



Interactive Research

*Knowledge, Attitude,
Practices and Behaviour
Survey
to inform the Avian and
Human Influenza
prevention and
containment*



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SUMMARY

Avian influenza and danger of its turning into a human one, with possible pandemic ranges, is certainly a very serious subject in Serbia. The only way for improving the prevention, especially from spreading the human version is good information and adequate motivation of overall population and especially its highly risky segments.

Research of knowledge, attitudes and usual practice was done by quantitative and qualitative techniques. Field was realized in the first half of November and it included 1000 interviewed people of general population, 200 medical workers, 200 educators in primary schools, 600 pupils from elementary schools (III, VI and VIII grade) and 100 people of Roma population. Qualitative techniques are related to focus on general population and in-depth interviews with medical workers, journalists and Roma population.

The general impression is that everybody knows what avian influenza is, that people can be infected by it, but still it is not clear what avian influenza that is transferred from a man to a man is and how much that danger is real. It is logical, when we start from this, that danger from avian influenza is not seen as high and actual.

Children gave obviously different answers. Half of the participants children think that danger from the avian influenza is great. Their needs for additional information are reasonable and high. The most sensitive point is their behavior in contacts with live or dead poultry and birds.

Pretty bigger worry was also marked with Roma population, especially with those who live in unconditioned, temporary settlements. Risky behaviors (breeding of the poultry without corresponding precautions measures, procedure with dead chickens and poultry, preparing food from poultry or eggs, maintaining of the basic hygiene and similar) are not present more than expected, but from the aspect of this disease they represent a serious risk factor which needs to be worked out. According to expectations, very bad condition was recorded in unconditioned settlements: bad basic information, low hygiene, high risk from contacts with wild birds and poultry, not knowing the procedure of safe food preparing, narrow canals of communication.

The idea of mass disease transfer on people is still rather abstract. Answers on questions about the risk that avian influenza mutates into a version which is easily transferred from a man to a man-what makes this disease so serious, tell us about this idea. 10% of the participants was very frightened and 23% was worried. On the other hand, 40% was moderately worried, and half of them were interested in prevention measures.

Judging by the answers of all the groups, where medical workers show some differences, basic information on avian influenza from a year ago, as well as today, citizens receive through mass media. This can explain the high level of

general knowledge but relatively low degree of the essence of this appearance, especially the greatest danger - pandemic. Mass media can not neglect their 'commercial nature' and are not run only by interests of the citizens. Priority for the news in press is incidents that sell the newspapers. Commercial orientation towards earning money is unfortunately more important than informing of the nation. It means that informing in this area can not lean on media only. This is claimed by medical workers, as a specific population, but also by the children, who want information from doctors, parents and teachers who haven't fulfilled their tasks in the period up to now.

With Roma population, as especially sensitive group, especially those in unconditioned settlements, institutional communication was not efficient enough in the previous period, at least one third of them got the information on the markets and from friends. When we add to this their wish to receive the information in their own Roma language, than it is clear that the solutions must be far more flexible, with bigger participation of Roma population in action realizations, using their own language whenever possible, but numerous objective obstacles (income status on the first place).

For the needs of evaluation of the future activities, the research offered several significant parameters: a) dominance of information sources, as a quantified measure of the quality of information distribution, b) level of understanding of the phenomenon of avian influenza among birds, avian influenza transferred to people and avian influenza spreading among people, c) understanding of the precaution measures with preparing the food from poultry meat and eggs (present understanding is half completed) and d) understanding of precaution measures with poultry breeding, where the situation is most probably the most sensitive and the least qualitative.

Introduction

Avian influenza and the danger of its transferring into a human version, with possible pandemic, is certainly an extremely serious subject in Serbia. The research oriented towards recording and understanding of the relationship towards this disease today in order to develop the communication with citizens, especially on the subject of the prevention of this disease. At the same time, the research should also define the beginning parameters for the evaluation of the future communication with overall and with special public in order to measure the effectiveness of the undertaken activities.

The project task

The basic task of the research was the estimation of the existing level of knowledge on this subject, detection of attitudes and practical behavior which was risk when we speak about avian influenza and its possible human mutation (especially of the risky groups like children and Roma population are).

Some of the specific tasks of this research were:

- creation of the real picture of the level of knowledge, the existing attitudes and habits in behavior with general population and sensitive groups (children and Roma population), and with those who are oriented to the spreading of information (medical workers, educators and journalists)
- analyses of the difficulties and obstacles for promotion of the existing non-adequate habits, especially with risky population
- identification of the existing and wanted information sources, especially with categories of people who are not easy to approach
- setting the basis for adequate measuring of the result of the measures undertaken during the time

Methodology

The research plan included the realization of more research activities of the quantitative and qualitative character.

The first step was identification of the general population, medical workers (doctors and vets), educators in primary schools, pupils from elementary schools, Roma population and journalists. The following activities were included in order to fulfill the project task:

1. general population
 - a) F2F interviews within the households; 1000 participants
 - b) focus groups: two in Belgrade, one in Nis and one in Novi Sad

2. medical workers
 - a) F2F interviews; 200 participants (according to the number of citizens in three biggest regions in Serbia: Belgrade, Vojvodina and central Serbia)
 - b) in-depth interviews; 20 participants (Belgrade, Nis, Novi Sad)
3. educators (elementary schools)
 - a) F2F interview; 200 participants (according to the number of people in three biggest regions in Serbia, Belgrade, Nis, Novi Sad).
4. pupils of elementary schools (III, VI, VIII grade)
 - a) written test; 10 schools in 10 biggest cities with three classes in each schools
5. Roma population
 - a) F2F interviews; 50 participants in Belgrade and 50 participants in NIs
 - b) In-depth interviews with 10 participants
6. journalists
 - a) in-depth; 20 participants

Field work was done from 29th October to 12th November 2007, for all the mentioned participants categories. Focus groups were done at the same time on general population. In-depth interviews were done from 5 - 19th November 2007.

