesting is the consumption of meat products, first of all, because the majority of the rural population regards them as desirable and healthy, and secondly, all the main dishes of Uzbek cuisine are based on meat. Most households keep some livestock; however, the meat consumption rate remains very low.

*We buy 0.5 or 1 kg twice a month. At other times we have our home-reared chicken, and, as Tuichi-aka said, every day we put 2-3 eggs in a bowl. [Man, 34. Group 10].*

*For the family of 5 - about 1.5 kg of meat a week. [Man, 41. Group 10].*

*In Shakhimardan many sell meat, leaving home only the head and other sub-products. For example, with my husband not working, we live on my pension. Some of this money we spend on 2-3 kg of meat, which we eat but once a month. [Woman, 45. Group 9].*

*I also buy meat only after I have received my pension. I buy 2 kg. of meat. [Woman, 44. Group 9].*

*For example, I get 5,500 soums which is due in the middle of the month, but they actually pay it at the end of a month. Depending on this we make our purchases. We are trying to last without meat till the pension is paid. We buy mainly flour and oil. [Woman, 45. Group 9].*

Cattle are regarded mainly as sources of milk and dairy food. Sheep and poultry are often reared for the market, rather than for personal consumption.

*If we slaughter it, we eat it too, but when we sell it live, then, of course, we don't. We tend not to keep a lot of meat for the family of 5, because it gets spoiled. Therefore, we keep 1-2 kg and sell the rest to use the money to buy fresh meat afterwards. [Man, 41. Group 10].*

*Sometimes, when people have to make a major purchase, they can sell one sheep. But they seldom slaughter for their own needs. [Woman, 38. Group 9].*

## **B. Diet-related Decision-making**

Normally, in the participants' families there is a strict allocation of household chores and duties: men bring food products and women cook. The rule can be neglected only in a very few cases, for instance, when a husband is a cook by profession, or a wife cannot work in the kitchen due to illness and other reasons.

As regards making a decision about what to cook and about appropriate diet, the participants claimed that such decisions are made jointly. Curiously, the male groups more often claimed that the decision-making in this area belongs to men, and the female groups thought it was more up to women. In reality, as some of the participants stated, in the circumstances, the right or wrong diet is not an issue, because food is prepared from the available products which often do not present an opportunity to make a choice.

Usually they cook food which is satisfactory for all the family. Exceptions, again, are made only for some emergency situations (sickness, etc.). In such cases special meals can be prepared for individual household members, especially for children.

*...mainly we cook what suits everyone. Therefore everybody eats the same food. Only when someone gets sick, they may cook different dishes. [Man, 41. Group 10].*

## **C. Seasonal Differences in Diet**

Practically, in all rural families there are clear seasonal differences in diet. This was most explicitly expressed by one of the participants:

*There are two kinds of food: summer dishes and winter dishes. Summer dishes are mainly cooked with products grown in the kitchen garden with bell peppers and herbs. In winter the cooking is different; it even tastes different. In winter you cannot detect cooking flavors from outside, where as in summer every house is emitting different cooking aromas. [Man, Group 10].*

Seasonal diet is a natural phenomenon for the rural population who are not used to eating otherwise. Therefore the majority does not question this order of things, and they believe that the human organism adjusts itself to seasonal changes in diet.

*Summer brings fruits and the table is richer. No such thing in winter. It may happen that you can have only bread and tea. [Woman, 23. Group 8].*

*Solid food in winter and liquid in summer and we tend to cook more often in summer. Winter calls for more substantial food. [Woman, 41. Group 8].*

*Of course, there are [differences]: it's easier to feed ourselves in summer. We grow all vegetables and fruits in our kitchen garden. No problems with it. But things get harder in winter. [Man, 27. Group 11].*

In summer time the diet is based mainly on fruits and vegetables grown by every household. Summer is the time to stock the organism with vitamins. In summer one does not feel like having "substantial" food or meat-based food.

*When it is hot, one feels like having something liquid; if one has plov in hot weather, one can get sick. [Woman, 50. Group 8].*

*In summer we eat salads made of fresh cucumbers and tomatoes. [Woman, 38. Group 9].*

The winter diet follows completely different principles: Of course, in winter one also wants to have salads and fresh fruits and vegetables, but despite their availability on the market, very few can afford them. Therefore, winter is the time that "has to be survived through." In winter one must have "strong," "substantial" dishes and take more meat and fat. Of course, vitamins are not completely forgotten: people eat home-canned fruits and salads.

*In winter we chiefly eat main dishes, such as plov, which is substantial. And in summer time we eat soups, like mastava. [Woman, 51. Group 9].*

*In spring we are craving tomatoes, cucumbers and herbs. But we cannot afford having them. It is just a matter of money. [Woman, 38. Group 9].*

*...In winter one can forgo eating fruit. In summer one can forgo eating meat, because summer brings lots of fruit. [Woman, 50. Group 8].*

*In winter one must eat lamb's fat - it also protects you from cold. [Woman, 45. Group 9].*

*To stay healthy, one must eat more fruit... In winter it is also essential to have different fruit. It is available in the market all year round, and one can remain healthy through the winter and spring, because fruits contain lots of vitamins. In summer our children may not eat bread at all, but they never quit on fruit and stay fed all daylong. [Man, 46. Group 10].*

Despite the abundance of vegetables in warm seasons, salads are not widely represented in the rural diet. First of all, people do not make them often; secondly, the variety of salads is very limited: salads are made of carrots, tomatoes and onions, beet-roots and radishes. As one female participant admitted, they "do not pay much attention to salads."

#### **D. Different diet for different household members**

The participants of both male and female groups admitted that families follow a rather strong tradition: men eat more and better than anyone. Children come next in the hierarchy and then women. According

to the participants, there are more than enough things to justify this hierarchy: (1) men work and earn more; (2) men are physically stronger than women and require more food; (3) men are treated with greater respect in the family than women.

*Men earn money. Women also do, but men's earnings are greater.* [Woman, 42. Group 9].

*Normally men eat more than women. Because men work more.* [Man, 49. Group 10].

*Men eat more because they work harder. Anyway, they are stronger than we are.* [Woman, 44. Group 9].

*Among children, boys also eat more than girls. They are still stronger than women.* [Woman, 42. Group 9].

It is, therefore, not surprising that these perceptions result in the most frequent occurrence of anemia among young daughters-in-law who rank the lowest in the family hierarchy, deferring to all other household members. Their diet is according to their status.

Some men, however, objected to the statement of unequal food distribution in the family, claiming that all family members have equal rations, and to the idea that food is distributed on the basis of the principle "one who does not work gets no food." But even if in some families this is the case, this does not change the overall picture.

*In our family everyone gets an equal share, and children - depending on their age, have half the bowl. And women eat as much as we do - one bowl for each.* [Man. Group 10].

*No, this is not always so, because women eat as much as we do, when they work in the field.* [Man, 46. Group 10].

*The one who worked more on that day, eats more.* [Man, 44. Group 10].

## **V. INFORMATION CHANNELS**

### **A. Sources of information on diet**

Information on proper diet and healthy foods came from different sources, although sometimes this information is inconsistent and inaccurate. Diet traditions among relatives and friends play a great role concerning food arrangements. Naturally, relatives, friends and acquaintances are the first people to whom people turn [for information]. Then come doctors, whose opinions are traditionally listened to. Less frequently consulted are mass media (television, newspapers and magazines).

The relatively low popularity of the mass media can be explained, perhaps, by the fact that there are few programs and broadcasts on proper diet in the newspapers and television channels available to the rural population. On the other hand, such programs would not dwell on the extremely scant diet opportunities characteristic of the life of rural people.

### **B. Famous people with an image of healthy individuals**

The image of a healthy person is usually associated with stage performers, TV presenters, and famous sportsmen (often boxers). The President of Uzbekistan is also listed among "the healthiest people."

*Khasanboi, the one who amazes me the most, is a person who can make a 2-3 hour presentation at the Oliy Majlis [the Parliament] without a break. Or chairs meetings. I think that this person is the healthiest of all. [Points at the portrait of Islam Karimov] [Man, 44. Group 10].*

Reasons for this evaluation stem from the following considerations: "he moves a lot while performing," or "sportsmen do nothing but take care of their health, for this is their job." The main criterion the participants used to judge about health of a particular individual was his "appearance" which they can assess only from the image transmitted via television.