With general population there was a three level procedure: the interviewers received the defined starting point and the "step" OF 10 households in urban and 5 households in rural area. The interviewees were chosen according to the next, first birthday. If the first contact failed, the interviewers were obliged to visit the same home, before replacing it with another household, chosen by the standard way.

Participants in other surveys (N=200, N=100) were chosen by a random choice within each region and in accordance with the number of citizens in each region.

The choice of elementary schools was done in advance, so the presence of urban and rural schools was equal and all the regions were equally covered.

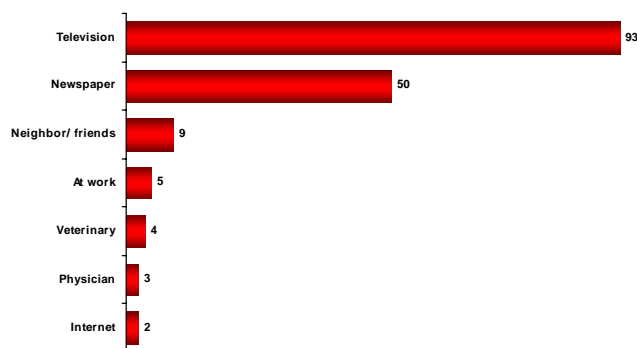
Recruitment of the participants of the focus groups and in-depth interviews was based on contacts made during the previous F2F interview.

RESEARCH FINDINGS

GENERAL POPULATION

Knowledge

It is a fact that almost 100% of the population in Serbia have heard about Avian Influenza. It is not a big surprise, since this subject was very serious and most important event last year. All media treated it very seriously, the danger seemed very close at that moment, and the public attention was huge.



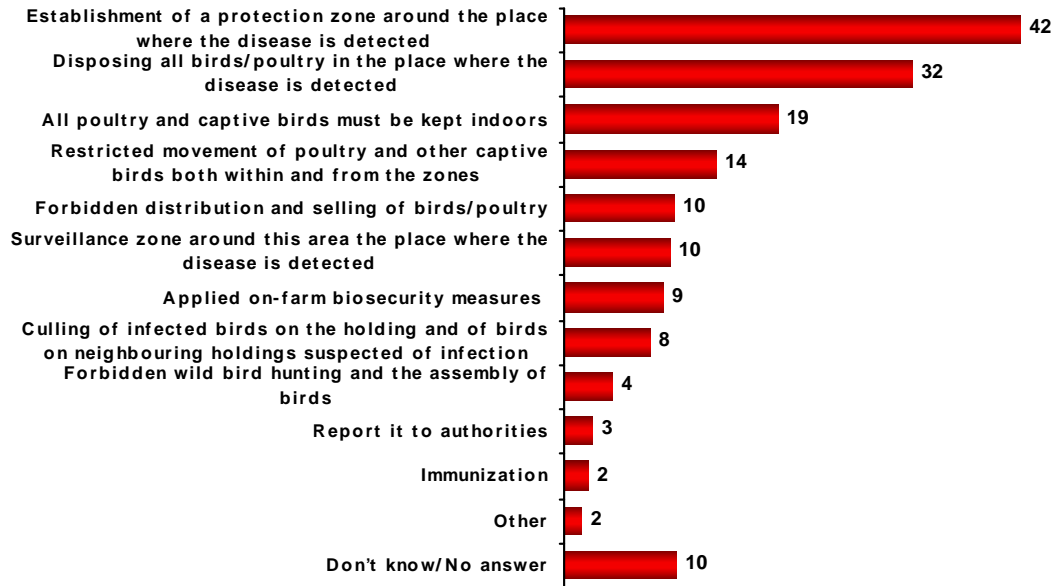
However, even in such a dramatic situation, two basic means of communication were only television and newspapers. Of course that these media were unavoidable because of the subject seriousness and because of the need for efficient and quick

action, but the absence of other ways of communication meant lesser quality of transferred messages like: smaller degree of the understanding, several important messages misinterpreted, forming of a few prejudices, which would make more difficult further process of communication in this area.

For example, knowing the way how birds can be infected by avian influenza is mostly based on contact with alive (60%) or dead (23%) infected bird. The possibility of transferring the contagion through fasses or water stated only 8% of the participants.

It can be said that a good picture of the quality of the received knowledge on avian influenza is knowing the symptoms of the disease: exhaustion (46%), difficulty in moving (21%) top the list, with bristled feathers (13%), food refusal (11%) and head falling (9%). On the other hand, 34% of the participants could not name any of the symptoms, especially people from 18-29 years of age, with 42% of the answers 'I don't know' or 'no answer'. All the other demographic categories (gender, age and region) were not significantly different from the average.

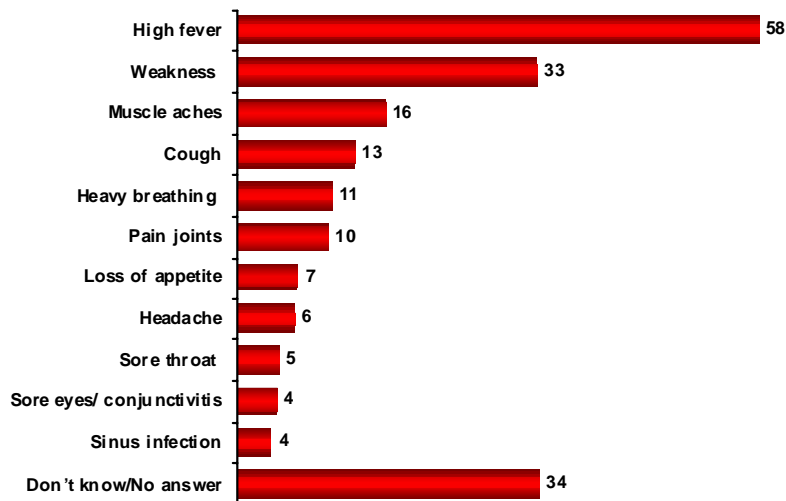
When we speak about the measures that should be undertaken in case of epidemics among birds and poultry, a great part of the population has a good knowledge. It is worth mentioning the answer “inform the authority in charge”.



Information on preventive measures was mostly received by TV (77%) and press (42%). All other ways of informing were rare.

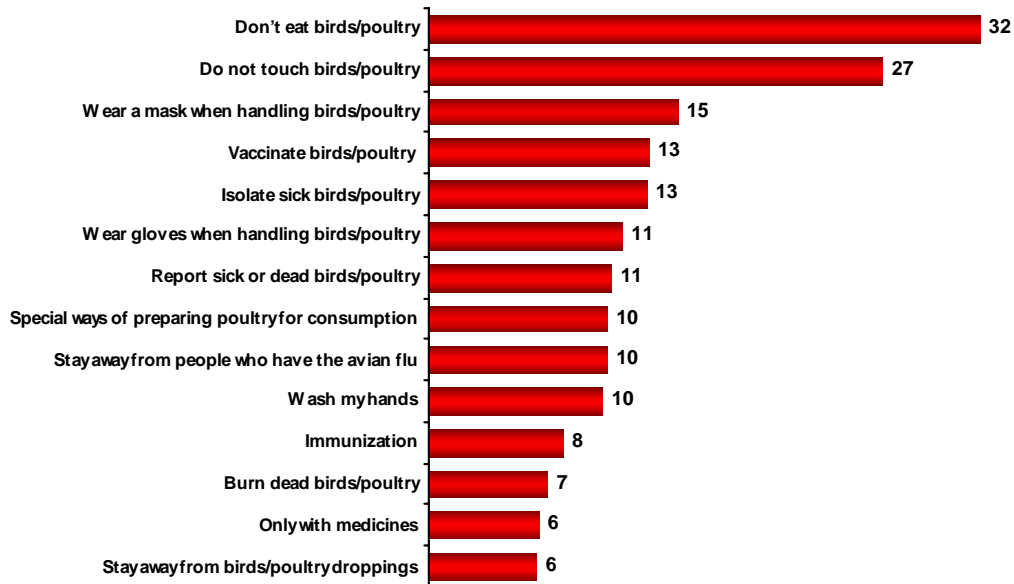
Avian Influenza on humans

90% of the participants confirmed the possibility of people getting avian influenza. Giving the ways of disease transfer, the answers were: contact with infected birds (60%) or poultry (42%), consuming the infected meat of the poultry (33%) or birds (29%), which is not a surprise. When we speak about symptoms, choice and ranking of the answers are correct.



Better answers were given in Belgrade and a bit worse in south-east Serbia. Younger population gave not so satisfactory answers, but close to average.

The great majority of the interviewees (82%) of those who have heard about avian influenza and think that people can be infected by it, also think that it is possible to be protected from this kind of influenza; it is 69% of all population. There are certain differences depending on the region, especially in south-east Serbia which has less knowledge than the other regions. The basic way of protection is prevention.



Still, enough number of people thinks that vaccination (8%) i.e., using of medicines (6%) is prevention from getting infected.

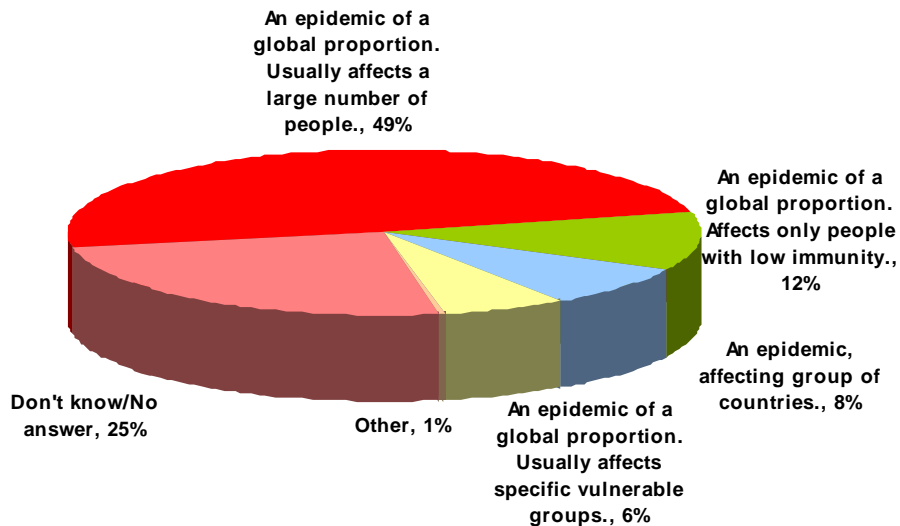
Those who think that it is possible to be protected from avian influenza, understand quite enough the measures that have to be undertaken with preparing poultry for consuming; poultry is mostly prepared by thermal processing on a high temperature, although there are some curiosities like 'by careful washing of meat', 'by cooking a bird together with feathers', 'by long boiling and throwing the water'. Of course, answers like these are rare.