### **C. The most popular television channels**

The list of the most popular TV channels included those available in this particular geographical area. There are very few of these channels:

- "Yoshlar"
- UzTV-1
- UzTV-4

The most popular TV programs are:

- «Azizim»
- «Begoyim»
- "Davr" news program
- movie series
- news program "Akhborot"
- some Russian TV programs (ORT)

Among other popular programs the participants mentioned "Maslakha", "Ochil Dasturkhon," "Tasvir," "Khandalak," "Tabbiat Olamida," "Assalom Uzbekiston," "Otalar Suzi," "Askar Marbati," "Kelin Kuyov,"

and "Dolzarb." People watch TV mainly in the evenings, because in the day time hours everyone works, and also there are few morning or day-time programs on the available channels.

#### **D. The most popular radio stations**

According to the participants, radio is less frequently used as a source of information than television. One of the reasons is that many radio units that once existed in almost every family home are not operational now, and few people have good radio sets that could receive broadcasts of different radio stations, including short wave transmissions.

An obvious leader is the Ferghana channel "Echo of the Valley" ("Vodiy Sadosi"). The participants also listen to "Mash'al" and "The Voice of the Youth" ("Yoshlar Ovozi"). The most popular programs are music and news.

#### **E. Reading newspapers and magazines**

Even less frequently the participants read newspapers and magazines. The most popular was the informational and entertaining newspaper "Darakchi." On the whole, only two titles were listed among the most popular newspapers:

- newspaper of Ferghana «Darakchi»
- newspaper of Ferghana «Adolat Yuli»

The participants also mentioned such titles as "Oidin," "Bogdod Khayoti," "Tashlakskaya Zarya" [The Dawn of Tashlak], "Marifat," "Postda" [On Guard], "Sado," the rayon level newspapers "Vodil Yogdusi" and "Toshlok Tongi." The most attractive parts of these titles are the entertaining materials: crossword puzzles, "all sorts of stories," ads, and letters.

## VI. CONCLUSIONS

This report presents the results of focus group discussions on nutrition awareness and perceptions of the rural population in the surveyed areas of Ferghana Oblast. The discussions showed that nutrition basically was not defined from the perspective of its usefulness or harmfulness to health. For women, nutrition primarily meant family relationships, sharing meals, satisfaction of all family members, and familial harmony. For men, nutrition was first of all associated with the necessity to do something for living, to take care of their families.

Naturally, associations linked with nutrition were not exhausted by what has been mentioned in this report. For instance, women regarded the usefulness of foods from the point of view of their impact upon maternal health important to produce healthy offspring. Nutrition was also associated with different kinds of foods or dishes. Finally, there were also a number of common ideas about the usefulness of diet which were limited to abstract statements like "the consumption of elements essential for the organism."

The ideas and understanding of diet were mainly related to instances of illness when nutrition patterns have to be altered. The prevailing perception was that "a healthy organism" does not need to adhere to any diet. One could not expect to encounter any other attitude in the circumstances where most of the food products are in deficiency. Therefore, difficult economic circumstances condition this "neglectful" attitude towards one's own health. Essentially people work and live without any mercy to their health, without attempting to rationalize their attitudes to their health and body.

This lifestyle was explicitly represented in associations linked with the concept of "healthy food." Some participants could not understand at all what was being asked of them, because in their understanding only "spoiled" food can be unhealthy. "There is no such thing as unhealthy food" was the thesis formulated by many participants. Yet healthy food is always "substantial" or "strong," and its topmost incarnation is fatty plov cooked with lamb.

In the participants' opinions, health certainly depends on nutrition. However, what they meant here was not a particular kind of food, but an opportunity to consume as much food as needed. The theme of food deficiency was, naturally, a leader in the discussions. However, other viewpoints were also expressed, mainly that: a) health, first of all, depends on the consumption of vitamins; b) health, first of all, depends on the consumption of animal foods.

The participants' ideas about different groups of food products were fragmentary. For instance, the word "protein" was nonexistent in their vocabulary, but a synonymous word "belok" was used instead. The participants' knowledge was limited to the facts that proteins are present in animal foods and that they are generally good for the human organism. There were those, however, who believed that there is more protein in vegetables and fruits, as well as in flour and bread. All participants knew of such an element as starch, but a lot fewer people knew where starch is present. Not a single person knew about the particular functions and usefulness of starch.

Awareness of vegetables and fruits, their usefulness, and the presence of vitamins in them was quite good. However, the concepts of "oil" and "fat" did not cause any negative associations. For example, none of the participants mentioned high cholesterol level and other effects of fat on the organism. The prevailing view was about the calorie and nutrition values of oils and fats.

The choice of food products is, first of all, dictated by price and calorie value ("ability to fill"). Of the key criteria (price, calorie value, availability, usefulness) usefulness is the least important factor. Moreover, the usefulness of foods and dishes was usually understood as the quality of being easy to digest, rather than any other characteristic.

Discussing the issues related to the presence of vitamins and iron in foods led to the following discoveries. Many people were well aware of vitamin C, but this knowledge was limited only to its presence in different

vegetables and fruits and of its general usefulness for the organism. The knowledge of vitamin A was practically nonexistent: the participants knew neither where it is present, nor what its effects on the body are. This was most precisely expressed by one female participant: "we know there is some usefulness in it, but what it is precisely, we don't know." Due to widespread anemia, the knowledge of foods containing iron was significantly larger.

Identifying preferences in food rations was reduced to mentioning dishes rather than food products. Naturally, the dishes of traditional Uzbek cuisine were discussed. The expected and legitimate winner was plov. Reasons for this liking are diverse, ranging from the rationale of its being easy to cook, to irrational affection ("we simply love it"). There were people who did not like plov, but in these cases the dislike came from illness or digestion system disorders. "Plov is a man's food" was the emotion expressed by one of the male participants.

General organization of family diet was arranged in the following manner. Some basic foods (vegetables, fruits, eggs, milk and, sometimes, meat) are produced by households themselves; the other foods (flour, vegetable oil, salt, sugar, rice, macaroni foods) are purchased. Many households, though, buy even the most commonly used foods, such as onions, potatoes, and meat. Despite the availability of livestock, practically in every household the consumption of meat and meat-based foods is rather limited. This is, first of all, explained by the fact that cattle, for instance, are regarded as a source of milk, poultry as a source of eggs, and sheep and goats are mainly commodity meats traded in the market.

The households maintain a clear allocation of duties: a man's job is to bring food products and a woman's job is to cook the food. No serious efforts were being made to develop a household nutrition strategy: normally people cook from what comes in handy. Seasonal differences in diet patterns are sharp and understandable. As one of the participants said, there are summer and winter dishes. In summer people stock their bodies with vitamins, in winter they eat mainly "substantial" calorie-rich food (more fat and meat) to survive the chills. Households adhere to the firmly established and unquestionable practice of food distribution, where men consume more food than women. In keeping with the family hierarchy, the smallest ration is for daughters-in-law, and that is why they have anemia more often than people of other social categories.

Therefore, knowledge among the rural population in the surveyed areas about rational diet was extremely limited, and people themselves are rather conservative in their choices of nutrition strategy. Available information channels give very little time to cover the issues of rational diet and have no influence upon people's behavior in this particular area of life.

# ***Moderator's Guide for Conducting Focus Group Discussions on Nutrition***

## **1. Introduction (5 minutes)**

- E. *Introduction.* Hello. My name is \_\_\_\_\_ and I work at the Center for Social Research "Expert" located in Tashkent. I think that most of you have not participated before in the discussion that we are going to conduct. I would like to thank you for sparing some of your time for this discussion. Today we are going to talk about some issues that are related to anemia and other illnesses.
- F. *Goal of the discussion.* Our main goal is to learn what YOU PERSONALLY think and know about the questions that we will discuss. I will not be an expert and try to teach you something, vice-versa, YOU WILL speak about everything you know and think. Besides your group, there will be several other groups in different regions of Ferghana Oblast. Results of these discussions will be used to help avoid anemia and improve people's health.
- G. *Methods of conducting discussions.* Here are several main rules for our discussion.
- Our discussion will last for two hours and will be taped. My assistant will do some recording. This is done so that we will not miss any of your thoughts and ideas. I want to assure you that no one except for the research group will hear what you will be talking about today. Your last names and first names will not be mentioned in the reports.
  - There cannot be right or wrong answers during our discussion. We want to hear everything that you think based on your beliefs and experience. You do not have to agree with each other; you can express positive and negative remarks. If you do not agree with a speaker, please express your opinions. Feel completely free.
  - It is important that we hear everyone so, please speak loudly if you have something to say. We are taping the discussion, so, please try to take turns when you speak, because only in this way will we be able to hear each speaker. Try to make your answers concise. The objective of this discussion is to collect various opinions.
  - I will not express my opinion. My role is to direct the conversation so that everybody has an opportunity to express oneself and be heard. If I interrupt you and go onto another topic, please do not be offended. We have many topics for the discussion and sometimes I will need to change topics quickly. We can talk more after the discussion, if you feel that we missed something.
  - MAKE SURE THAT EVERYBODY KNOWS WHERE BATHROOM IS LOCATED. If you need to leave the room during the discussion, do not hesitate to tell me about it.
  - Do you have any questions?
- H. *Introduction of the participants.* I would like to go around and let everybody introduce themselves, tell us what they do, a little bit about their families, and so on. Please, let us start with ...

## **2. General Ideas about Nutrition (20 minutes)**

- B. Let us first talk a little bit about nutrition in general. I will give you the names of some concepts, and you will tell me, what associations you have when you hear them: that is, what comes to your mind in relation to the concept. Let us begin with the concept of "nutrition" or "food." What is the first thing that comes to mind when you hear these words? [IDENTIFY EVERY ASSOCIATION MENTIONED BY THE PARTICIPANTS.]
- Why does this particular thing come to your mind?
  - Any other thing? Anything else? And so on.

- D. Now I will present you such concepts as "diet" and "balanced" diet. What can you say about them? What is the first thing that comes to mind when you hear these words? [IDENTIFY EVERY ASSOCIATION MENTIONED BY THE PARTICIPANTS.]
- Why does this particular thing come to your mind?
  - Any other thing? Anything else? And so on.
- E. Finally, such concepts as "healthy food" and "nutritious food." What is the first thing that comes to mind when you hear these words? [IDENTIFY EVERY ASSOCIATION MENTIONED BY THE PARTICIPANTS.]
- Why does this particular thing come to your mind?
  - Any other thing? Anything else? And so on.
- F. In your opinion, how important is proper nutrition for health? Maybe there are more important things that make a person stay healthy?
- If yes, what are these other things? Why do you think so?
  - Do you think there are any foods that are particularly important and have to be eaten to stay in good health? If yes, what are these foods? Why do you think so? If no, why?

### **3. Different groups of food products (20 minutes)**

- C. Now let us talk a little about some elements that are contained in different food products. Let us start with the word "protein." Which foods do you link with this element?
- Why these particular foods? How did you learn that these foods contain protein?
  - Do you think protein is important for health? Why do you think it is, or why you think it is not?
- D. The next word is "starch." Which products, do you think, contain starch?
- How did you learn that these foods contain starch?
  - Do you think starch is important for health? Why you think it is, or why you think it is not?
- E. What is the first thing that comes to mind when you hear the word "vegetables?" How important are vegetables for health? Why are they important? Or why are they not important?
- F. I would like to ask you the same questions about fruits. What is the first thing that comes to mind when you hear the word "fruit?" How important are fruits for health? Why are they important? Or why are they not important?
- G. Finally, such concepts as "oil" and "fat." What is the first thing that comes to mind when you hear these words? Which foods contain oils and fats? Are oils and fats good for health? Why are they good or not good for health?
- H. Of which groups of foods that we mentioned do you think you should eat more? Why?
- Which groups of foods that we mentioned do you think you should eat less? Why?
- I. When your family decides which foods to use for cooking, what are the main considerations that determine your choice: availability, price, taste, nutrition value? Or do you make decisions to get a balance between different foods in your ration?
- Why are these particular considerations important?

#### **4. Vitamins and Iron in Foods (20 minutes)**

- B. Let us talk about vitamins and other elements present in foods. Have you ever heard of vitamin C? If yes, where did you hear about it?
- Which foods, do you think, contain a lot of vitamin C? And which food products do not? How did you learn about it?
  - Is it good to eat foods rich in vitamin C? Why is it good or why is it not?
- C. Have you ever heard of iron-rich food? If yes, where did you hear about it?
- Which foods, do you think, contain a lot of iron? And which food products do not? How did you learn about it?
  - Is it good to eat iron-rich food? Why is it good or why is it not?
- G. Have you ever heard of vitamin A? If yes, where did you hear about it?
- Which foods, do you think, contain a lot of vitamin A? And which food products do not? How did you learn about it?
  - Is it good to eat food rich in vitamin A? Why is it good or why is it not?
- H. What kind of food do you personally prefer? Why? And what kind of food do you dislike most? Why?
- Are there food products which you would not eat in any circumstances? What are they? Why?

#### **5. Family Diet (30 minutes)**

- E. Let us talk a little about food-related arrangements in your families. Do you grow any fruits or vegetables in your private land plots? What are they?
- Does your family consume what you produce? How much approximately is for family consumption, and how much goes for sale?
  - Do you rear any cattle or poultry? Which particular kinds?
  - Does your family consume the meat of the livestock that you keep? How much approximately is for family consumption, and how much goes for sale?
- F. Which food products in general does your family buy? Which of these do you buy more often? Who in your family decides which food products to buy?
- Which foods does your family consume more than other foods? Less than other foods? Why? Which food products do you wish you could buy but cannot for some reason? For which reasons?
- G. Are there differences between your winter and summer diet? Why?
- Which foods do you mainly eat in winter? Why?
  - Which foods do you mainly eat in summer? Why?
- H. Who in your family decides what to cook? And who cooks? Why?
- Do you and your family often eat salads made of raw vegetables? Why you do and why you don't?
  - When your family cooks vegetables, do you deep-fry or properly boil them, or just sauté [fry slightly] or boil them slightly? Why?

- I. Who in your family eats more: men, women, or children? Or does everyone eat the same amount of food? Why?
- Are there differences in what men, women and children eat? Or do they all eat the same kind of food? Why?

### **6. Informational Channels (20 minutes)**

- F. Let us talk a little about from where you receive information on proper nutrition and other issues. Who in your family makes the decision related to what you should eat? Why is the opinion of these people decisive? Do arguments pertaining to proper diet take place in your families?
- If so, what are these arguments about?
  - Do you accept opinions of people who are not your family about proper nutrition? Whose opinion is important for you? Why?
- G. Can you remember a famous person, for example, a famous television commentator, a singer, a sportsman, a politician, or an actor who you think is a healthy person? Why exactly this person? How can you see that s/he is healthy?
- H. What television channels do you watch more often? What shows on these channels do you like most? During what part of the day do you watch television and how much time do you spend watching it?
- I. What radio stations do you listen to? What radio shows do you like most? During what part of the day do you listen to the radio and how much time do you spend on this?
- J. Do you regularly read newspapers and magazines? If so, what newspapers and magazines do you read? When you read them, what sections do you like in newspapers and magazines?

### **7. Conclusion**

- B. That is all I wanted to talk about. Do you have any questions? Thank you for your participation in this discussion.

# **DISCUSSIONS WITH HEALTH CARE WORKERS**

## ***Main Conclusions***

The discussions held with health care workers from rural healthcare facilities in selected regions of Ferghana Oblast provide a considerable amount of information that aids us in determining how USAID/ZdravPlus will be able to progress in their future activities.

Any strategy worked out for activities of rural healthcare facilities related to anemia will always be hindered by the problem related to the inability of most rural residents to plan wholesome diets. It is unwise to expect notable success in combating anemia without eating balanced diets.

Healthcare workers who provide patients with correct recommendations that include consumption of certain staple foods as well as expensive iron supplements face tough challenges related to the impossibility of implementing these recommendations. As a result, patients turn away from medicine and trust doctors less.

Some of the healthcare workers have only superficial knowledge about the nutritional contents of certain substances (e.g., proteins and starches) in various staple foods and also have only a vague idea about how these substances act upon the human body. As a result, the level of knowledge of such healthcare workers is not much higher than that of the rest of the population. This does not add to the authority of medicine and does not add to strengthening people's trust in healthcare workers' recommendations.

Naturally, we cannot provide recommendations pertaining to activities that need to be conducted with the personnel of rural healthcare facilities since this is beyond our competency. Therefore, development of consultations, in our opinion, should be done by USAID/ZdravPlus. Our main objective in the following survey was to obtain a real picture of under what conditions and how the personnel of rural healthcare facilities work. We hope that we managed to achieve this goal.

## ***Background***

In accordance with a "Memorandum of Understanding" signed on October 27, 1997, by the governments of the United States of America and Uzbekistan, USAID/ZdravPlus renders technical assistance aimed at improving the effectiveness of health care services provided to the rural population of Uzbekistan. In particular, a new model of health care is being introduced in rural areas of Ferghana Oblast.

A series of focus group discussions were held in Ferghana Oblast and aimed at further development of the new model and at a thorough understanding of USAID/ZdravPlus' objectives. In the course of the discussions, knowledge of and attitudes towards anemia of ordinary rural people as well as knowledge about and treatment of anemia by health workers (e.g., doctors and mid-level health personnel) from rural health care facilities were studied.