Similar answers were given about eggs. Almost half of the participants think that long cooking is safe enough. Curiosity is an answer 'by washing eggs' (4%).

When we speak about prevention from avian influenza among people, television and press are almost the only mentioned sources of informing. General degree of informing is very high in Belgrade, a bit lower in Vojvodina and quite lower in west and south-east Serbia, where up to 30% of the participants has not encountered any information on this subject.

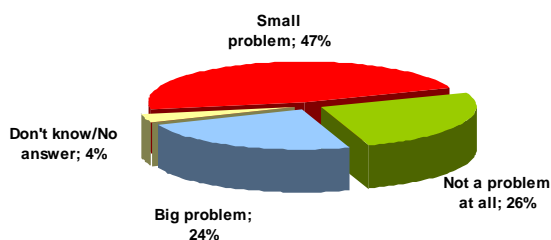
Pandemic

Knowledge on pandemic was tested by offered answers, which were very similar among themselves. All the answers mentioned world proportions, but the differences were connected to the population involved (all, sensitive groups, groups with low immunity). One fourth of the participants couldn't decide what offered answers to choose. One half recognized the right statement, but the last fourth considered that only some parts of the population were endangered.



The largest number of right answers was given in Vojvodina (35% correct) and south-east Serbia (43% correct). These two regions have the largest percentage of the answers "I don't know". Much better results were in Belgrade and west Serbia. Older participants were also less informed from the other age groups.

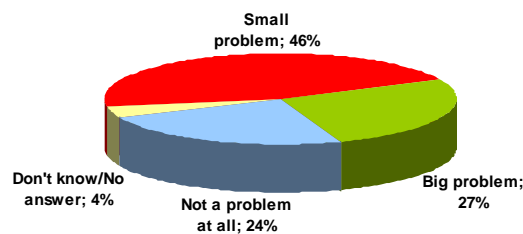
Attitudes



Only one fourth of the participants think the avian influenza is a 'huge problem'. The same number thinks that 'it is not a problem at all' and the rest of the participants thinks that it is a small problem. It can be said that the population has forgotten the seriousness of the situation only one year ago. This relaxed

attitude is probably the consequence of suppressing of such big threats, like avian influenza is, and this is due to a long break in communication with the citizens. This also means that the public is not prepared enough for the possible appearance of the same danger and that informing is the only way to keep the attention on a proper level.

This confirms the fact that on questions about the problem of avian influenza as the problem of the family of the participants, local surrounding or the whole country, similar answers were given: 'a huge problem' 23%, 27%, 30%, 'a small problem' 47%, 45, 46%, and 'no problem at all' 26%, 22% and 19%.

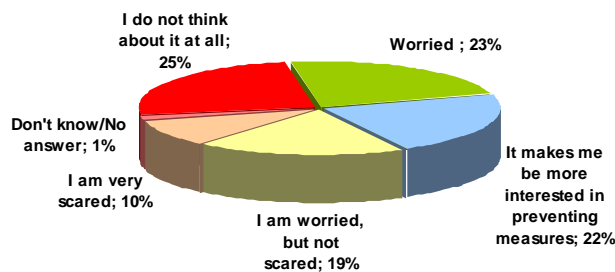


On a question how the problem of avian influenza which people were infected by is viewed, we received very similar answers: one fourth thinks it is a huge problem, the other fourth thinks that it is not a problem at all, and the half is somewhere in between-'small problem' for 46% of the participants.

As well as with avian influenza with poultry and birds, the participants don't see an important difference between the difficulty of the problem on a personal and collective level.

This similarity of the answers on a question of a disease only among birds or a disease which is transferred from birds on people, points to one more aspect of the problem: although the formulation about the essence of this disease is correct, the possibility of transferring the virus on people seems not completely seriously taken. Since the awareness on this is the base for the right understanding of the pandemic danger and the right attitude towards the prevention, this subject still needs a lot of additional explanations.

The fact that the idea about the massive transfer of a disease on people is



rather abstract is confirmed by the answers on questions about the risk that avian influenza mutates into a version which is easily transferred from a man onto a man - a fact that makes this disease so serious. There are only 10% of very scared of this, with 23% of the worried. On the other hand, about 49% is mildly worried, and only the half of them is interested in

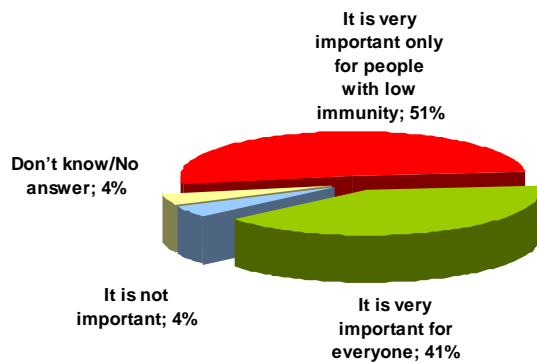
prevention measures.

The question who is most exposed to the risk of getting this disease, again shows that this disease 'happens to somebody else'. The largest number of the participants states that the people who breed poultry are under the greatest risk of getting the disease. It is probable that this picture would be different if the awareness of transferring the disease on people, first from birds, and then from a man to a man, was on a higher level. That is why only 7% of the participants stated that we were equally endangered and 9% that endangered were all those who did not apply the prevention measures.