## ***Methodology***

In accordance with the specifications attached to the contract concluded between USAID/ZdravPlus and Expert-Fikri firm, the method of focus group discussions was selected for implementing the survey. Selection of participants in the discussions was completed in four rural regions of Ferghana Oblast. A list of groups and criteria for selection of participants is shown in Table 1.

**Table 1. List of participants in focus group discussions.**

№	<i>Title of the Group</i>	Topic	Participants	
			Sex	Age
12	Medical staff of SVP (physicians, nurses, midlevel personnel)	Health Care Workers	M & F	Any
13	Medical staff of SVP (physicians, nurses, midlevel personnel)	Health Care Workers	M & F	Any
14	Medical staff of SVP (physicians, nurses, midlevel personnel)	Health Care Workers	M & F	Any
15	Medical staff of SVP (physicians, nurses, midlevel personnel)	Health Care Workers	M & F	Any

The location of focus group discussions is indicated in Table 2.

**Table 2. Location of focus group discussions.**

Village, Village Council	Region	Name of Rural Health Care Post	Population	Group Number
Zilkha village	Oltarik	Zilkha (III)	5960	12
Shakhimardan village council	Ferghana	Shakhimardan (II)	3400	13
Birlik village council, Yakkatut village	Toshlok	Birlik (III)	12357	14
Kuchkak village	Bagdad	Kuchkak (III)	8220	15

Fieldwork was implemented over the period from April 1-11, 2001. Group discussions were conducted by two teams from the Expert-Fikri Center – a team of men (a moderator – Khasan Nazarov, an assistant – Ilkhom Khalilov) and a team of women (moderators – Dilbar Gulamova and Mavluda Eshkhuratova, an assistant – Mukaddas Azizova).

There were no difficulties during the selection process. Inhabitants of the residential areas where discussions were conducted readily agreed to participate in them. Discussions took place in isolated premises, usually in the buildings of village councils and were recorded on a Dictaphone. Detailed shorthand reports were prepared on the basis of these recordings (see Part 2. Appendices).

The following report was prepared by the project manager Igor Pogrebov on the basis of shorthand reports as well as on the moderators' comments.

## **VII. ANEMIA**

### **A. Prevalence of Anemia**

Prevalence of anemia is significant. Most healthcare workers in rural healthcare facilities stated that anemia was their main problem and the most frequently occurring disease in their area. Anemia is especially prevalent among pregnant women (according to some of the discussion participants' statements, in 90-100% of cases); however other categories of population are also susceptible to it.

*Anemia is women's main disease. About 95% of our women suffer from anemia. We treat this disease, but I don't see any effects.* [Man, a doctor. Group # 13].

*On our territory almost 100% of women are registered with anemia. In the past 50-60% of women suffered from anemia. During the last 4-5 years their number increased to 90-100%.* [Woman, a laboratory manager. Group # 14].

In the opinions of rural healthcare facilities' employees, reasons for the prevalence of anemia were numerous. The main reasons were:

- wrong and inadequate nutrition
- refusal from following recommendation of doctors on anemia treatment
- reproductive behavior and attitudes that do not allow women to recover and resume their strength after giving birth to a child
- inequality in the family
- harmful ecology

Wrong nutrition results from poverty and lack of main staple foods. However, another crucial cause is carelessness about rational diet planning.

*... most of all, it depends on nutrition. In the family women eat irregularly; they don't take different vitamins.* [Woman, a laboratory manager. Group # 14].

*... the main cause for this is the lack of staple foods like honey and meat. For instance, an average family in our village consumes meat once a week. One kilogram of meat is bought only 1-2 times a month. Sometimes meat isn't bought at all. We don't have factories, manufacturing firms, and various factory shops where women could work. Most of them don't work. They only receive welfare. Husbands who don't earn enough or are unemployed mainly support their wives.* [Woman, a doctor's assistant. Group # 13].

*I want to say that inadequate nutrition leads to various illnesses. Newborn children often have anemia and thyroid diseases.* [Woman, a nurse. Group # 14].

*Sick women arrange sumptuous weddings, buy gold or fashionable clothes, and don't think about nutrition. They don't understand that they, first of all, need to think about their health. Weddings should be fairly small.* [Woman, a doctor. Group # 12].

*Anemia is prevalent because people have inadequate diets; in rural areas work is backbreaking. Mainly women and children suffer from anemia. There are no opportunities to have good diets.* [Man, a therapist. Group # 12].

*I advise people to eat raisins, apples, carrots, and liver. But patients themselves decide whether or not they will follow my advice. It depends on a patient's financial situation.* [Woman, a rural healthcare facility manager. Group # 12].

Most patients do not follow doctors' recommendations as most discussion participants asserted. This happens due to the necessity of choosing between buying expensive drugs for anemia or purchasing food for children. Naturally under such circumstances the second option is preferred.

*Because pregnant women suffer from anemia themselves they give birth to children already suffering from this illness.* [Woman, a midwife. Group # 14].

*... our women do not follow our instructions; they do not use the drugs that I prescribe. They come to a consultation and tell me that they do everything as I said but this doesn't have any effect.* [Man, a doctor. Group # 13].

Another main cause of anemia is women's reproductive behavior. They have intervals between childbirths that are evidently insufficient for women to recover and regain their strength. Lately, according to some participants, the intervals between childbirths on the whole increased from 1-2 years to 2-3 years. However, this period of time in rural families is not satisfactory either.

*...all this happens because women in Uzbek families have children without thinking about consequences, that is, about complications.* [Woman, a laboratory manager. Group # 14].

*The family should be planned. I give talks among people; I explain everything to them.* [Woman, a doctor. Group # 12].

Young women living in their husbands' families (with their in-laws) make up the largest number of anemic patients. This results from their active childbearing as well as the existing inequality in the family where women have the lowest status in the domestic hierarchy which does not allow them to have good diets.

*... in our families there are daughters-in-law that are shy before other family members, or mothers-in-law and fathers-in-law may be rude to them. In order to serve their in-laws, daughters-in-law get up early and go to sleep later than everybody. This, in my mind, also causes the disease.* [Woman, a doctor, 55 years of age. Group # 13].

*Men have good diets. And women don't eat because they think about children.* [Woman, a nurse. Group # 15].

Finally, some participants considered the poor ecologic situation which is present in the surveyed regions to be one of the causes of anemia. The discussion participants also complained about problems connected with the potable water supply.

*The reason is bad air.* [Woman, a laboratory assistant. Group # 15].

Thus anemia prevalence and the above listed circumstances that promote the illness make it difficult for healthcare workers to fight the illness. Evident pessimism, if not despair, was felt in most doctors' and other rural healthcare facility workers' judgments about anemia since for many years they have been unable to achieve any progress in combating this illness.

## **B. Recommendations to People Who Suffer from Anemia**

Recommendations to people who suffer from anemia basically include adequate and wholesome nutrition, as well as intake of iron supplements. When it comes to wholesome diets doctors cannot add much to what their patients already know. The main problem is that patients, due to their insolvency, cannot follow recommendations which under the existing circumstances at times sound like mere mockery.

*We recommend that people eat foods rich in carbohydrates and iron. For example, fish, beef, duck eggs, liver, and greens.* [Woman, a midwife. Group # 13].

*Under such conditions I recommend mothers and women who suffer from anemia, first of all to eat nourishing foods, to consume high- calorie, vitamin- dense foods; to take necessary medications at the appropriate time. [Woman, a nurse. Group # 14].*

Sick people are recommended to reorient their diets to include iron and vitamin fortified foods – apples, dairy products, and greens.

*I also advise patients to consume beets and potatoes prepared as vinaigrette and I see that this has been effective. Potatoes have a lot of iron, especially if they are boiled in their jackets. Beets and carrots also help. Besides, any family can afford them; these vegetables are inexpensive and available almost everywhere. Consumption of these products even without meat helps a great deal. [Man, a doctor. Group # 13].*

Normally, patients are prescribed iron supplements (e.g., Ferroplex), but their cost does not allow patients to realize a doctor's recommendations. Some doctors supposed that the reason for ineffective use of iron supplements and iron-fortified foods is that worms frequently occur in these regions.

*Worms inhibit the process of absorption and bowel functions. No matter how hard we try, iron isn't absorbed; it's wasted. Treatment becomes useless. There are many diseases that lead to anemia. For example, ulcer and goiter. A hundred percent of people who suffer from enteritis are anemic. In order to treat anemia a patient should go through "major repairs." [Woman, a rural healthcare facility manager. Group # 12].*

Finally, in the opinion of most doctors, consumption of meals with black tea which inhibits assimilation of iron makes it difficult to treat anemia and makes doctors' recommendations senseless. Therefore, some doctors recommend patients to quit drinking tea with food.

*We drink a lot of tea. Black tea contains a substance - tannin. Tannin is harmful. You can eat eggs, liver, and then drink tea. Tea breaks down all the iron and removes it from the body. Tea should be had an hour after a meal. [Woman, a rural healthcare facility manager. Group # 12].*

*As we were told during the 10-month training, people can consume any food, but only with boiled water, without the use of tea. [Man, a doctor. Group # 13].*

### **C. Use of Iron Supplements**

Iron supplements are often recommended, according to participants' statements, to people suffering from anemia. However, making recommendations is one thing and expecting that they will be followed is quite another thing. This is the main problem related to the treatment of anemia. Because of restricted financial circumstances most anemic patients do not follow doctors' recommendations hoping that they will recover on their own. Rural healthcare workers are aware of this fact, but they also know that they ought to recommend iron supplements.

*We do explain everything to them, but their children, for example, don't have shoes that they should wear to school. They should make their own choices. [Woman, a nurse. Group # 15].*

*Yes, tablets are expensive. Most women can't spend money on them ... Now, one pack of this medication costs 2,200 soums at drugstores. If a woman is sick she should at least take one course of the medication, but many women can't afford even one course of treatment. These medications are sold, but they are very expensive. [Woman, a laboratory manager. Group # 14].*

*... because of financial difficulties, most of our women try not to use tablets that increase hemoglobin level. We explain to them that if they don't use the tablets they may develop other illnesses, and only then some of them begin to take the medication. But on their own they don't take the tablets. They refer to us with questions of how they can be cured without tablets. [Man, a doctor. Group # 13].*

*Treatment for one patient costs 6,000 soums. One flask of medication costs 2,000 soums per month. Three flasks are needed for three months. Ascorbic acid should also be taken. This is an additional 3,000*

soums. Besides, it's necessary to have healthy diets. [Woman, a rural healthcare facility manager. Group # 12].

One more reason that complicates implementation of doctors' recommendations is the fear of side effects in the form of indigestion caused by iron supplements.

*These tablets affect the stomach. In spite of this, we recommend patients to buy these tablets. But what can we do? One can't raise level of hemoglobin only through eating certain foods.* [Man, a doctor. Group # 13].

*Some of them don't finish taking medications. They're afraid that the tablets will spoil their stomachs. They take the medication only for 10-15 days, although to be cured they should take it for two months.* [Woman, a nurse. Group # 12].

*When dosage increases the breath smells like iron, teeth become yellow, and diarrhea occurs.* [Woman, a rural healthcare facility manager. Group # 12].

In addition, in the respondents' opinions, iron supplements are very effective (especially Ferroplex). If treatment is completed then recovery will inevitably take place.

*Those who bought the medicine are especially satisfied with Ferroplex. They say it's very effective.* [Woman, a nurse. Group # 14].

*... the tablets really help; the results can be seen in 10-15 days.* [Woman, a laboratory assistant. Group # 15].

*I had a patient, Mamlakat. She worked at a factory. She had severe anemia. She was pale, felt dizzy, her blood pressure was 90/60, her hemoglobin was 30. We referred her to a hospital. But her mother said to me: please, treat her here. I'll do everything. She had to pay 5,000-6,000 soums. I prescribed to her the following treatment: one course of treatment was glucose, ascorbic acid, and Ferroplex. She began to eat eggs, meat, raisins, and apricots. In ten days she came to me – with rosy cheeks and vigorous. It's been a year since she recovered. She had a check up. Now she doesn't have anemia. She hasn't got married yet. She works at a factory.* [Woman, a rural healthcare facility manager. Group # 12].

In such situations some doctors use patient intimidation tactics by telling them that other ways to treat anemia besides iron supplements do not exist and that patients are at risk if they refuse to take medications.

*When a patient comes to a hospital, a doctor should explain to her when and how to take the tablets. If patients refuse to take the tablets, then a doctor should tell her that there is no other medicine which improves blood.* [Woman, a doctor's assistant. Group # 13].

*... we conduct explanatory activities among women, we explain to them that they will give birth to disabled children and that they will suffer during delivery. They take the medications under our observation.* [Woman, a midwife. Group # 14].

On the other hand, the respondents noted that in their regions other iron medications that are cheaper are available. These medications contain even more iron than, for example, Ferroplex, and their price is 6-7 times cheaper. Alternative tablets are called "sulfuric iron" and "iron sulfate."

*Upon the completion of a 10-month general-purpose training, we saw that tablets of temir-sulfate (sulfuric iron) more effectively treat anemia than Ferroplex or Ferromid. These tablets are prescribed for children older than 10 years of age, one tablet twice daily. Children younger than 10 years of age should take half of the tablet twice daily for four months. When this is done we observe that hemoglobin increases 1-2 times.* [Woman, a doctor. Group # 13].

*... there is one medication: it's cheaper and contains more iron and iron sulfate. It's very useful for the body. An individual can take it for one month; children should take it once daily, and adults need to take it twice a day. It takes two packs of tablets per two months. The medication costs 300 soums. Now most people take this medicine and it seems like it's working.* [Woman, a nurse. Group # 14].

*Iron sulfate contains more iron than Ferroplex. Therefore 2 tablets of Ferroplex are taken three times daily, and only one tablet of iron sulfate is taken two or three times a day. [Woman, a nurse. Group # 14].*

Iron medications are often prescribed to pregnant women.

*We advise pregnant women to take the tablets until their condition improves. If the medications don't have an effect, we recommend that they take a better medication. The main concern is that these tablets don't produce side effects. We also recommend taking the tablets before childbirth. [Woman, a doctor, 25 years of age. Group # 13].*

*These tablets are absolutely harmless for pregnant women. Daily they should take 120-180mg of iron. That is 3 tablets each containing 40 mg of iron. [Woman, a rural healthcare facility manager. Group # 12].*

*We recommend that postpartum women take Ferromid and Ferroplex tablets for two months. [Woman, a midwife. Group # 13].*

## VIII. GENERAL ISSUES OF NUTRITION

### A. Recommendations on Nutrition for People

All rural healthcare workers spoke about providing various recommendations pertaining to nutrition because this is one of the directions in which healthcare workers should work.

*Conducting explanatory sessions on healthy nutrition is our main objective. Rational nutrition is the basis for health, especially for pregnant women. We should be involved in disease prevention activities. A person should eat 80 grams of meat in addition to eggs and dairy products. But, unfortunately, Uzbeks don't drink much milk. [Woman, a rural healthcare facility manager. Group # 12].*

Recommendations, according to the discussions, differed. A lot depends on the people, on their desire to rationalize their nutrition and make it healthier. These suggestions include consumption of larger amounts of fruits and vegetables which are more easily affordable than meat and fish.

*Here we grow many vegetables and fruits. There are carrots, potatoes, cabbage, onions, cucumbers, tomatoes, radishes, and a lot of grapes. A great deal of wonderful salads may be prepared, but people are not accustomed to this. They rarely use fruits and vegetables. [Woman, a doctor. Group # 12].*

*Many people think that a good meal is one that consists of meat courses. In reality, meat can be replaced by other foods, for example, by potatoes, vegetables, fruits, and minerals. Once we worked with Americans and I saw what they eat. They eat little meat. I recommend this to others too, especially to people who suffer from hypertension and to ill women. [Woman, a doctor. Group # 13].*

*More fruits and vegetables and a moderate amount of starches. And oil should be eaten within reasonable limits. [Woman, a nurse. Group # 15].*

*We recommend them to consume all staple foods along with fruits and vegetables. For example, apples and apricots for healthy heart, and other fruits and vegetables. We don't recommend eating unripe fruits like grapes. [Woman, a nurse. Group # 14].*

*It's important to eat good food at the appropriate times. Take an onion for example – it has a lot of vitamins. You can thoroughly heat up oil, fry onions and eat fried onions with bread. This will be very useful. It enhances appetite. You need to eat more fruit; all fruits contain vitamins. We have a lot of fruits ourselves. It's important that a person take care of himself. [Woman, a nurse. Group # 15].*

Other suggestions were provided in such a form that they are impossible to follow. They include advice that doesn't consider the severe financial difficulties that people have. Thus, if in the regions where meat and fish are expensive and are hard to obtain, doctors recommended exactly these foods. Here are some examples of such recommendations:

*It has been said above that people should consume more vegetables and fruits. And also to consume as much meat as needed. We especially recommend consumption of dairy products and sour dairy products because they make the human body healthier. For example, especially now, during spring-and-fall periods we give advice to drink compotes made out of dried fruits and to eat pies and wild green plants. Besides this, we recommend people to eat honey and to anemic people we recommend to eat raisins. [Woman, a doctor. Group # 13].*

*More apples should be consumed, meals should be had on time, and meat, fish, and sugar need to be eaten. Light meals should be eaten frequently. Foods rich in vitamins should be consumed. [Woman, a nurse. Group # 15].*

*... I know that 100 grams of liver contain about 6-9 grams of iron. It would be really good if people ate at least 100 grams of liver a day. Rural people don't eat many meat products. [Man, 35 years of age. Group # 15].*

One more type of recommendation was the one related to abandoning the habit of drinking tea during meals. One of the discussion participants said that he learned, in courses for skill improvement, about the

damage that the habit of drinking tea during meals can cause, and now he enthusiastically recommends to his patients not to drink tea. However, despite rural healthcare facility workers' beliefs, recommendations connected with use of tea during meals are not made very often.