On the other hand, when the subject is transferring of avian disease on people, when there are already infected people, 64% would accept the medicine therapy of 10 days, if that meant preventive protection. 285 would not accept this kind of therapy, less than 10% is sure they would not, which is more than one third of the population that still does not recognize the danger, even from the infected people.

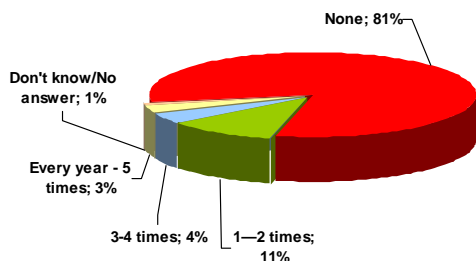
About vaccination

During the crisis a year ago, but also during the prolonged communication on avian influenza, the importance of vaccination against seasonal (seasonal flu) was mentioned several times in the sense of prevention from avian influenza. This attitude was not completely clear and this is shown by the answers of the participants.



We asked about the importance of the vaccination as usual behavior, which would show more responsible attitude towards health. All of them, of course, heard about the vaccination against the seasonal flu (except some small number of the participants), but their understanding of the

usefulness of vaccination was divided: less than half think that vaccination is useful for all people, the other half is better informed and knows that vaccination is recommendable to people with lower immunity.



On the other hand, only small number of people is regularly vaccinated; only 95 has been vaccinated several times or once during the last five years. If we assume that there is socially

desirable behavior in these answers, then the condition on the terrain is even weaker.

Unfinished story about vaccination left one small part of the population convinced (in dilemma) that it can be used in prevention from avian influenza (5% strongly states; 15% is indecisive).

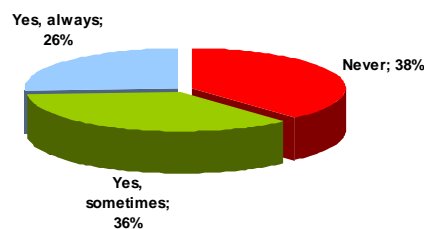
Practice

Since the biggest danger from avian influenza comes from domestic poultry, one big group of questions was into the behavior of people who bred and consumed poultry.

It could be said for us that we are great consumers of the poultry; 55% does that often and 40% sometimes. Differences in demographic aspects are not big.

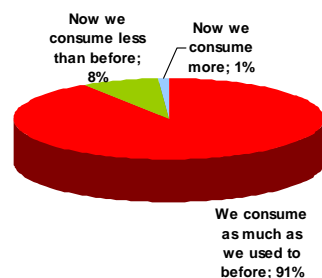
Almost the identical picture goes for the consuming of eggs, with a little less consuming in Vojvodina. According to this, we are all potentially endangered if do not stick to the strict rules in crisis. It is very important to have a clear picture about our usual behavior and habits which can mean the infection risk if we want the rules to be usable and efficient.

In that sense, the practice of preparing the poultry is very important. On the level of the whole population, the half prepares poultry for eating and the other half does not do that. Of course, preparing of poultry is 'traditionally' woman's job, but it is less connected to young housewives.



When we speak about preparing, which can enlarge or lessen the risk of infection, the main is frying (84%), roasting (64%), then boiling (35%). It is probable that in the first two cases the critical temperature can be reached, which means less risk from maintaining the viruses. The problem is that it is a habit to taste the meat before it is prepared completely: always tries 26% and sometimes 36%. So, almost two thirds of those who prepare poultry can be exposed to contagion due to consuming the meat that is not thermally processed.

completely: always tries 26% and sometimes 36%. So, almost two thirds of those who prepare poultry can be exposed to contagion due to consuming the



It is a fact that the crisis from last year did not influence much the range of poultry meat consuming with us (syndrome 'it happens to

others'). The situation is identical with egg consuming: 93% did not change their habits.

Poultry breeding

How many people actually breed any kind of poultry? The next questions are on this.

Less than 30% of the population in Serbia breeds poultry. The least in Belgrade (8%), while in Vojvodina and central Serbia it makes one third of the whole population. Almost all of them breed chickens (97%), ducks or geese 13% (double more in Vojvodina than in central Serbia) and 22% turkeys (a bit more in Vojvodina than in other areas).

The great majority of those who breed poultry believe that the poultry can be protected from avian influenza (78%); a bit more in Vojvodina (84%) and south-east Serbia (81%), and a little less in west Serbia.

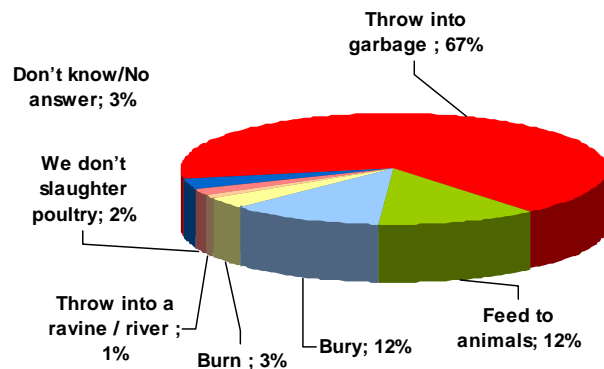
When we speak about the way of breeding poultry the situation is like this: 39% of poultry is bred in close space, 61% in open. So this risk factor is certainly emphasized. During the night the situation is better: only 13% of the poultry is in the open. The curiosity is that 8% of the participants breeds poultry inside of the house! It mostly goes for those who live in Belgrade.

About the half of the participants estimates that the poultry is in touch with wild birds, mostly sparrows and pigeons, and in smaller number swallows and crows. Contact with other wild birds is minimal.

Poultry is mostly bred by women (78%), but 63% of them maintain the chicken coops. It is interesting that this situation is the best in Vojvodina.

Collecting eggs is again woman's job: 79% women, 20% and children in the lowest percentage.

Half of the participants claims that they wear protective clothes for the work in a chicken coop. Differences in age and regions are interesting.

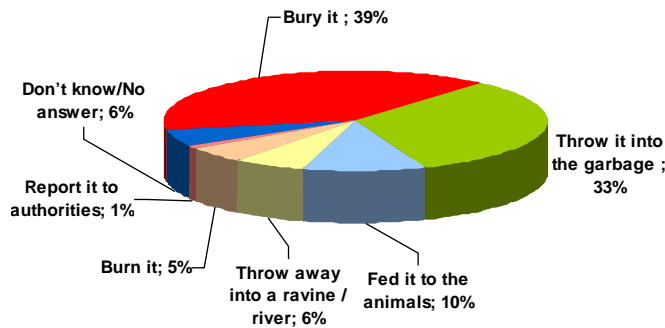


A bit bigger percentage claims that they wear protective shoes. 91% claims that they wash hands after visiting the chicken coop. All these can not be satisfactory enough, especially in circumstances of increased contagion risk.

One more category is connected to waste disposal after poultry slaughtering. Here we have a present risk, especially when we speak about using the waste for 'animal feeding', or when it is 'disposed', unless there are some special precautions measures undertaken.

Ceasing with poultry breeding, as a possible measure for contagion prevention, will not mean decreasing in home budget. More than a half (55%) thinks that the home budget would be partially decreased, and only 16% think that it would affect the home budget a lot. It would be the least decreased in Belgrade and the most decreased in south-east Serbia.

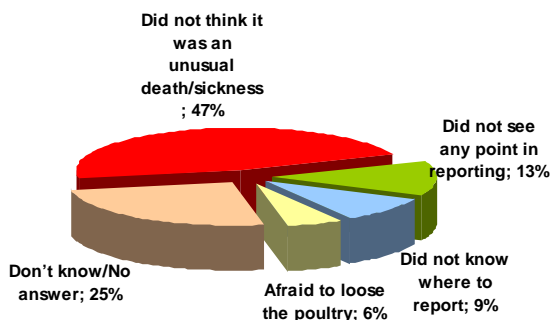
The last subject in connection with practice is the procedure in cases when poultry dies. In the last six months, only 13% of those who breed poultry had cases of dyeing. The procedure in these cases would be:



Practically nobody reported dyeing of the poultry to the authorities, even 10% fed the animals with dead poultry, one third threw them into the garbage and 6% threw them into the river! In any case, at least one half of the cases represents risk behavior, even in a situation when a breeder estimates that 'dyeing was not atypical', as it was heard

during the questioning.

Regional age limits are very important when we speak about this problem and they are worth to be considered separately. Men throw poultry more often than women; in Belgrade they bury dead poultry and in south-east Serbia they just throw it away into the garbage. Only older participants feed animals with dead poultry, in all regions except Belgrade and mostly women.



Even almost half of the participants did not report the case of dead poultry to the authorities, when directly asked they answered that they would probably report the case to the authorities. This statement must be taken with great reserve. The reason that the participants did not reported the cases of dead poultry is very indicative: with not

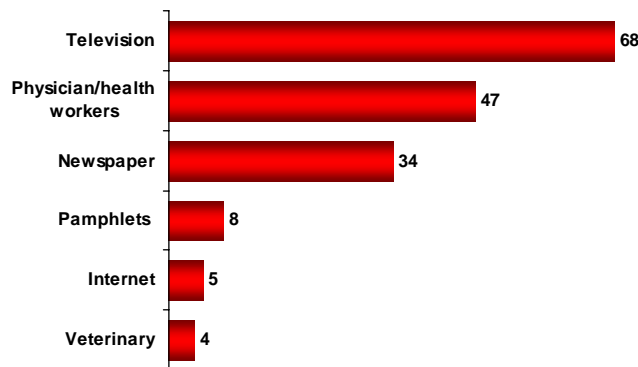
understanding the reason for reporting (13%), not knowing who to report the case (9%), we must pay the attention to those who did not want to answer (25%), because it is almost the half of the population that certainly would not report dead poultry in any case. It is possible that at this moment the situation is connected to the lack of the acute danger, but viewed from the point of 'preventive capacities', the real behavior of poultry breeders is serious risk factor.

When we view the whole population, the condition is similar, but breeders must show more responsible behavior. 41% of the whole population would do nothing if they saw a dead bird, 36% would inform the local authorities or a vet. Different answers from these were rare.

One of the consequences of facing with avian influenza is indisputable: 11% of the citizens wash hands more often after the cases of avian influenza.

Informing

When we asked about the ways of informing about avian influenza lately, the answer were expected: mostly TV (77%) and press (40%). Other ways of informing, except from mouth to mouth, were practically inactive.



TV and press remain the most efficient mass media, but doctors are also highly positioned sources of information, as the greatest authorities in these areas. Brochures and internet are rare, and other options are not worth mentioning. So the situation is not satisfactory when we

face with the mentioned answers of the participants about the best ways of getting this information.