Accordingly, we may infer that although rural healthcare facility workers make recommendations concerning nutrition, they have little effect and doctors admitted this fact themselves. The reasons for this lie beyond healthcare workers' control (e.g., poverty of the population, conservative traditions, poor nutrition, etc.), as well as and the nature of the recommendations themselves which are seen as unfeasible.

## **B. Various Groups of Staple Foods**

### **1. Protein**

Everybody easily understood the word "protein," but the respondents preferred to use the word "albumin." Thus, albumins, in the participants' opinions, are contained most of all in the following staple foods:

- meat
- eggs
- legumes
- bread and flour
- potatoes
- milk and dairy products

Most participants asserted that albumins are crucial for the existence of human beings and for their health. But at the same time, no one mentioned what albumin deficiency may lead to, particularly, during pregnancy and lactation. This is a typical problem for rural multigravidas (women who have had multiple pregnancies).

*Albumins are as important for the body as air and water.* [Woman, a nurse. Group # 14].

*Albumin is a very important substance for health and for life. If our diets do not have enough albumin we might become unhealthy, feeble, and sickly. Let's say that different foods, fruits, and vegetables contain a variety of albumins. That's why a person needs to eat diverse diets. For example, if children don't take in enough albumins, they will suffer from growth lagging; women will become weak.* [Woman, a midwife. Group # 13].

*For the human body protein is the most important substance. Every organism consists of cells, and each cell needs protein. The mother is the source of nutrition for the child in her womb. The better diet the mother eats the healthier and more developed her child will be.* [Man, a doctor's assistant, Group # 14].

*Protein is albumin. Daily, albumin is present in our food, fruits, and vegetables. A human can't live without air, water, and without albumin either. That's because albumin is the source of energy.* [Man, a doctor. Group # 13].

#### **a. Starches**

The notion of "starch" was associated, first of all, with the following staple foods:

- potatoes
- rice
- bread, flour
- some vegetables (except for potatoes) and greens

It is interesting that none of the participants placed starch among carbohydrates. On the contrary, a participant gave the following answer to the moderator's question as to whether starch could be called a

carbohydrate: “Carbohydrates are a little different matter.” Most participants gave abstract answers like “it's very useful,” and “it strengthens the body,” when asked about the usefulness of starch. Only two participants mentioned starch, a widespread carbohydrate in nature, in relation to glucose, a simple sugar.

*Starch is also necessary for the human body. We read about this. Starch turns into glucose in the human body. We give glucose shots to people. This adds strength to people. [Woman, a doctor. Group # 13].*

*Starch is an organic substance. Simply speaking, starch produces sugar for the body. When sugar reaches cells it turns into starch again. For cells starch is an organic necessity. [Man, a doctor's assistant. Group # 14].*

## **2. Fruits and Vegetables**

When the roles of fruits and vegetables in human life were discussed, first of all, it occurred to healthcare workers that they benefit health and contain a lot of vitamins and other substances necessary for health. One respondent referred to the nutrition experience of Americans who worked with him.

*... most Americans eat fruits and vegetables. Fruits are digested quickly and provide vitamins that are necessary for human health. [Man, a doctor. Group # 13].*

*Vegetables are a necessary food for the body. A lot of various vegetables should be consumed. Vitamins play an important role in metabolism. We especially recommend giving various vegetable purees and mashed potatoes to four-month old children. Vegetables improve the functions of the intestines. We recommend patients to consume more vegetables. [Woman, a nurse. Group # 14].*

*... today nobody can imagine his life without vegetables. That's because we use vegetables in our daily diets. A person finds necessary albumins, carbohydrates, and starches from vegetables. If a person consumes insufficient vegetables he will develop vitamin deficiency, decreased immunity, will become susceptible to diseases. Most of our people grow and consume vegetables. We recommend patients to consume more vegetables. [Man, a doctor. Group # 13].*

*Vegetables are very useful for health. For example, carrots are a very useful vegetable. Generally all vegetables – carrots, potatoes, and onions – are necessary for the body. Vegetables also make food tasty. Different vegetables are rich in a variety of vitamins. [Woman, a laboratory manager. Group # 14].*

Some participants argued that fruits and vegetables can replace medications that are used for treatment of anemia.

*Instead of taking tablets, it's better to eat more fruit. Especially fruit rich in vitamin C. I heard that in the West great attention is paid to consumption of vitamins. [Man, a therapist. Group # 12].*

## **3. Oils and Fats**

The respondents knew little about oils and fats. The majority thought that fats – as it has been said about starches and albumins – “are very important for normal vital functions of the human body.” Fats were valued because they are rich in calories.

*Fats are the source of energy for the body. They improve functions of the body. Most of all we recommend consumption of vegetable oils because they are easily broken down and absorbed by the body. Animal fats are difficult to break down; this can lead to hypertension. And that's why I recommend using vegetable oils. [Woman, a nurse. Group # 14].*

Fats are contained both in animal and vegetarian foods. The respondents did not speak about daily consumption of certain fats, although they may have had a notion of this issue. Their ideas about consumption of fats were rather approximate.

*The more fat the person eats, the more he works. For example, people in our village are involved in hard manual labor. If they don't eat fatty food, they won't be able to do their hard manual labor. If you don't eat fatty food, it's going to be difficult for you to do hard work. Certainly, one shouldn't eat too much fatty food, because of gaining weight. This is one of the treatment methods. For example, one eats food*

*cooked in fat tail oil and eats a little bit of butter in the morning – this will not harm health; vice-versa, it will be useful.* [Man, a doctor's assistant. Group # 13].

*A person should eat fats moderately. The organism should receive daily 15-16 grams of fat. If you eat pilaf cooked in mutton fat and then lie down, blood vessels constrict and this causes infarction. The body assimilates vegetable oils much better. People who suffer from hypertension and diabetes are not recommended to eat a lot of fat.* [Woman, a rural healthcare facility manager. Group # 12].

Some healthcare workers stated that food cooked without use of fats would be tasteless.

*If vegetables are cooked without oil, they will be bland, and if vegetables are prepared with oil, if they are fried in oil, then they will taste wonderfully. Fat is necessary for the body too.* [Woman, a nurse. Group # 14].

There were some questionable statements regarding the role of fats in the vital functions of the human body such as the following:

*[Fats] improve bowel movements.* [Woman, a nurse. Group # 15].

*[Fats] are useful. For example, it turns out that almonds improve brain activity. And almonds contain many adipose elements.* [Woman, laboratory manager. Group # 14].

*[Fats] help to assimilate vitamins.* [Man, 35 years of age. Group # 15].

We would like to note once more that none of the participants, as well as nobody in the group of ordinary rural people said anything about the relation between the level of cholesterol and excess fat. Most likely this issue is not important for rural people.

#### **4. Vitamins**

The discussion participants said for vitamin C they recommend to patients that they consume the following staple foods:

- carrots
- onions
- tomatoes
- sweet peppers
- other fruits and vegetables that rural residents can afford

Certainly, vitamin C is also contained in other foods, for example, lemons, tangerines, almonds, but these are expensive products so there is no point in recommending them. Whereas recommending people to consume their meals with salads made out of greens and vegetables that they grow in their kitchen gardens would make sense, although, in the respondents' point of view, rural people are not used to eating salads so it will difficult to train them in this.

Fish is rich in vitamin A, but fish is very expensive nowadays; for this reason healthcare workers do not recommend people to eat fish because they know that these recommendations will not be followed. Therefore, the participants thought that in order achieve adequate intake of vitamin A, fruits and vegetables, especially carrots, may be recommended.

*I think fish is rich in vitamin A. People don't have money to buy fish, and fish is sold less frequently than before. It's good if people eat fish once a year, but sometimes they don't eat fish*

*at all. In the past there was a lot fish and it was cheaper. People consumed it. Now they don't.*  
[Woman, a doctor's assistant. Group # 13].

Healthcare workers' recommendations contained as much information as ordinary people know about staple foods that are rich in iron, for instance, apples, raisins, and meat products, especially cow's liver and tongue.