There are differences on this subject in different regions. We mention them as potentially useful information for the needs of organizing the future informative campaigns.

When we speak about the content of the wanted information, the most often subject is the way of protection, i.e., circumstances in which the man can be infected, then symptoms and behavior in case of appearance of the symptoms. One fourth (25%) thinks that additional information is not necessary.

Educators and teachers in primary schools

Knowledge

Educators got the information on avian influenza through TV (98%) and press (76%), rarely through schools, friends, doctors and internet.

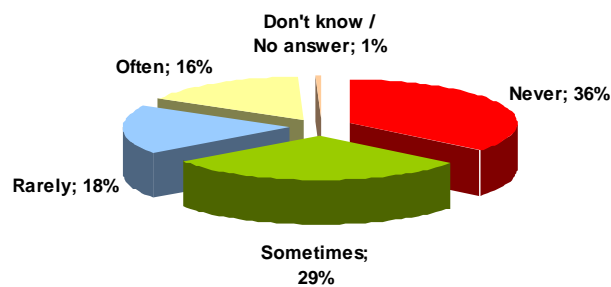
8% of the educators don't know how avian influenza is transferred, 4% gave wrong explanations, so it makes 14% of the population that does not know anything on this matter. When we speak about symptoms of a disease with poultry, exhaustion takes the first place (59%), difficulty in moving (30%), difficulty in breathing, cough and sneezing (20%), refusing food, bristled feathers and head falling.

When we speak about ways of prevention, educators are informed; on the first place is isolation of farms and preventing the contact with wild birds.

Attitudes of educators are especially important with informing children about avian influenza. Half of them claim that there has never been such an interest which is pretty different from the children's attitude. 36% of the participants claim that there were a small number of interested children and only 20% claim that the interest was significant. Better situation than this is in Belgrade and with younger population of educators (39 years old).

Educators transferred information on avian influenza to children more than the children were interested, but not all of them and not often enough.

If it is assumed that answers 'yes, sometimes' and 'yes, rarely' unreliable, we can say that 16% of the participants claimed that they transferred information on this subject to pupils. If this is true, than this is one of important risk factors.



Educators know that people can be infected with avian influenza without an exception, by touching the contagious poultry and birds, i.e.,

by consuming the infected meat. The curiosity is that 9% think that people can get infected from already infected people, which is not true, but indicative for the canals of informing and the level of worry on this subject.

Symptoms of avian influenza with people are analogous with symptoms of a seasonal flu. Of course the course of a disease is different and complications potentially fatal.

The ways of protecting people from avian influenza are also logical; not to touch and consume poultry and eggs, to have protection when in contact and preparation for consuming must be done with special measures of precaution. There is again the attitude that infected people should be avoided (21%), i.e., that the solution is to vaccinate the poultry (15%), which leads that there is a considerable level of worry (and fear), but that there are also prejudices.

Precautions connected to preparation of food are analogous with the answers of the population in general. If we speak about meat than the solution is a very long boiling (at least 10 minutes). On the other hand, 11% think that there is no protection if the food is consumed, and 12% does not know how to protect in this situation. We also have a curiosity here that washing eggs is one of the ways of protection when consumed, which is not only incorrect, but also potential with consequences.

Avian influenza on humans

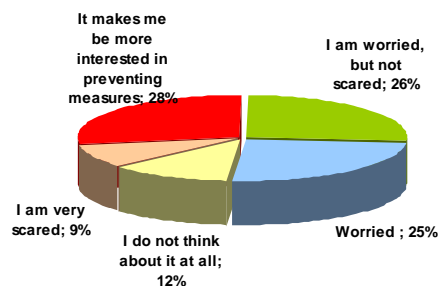
Educators informed themselves about the prevention from transferring the avian influenza on the same way like the rest of the population, through TV and press.

Were the children interested in the subject when avian influenza hits people, educators estimate according to the level of interest for avian influenza with poultry and birds – only 20% claims that the majority of children were interested in this. This level showed that they did not make a difference between avian influenza among birds and avian influenza among people.

Pandemic

The correct definition of pandemic was recognized by 72% of the participants to 49% with the population in general. 10% think that this happens only to sensitive groups and only to people with low immunity 6%. There is a certain difference to a gender, age and region.

Attitudes



Only 9% said that they were very frightened, but the majority of the population was worried and interested in measures of prevention, while half of this does not think about this at all.

Although the conscience of the educators is on a higher level than the average, only 20% of the participants think that avian influenza with people is a huge problem for them and their surrounding, while with general population that percentage is 27%. 62% think that it is a small problem, while 46% of the general population shares the opinion, 15% think that this is not a problem at all. So, educators are obviously less indolent, but they think that transferring the disease on people is not so dangerous.