## IX. NUTRITION OF YOUNG CHILDREN

Opinions of the respondents regarding duration of breastfeeding differed. Thus, some of them asserted that children should be breastfed until they are three years old and that boys need to be breastfed longer than girls because they “need to be strong.”

*Children should be breastfed until they are three years old. Boys should be given breast milk longer than girls. Boys have to become strong.* [Woman, a nurse. Group # 12].

*Breast milk contains all the vitamins. In the past, mothers were recommended to breastfeed until children were one year old. Now it's recommended to breastfeed until three years of age. Practice showed that infant formulas are harmful.* [Man, a therapist. Group # 12].

*I think that children should be breastfed until three years of age, because the longer you breastfeed the stronger the child is.* [Woman, a doctor's assistant. Group # 13].

Other respondents thought that it was sufficient to breastfeed children until 2-2.5 years of age. In addition, all participants assumed that the longer the child is breastfed, the stronger s/he is.

*The longer the mother breastfeeds her baby, the healthier the child will be. Breastfeeding provides contraception for the mother. First of all this is prevention of unwanted pregnancy.* [Woman, a midwife. Group # 14].

*...the longer the child is given breast milk, the stronger s/he becomes. In my mind, it's normal to breastfeed babies until two years of age, the child develops normally, and the mother maintains her health.* [Woman, a doctor. Group # 13].

*My grandson was given breast milk until 2.5 years of age and he is a very healthy child. He didn't take any vitamins; he has good complexion.* [Woman, a nurse. Group # 15].

Infants younger than six months of age should be given nothing but breast milk – these were recommendations from others and from personal experience.

*Infants younger than six months of age need to take only breast milk. It's because at their age their digestion is very delicate. They can't eat anything except for breast milk.* [Woman, a doctor, 55 years of age. Group # 13].

*For a child under one year old it's difficult to be on any food other than breast milk.* [Woman, a nurse. Group # 14].

*I, for example, gave my child only breast milk until the age of 7-8 months; I didn't even give him water.* [Woman, 41 years of age. Group # 15].

Some participants supposed that this period should be extended to one year.

*Our grandmothers told us not to give children boiled water. They also told us to breastfeed every hour. If the mother has breast milk, then the child should be breastfed until he is one year old.* [Woman, a doctor. Group # 12].

*Supplementary liquids may be given once the child is one year old.* [Woman, a rural healthcare facility manager. Group # 12].

The merit of breast milk was evident for all participants. Infant formula feeding should be recommended only when the mother does not have milk, has insufficient milk, or is ill. Damage caused by formula feeding, from most participants' perspective, has become obvious lately.

*... formerly, we recommended to stop breastfeeding after one year; now we encourage mothers to breastfeed until the children are 2.5 years old. Scientists examined breast milk and found out that it has eight wonders. Children who were breastfed until two years of age fall ill less frequently. Formula-fed*

*children get sick more often. Thanks to long-term breastfeeding children suffer less from diseases as hypotrophy and rickets. Now our children are healthier than before. [Woman, a laboratory manager. Group # 14].*

*... when we observed children who were breastfed for a long time and noticed that these children, in comparison with other children who were breastfed less, looked stronger, healthier, and bigger. [Man, a doctor. Group # 13].*

*If a woman has insufficient milk, the child should be given supplementary foods. A two-month old child should take only 80 mg of milk daily; this is insufficient. I recommend to breastfeeding mothers to drink cow's milk, juice, eat apples and take ascorbic acid. [Woman, a rural healthcare facility manager. Group # 12].*

*... mothers whose milk is disappearing do not have sufficient milk for their babies. In these cases, they have to give liquids [formula]. For example, «Malysh», «Nestle» or some fruit juices. [Man, a doctor. Group # 13].*

Respondents stated that foods should be recommended to children younger than six months old and who do not take sufficient breast milk. In the first place, are juices, apples, squash, some mashed potatoes and carrots. They may also be given rice porridge cooked with cow's milk.

*Supplementary liquids such as apple juice should be given to children only in cases where they suffer from rickets (Woman, a rural healthcare facility manager, group # 12).*

*Different juices and apple puree may be recommended. We explain to them how to make them. They are very useful for children. [Woman, laboratory manager. Group # 14].*

*Mashed potatoes. Little bit of apples and carrots. [Woman, a nurse. Group # 15].*

*Mastava (rice soup), different soups. [All participants. Group # 15].*

*Children can be given cow's milk, rice porridge, and light foods. [Woman, a nurse. Group # 14].*

As a rule, according to the respondents' statements, mothers paid attention to their recommendations, but when they did not have breast milk, mothers had to break the rules of breastfeeding. In this case, healthcare workers advised them to be very careful.

*Most mothers listen to our recommendations. But in some instances some mothers have little breast milk or don't have it at all, or they fall ill. In these cases they give their children supplementary nutrition. Cow's milk should be boiled for a long time, then it should be diluted with water and then given to the child. [Woman, a midwife. Group # 13].*

## **X. INFORMATIONAL CHANNELS**

### **A. Channels of Information on Nutrition**

Regarding obtaining information on adequate nutrition, healthcare workers were, as expected, in a better situation than average rural residents. They have access to special brochures and books. Naturally, they make well thought-out decisions, although their financial situation is the same as that of other rural residents.

*We received information about nutrition during our studies at the institute. Besides, we read popular scientific literature about nutrition, and on television, for instance on ORT (the Russian channel) they make some good suggestions about nutrition. We take them into consideration. Besides that, a guest from America, Ms. Theresa, lived here. She advised us not to eat too much meat, and consume more fruits and vegetables. This really helped my brother; he began eating less beef. [Man, a doctor. Group # 13].*

The participants asserted that in their families serious contradictions related to what to eat and how to cook properly do not take place. The authority of a healthcare worker empowers them to resolve this issue on their own. On the other hand, they are under the pressure of circumstances; therefore, they have to cook what they have sufficient products for and not what is useful.

*We don't argue about food because I am a doctor. Of course, in some families people have to eat certain diets because of illnesses. We heard that such families argue about what to cook. Finally, they again refer to me. They ask me what to eat within their diets. [Woman, a midwife. Group # 13].*

### **B. Celebrities with an Image of a Healthy Person**

Healthcare workers' image of a healthy person differed insignificantly from that of other groups. Thus, most of them indicated Yulduz Usmanova who is very energetic on the stage.

*Yulduz Usmanova, for example. She sings and dances and can give two-hour concerts. And then she asks the spectators whether they're tired. [Woman, a nurse. Group # 15].*

*I can say Yulduz Usmanova is healthy. I think she is my age, but she looks younger. [Woman, a midwife. Group # 14].*

The main criteria for choosing "a healthy person" were the appearances of popular singers, television announcers, or sportsmen. Besides Yulduz Usmanova, the respondents also pointed to the Russian singers Pugacheva, Rotaru, Melnikova who "look very young." The list of "healthy people" included boxers Mukhammad Kodir and Artur Grigoryan as well as other sportsmen. The participants also referred to some journalists – Tolibjon Isroilov, Nasiba Kambarova, and others. The only difference was that one of the respondents diagnosed Yodgor Sa'diev in absentia:

*I am very sorry for Yodgor Sa'diev. I think he has a heart disease. [Woman, a doctor. Group # 12].*

### **C. The Most Popular Television Channels**

Most popular channels:

- «Yoshlar» channel
- UzTV-1 channel
- UzTV-4 channel

The most popular television shows:

- “Azizim”
- “Begoyim”
- “Davr” news program
- soap operas
- “Akhborot” news program
- some Russian television shows (ORT)

Among popular programs, the participants mentioned “Maslakhat” and some others. The respondents watch television, mainly in the evenings because they do not have time during the day.

#### **D. The Most Popular Radio Stations**

The most popular and accessible radio station was «Eho Doliny». The participants did not indicate other radio stations.

#### **E. Newspapers and Magazines**

The list of most popular newspapers differed insignificantly from that of other groups. Perhaps, they were only prioritized differently:

- Ferghana newspaper “Adolat Yuli”
- Ferghana newspaper “Forgone Shifokori” (“Ferghana’s Doctor”)
- Ferghana’s newspaper “Darakchi”

The respondents also pointed to newspapers “Tasvir,” “Hukuk,” the Russian newspaper “Argumenti i Fakti,” as well as the regional newspaper “Vodiy Yogdusi.” The participants were interested in special sections of newspapers, such as the medical advice provided by the newspaper “Fargona Shifokori.”

## **XI. CONCLUSIONS**

This report contains the results of focus group discussions related to understanding problems related to nutrition and anemia. Discussions were held with medical workers in rural healthcare facilities located in Ferghana Oblast. The discussions showed that healthcare workers who participated in the conversations (e.g., doctors and midlevel personnel) consider the problem of anemia to be the most pressing issue among the ones that we face today. In their opinion, there are considerable obstacles that hinder the solution of this problem in the near future.

The main obstacle is the poverty of most rural residents that does not allow them to plan wholesome and balanced diets. Although healthcare workers are aware that when lack of meat and dairy products in people's diets is present there will be little progress made against anemia, they still recommend that people use more fruits and vegetables in their diets. Due to the impossibility of adding sufficient amounts of foods to their diets or iron medications, most people do not follow healthcare workers' recommendations. Thus, they deprive themselves of opportunities to recover.

In the opinion of medical workers of rural healthcare facilities, rural people's reproductive behavior impedes elimination of anemia. They do not observe a long-term interval between childbirths in order to allow a woman's body to recover. Other causes for anemia are inequality in the family and bad ecology.

Iron supplements that are recommended to patients are too expensive for most of them; therefore, most patients stop taking them long before their full recovery. Alternatives to expensive medications, according to the participants' words, that are 6-7 times cheaper than the medication called Ferroplex for some reason are not used widely among people.

Thus, judging by the discussions, healthcare workers from rural healthcare facilities have to act carefully under extremely complicated circumstances, where little depends on their activities, and they often see that their efforts are wasted. The only direction that can be fruitful in such a situation is further activities connected with educating the population **as to choosing a strategy for balanced nutrition in the presence of financial difficulties.**

# ***Moderator's Guide for Conducting Focus Group Discussions with Health Care Workers***

## **1. Introduction (5 minutes)**

- I. *Introduction.* Hello. My name is \_\_\_\_\_ and I work at the Center for Social Research “Expert” located in Tashkent. I think that most of you didn’t participate before in the discussion that we are going to conduct. I would like to thank you for sparing some of your time for this discussion. Today we are going to talk about some issues that are related to your activities as healthcare workers.
- J. *Goal of the discussion.* Our main goal is to learn what YOU PERSONALLY think and know about the questions that we will discuss. I will not be an expert and try to teach you something; vice-versa, YOU WILL speak about everything you know and think. Besides your group there will be several other groups in different regions of Ferghana Oblast. Results of these discussions will be used to help improve the quality of your work.
- K. *Methods of conducting discussions.* Here are several main rules for our discussion.
- Our discussion will last for two hours and will be taped. My assistant will also do recording. This is done so that we will not miss any of your thoughts and ideas. I want to assure you that no one except for the research group will hear what you will be talking about today. Your last names and first names will not be mentioned in the reports.
  - There cannot be right or wrong answers during our discussion. We want to hear everything that you think based on your beliefs and experience. You do not have to agree with each other; you can express positive and negative remarks. If you do not agree with a speaker, please express your opinions. Feel completely free.
  - It is important that we hear everyone so, please speak loudly if you have something to say. We are taping the discussion, so please try to take turns when you speak, because only in this way will we be able to hear each speaker. Try to make your answers concise. The objective of this discussion is to collect various opinions.
  - I will not express my opinion. My role is to direct the conversation so that everybody has an opportunity to express oneself and be heard. If I interrupt you and go on to another topic, please do not be offended. We have many topics for the discussion and sometimes I will need to change topics quickly. We can talk more after the discussion, if you feel that we have missed something.
  - MAKE SURE THAT EVERYBODY KNOWS WHERE BATHROOM IS LOCATED. If you need to leave the room during the discussion, do not hesitate to tell me about it.
  - Do you have any questions?
- L. *Introduction of the participants.* I would like to go around and let everybody introduce themselves, tell us what they do, a little bit about their families, and so on. Please, let us start with ...

## **2. Anemia (25 minutes)**

- C. Let us talk a little bit about anemia. Is anemia the main problem for the health of the population to whom you render your services?
- If not, then what are the more important problems? Why?
  - If so, then why is it so prevalent? In your opinion, what are the main causes for the prevalence of anemia among the population to whom you render services?
- G. What do you recommend to people who suffer from anemia? Why do you recommend exactly this?

- Do you recommend them to take iron supplements (tablets)? If not, then why? Are these supplements (tablets) accessible in your village or somewhere close by? Are they sold?
  - In your opinion, are these tablets expensive for people to whom you recommend these medications? How much do they cost and how much does a family have to spend if they have a family member who suffers from anemia?
  - Do you think most people to whom you recommend these tablets buy them or not? Why yes and why no?
- H. Do you recommend these supplements (tablets) to pregnant women? Why yes and why no?
- If you do recommend, then what is the usual dose?
  - For how long do you recommend pregnant women to take these tablets?
- I. Do you recommend giving these supplements to young children? Why yes and why no?
- If you do recommend, then what is the usual dose? From what age do you recommend that children take these tablets?
  - For how long do you recommend that children take these tablets?
  - Do you recommend giving these tablets to children who are given supplementary nutrition during breastfeeding? Why yes and why no? If you do recommend, then what is the usual dose? For how long do you recommend such children to take these tablets?
- J. What do people you recommended tablets to say about tablets? [ELUCIDATE ANSWERS RELATED TO SIDE EFFECTS, ACCESSIBILITY OF THE TABLETS, HOW MUCH THEY COST, ETC.]

### **3. General Issues on Nutrition (30 minutes)**

- J. Let's talk about nutrition. Do you provide recommendations related to nutrition to people to whom you render your services? If you don't recommend, then why?
- If you provide recommendations, then what staple foods do you suggest that they eat and why?
  - Do people themselves ask you about adequate diets and about what foods they should consume? Do you often have to answer such questions?
  - In your opinion, do people listen to your advice on nutrition or not? If they don't, then why?
- K. Now we will discuss some substances that are contained in different staple foods. Let's start with the word "protein." What staple foods do you associate with this substance?
- Why exactly these staple foods? Where did you hear that they contain protein?
  - In your opinion is protein important for health? Why yes or why no?
- L. The next word is "starch." From your perspective, what staple foods are rich in starches?
- Where did you hear that these foods contain starches?
  - In your opinion, is starch important for health? Why yes or why no?
- M. What comes into your mind first when you hear the word "vegetables?" How important are vegetables for health? Why yes or why no?
- N. I would like to ask the same about fruits. What do you think about in the first place when you hear the word "fruits?" How important are fruits for health? Why yes or why no?

- O. Finally, we'll "oil" and "fat." What do you think about first when you hear these words? What staple foods contain oils and fats? Are oils and fats useful or harmful for health? Why yes or why no?
- P. What groups of staple foods that we discussed do you suggest that people eat more? Why?
  - And what food groups should be recommended to be consumed less? Why?
- Q. Now I would like to discuss vitamin C, vitamin A, and iron.
  - Which staple foods groups that you recommend to people are rich in vitamin C?
  - Which staple foods groups that you recommend to people are iron fortified?
  - Which staple foods groups that you recommend to people are rich in vitamin A?

#### **4. Nutrition of Young Children (20 minutes)**

- D. Now I would like to discuss with you the nutrition of young children. Until what age do you suggest that your clients breastfeed their young children?
  - Why exactly this age?
  - Until what age, do you think, children should take nothing but breast milk? Why exactly this age?
  - Do people follow your recommendations? If not, then why? [ELUCIDATE ANSWERS REGARDING ABSENCE OF BREAST MILK, ETC.]
- I. In what circumstances, in your opinion, should children younger than six months old be given supplementary liquids? What liquids should be given to children and why?
- J. Under what conditions, in your opinion, may children younger than six months old be given supplementary food in addition to breast milk? What first food would you recommend to such children and why?

#### **5. Informational Channels (20 minutes)**

- K. Let us talk a little about from where you receive information on proper nutrition and other issues.
  - Who in your family makes the decisions related to what you should eat? Why is the opinion of these people decisive? Do arguments pertaining to proper diet take place in your families?
  - If so, what are these arguments about?
  - Do you accept opinions of people who are not your family about proper nutrition? Whose opinion is important for you? Why?
- L. Can you remember a famous person, for example, a famous television commentator, a singer, a sportsman, a politician, or an actor who you think is a healthy person? Why exactly this person? How can you see s/he is healthy?
- M. What television channels do you watch more often? What shows on these channels do you like the most? What part of the day do you watch television and how much time do you spend watching it?
- N. What radio stations do you listen to? What radio shows do you like most? During what part of the day do you listen to the radio and how much time do you spend on this?
- O. Do you regularly read newspapers and magazines? If so, what newspapers and magazines do you read? When you read them, what sections do you like in newspapers and magazines?

## **6. Conclusion**

- C. That is all I wanted to talk about. Do you have any questions? Thank you for your participation in this discussion.