About vaccination

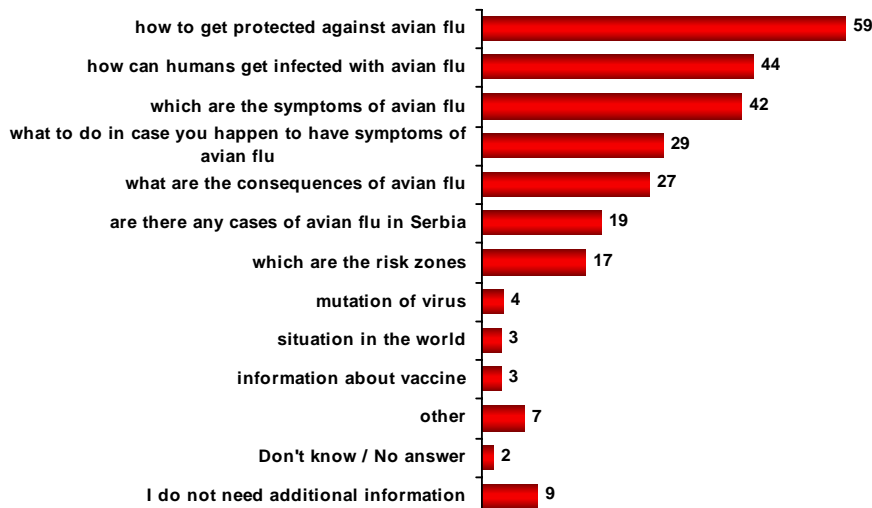
Almost all educators know what the vaccination against the seasonal flu is, which is quite expected. Two thirds think that the vaccination is the most useful for people with low immunity. Only one third has the wrong attitude. Almost all know that seasonal vaccine protects only from seasonal flu. 3% think that seasonal vaccine also protects from avian influenza.

However, educators do not have the habit of being vaccinated. 5% have regularly been vaccinated in the last 5 years, which is bit lower percentage from the general population.

Practice

The practice of consuming the poultry meat is very important because it is potentially the greatest risk for spreading the avian influenza on people. In this sense, the behavior of educators is not different from the general population. 59% regularly consume the poultry meat, 38% occasionally; 51% regularly consume eggs, 46% occasionally. 90% did not change their habits when avian influenza appeared, and only 10% lessened the consuming of poultry meat and eggs. So, we can conclude that there are no significant differences in this field between educators and the general population.

Informing

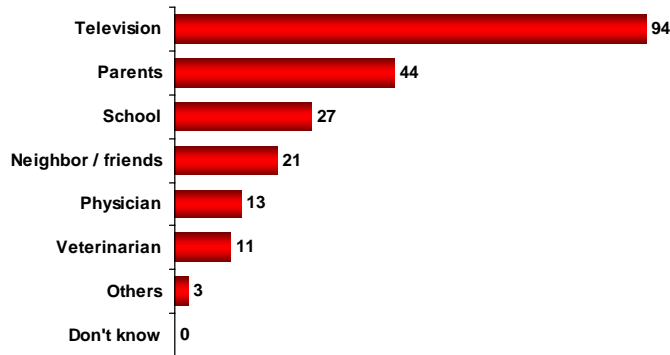


The way educators are informed about avian influenza at the moment is through TV, then press, and only 8% mentioned internet and informing in schools. In this case these are not the most convenient ways of informing. Educators prefer informing in schools, from doctors and vets, but also lecture in health institutions and brochures. The type of information they consider the most important is:

Pupils in primary schools

Knowledge

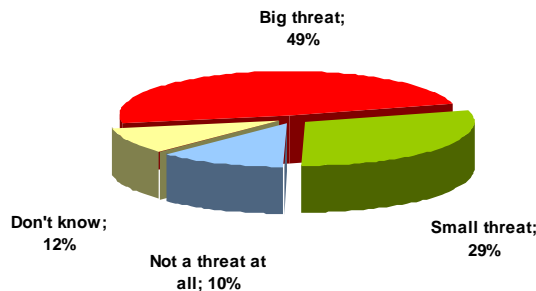
Children have heard about avian influenza without an exception. The difference in informing is big



because they are informed mostly through TV, parents and schools.

90% of the participants know about the possible infection of people with avian influenza.

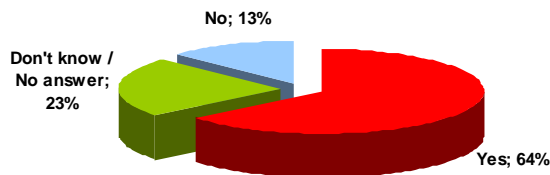
Children show the highest degree of worry about avian influenza, even at the level of this disease only with poultry and birds. Almost half of them think it is a



huge problem, which is a lot more than with general population and educators. And the number of those claiming that it is not a problem at all is two times smaller than with previous groups.

The worry is a bit bigger with younger participants and with the participants from central Serbia.

Children are convinced that avian influenza can be transferred from an infected to a healthy person; 79% think so and only 8% know that this is not the fact. Even in Belgrade the percentage of wrong answers is almost 90%. In general, it



is bigger with younger participants group. It is possible that the wrong picture is the reason for a lot bigger worry about avian influenza.

64% of children answered that avian influenza can become humane influenza; this answer gave 77% of the children from third grade,

55% from eight grade, but with a lot more answers 'I don't know'. 13% gave the right answer with all the categories, and it was bigger in Belgrade than in Vojvodina and central Serbia.

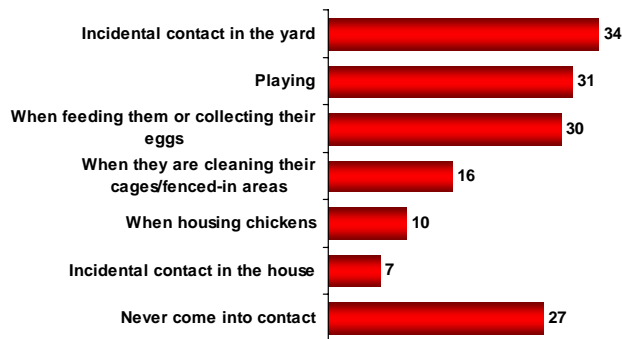
There is awareness that avian influenza with people is much more dangerous than a seasonal flu. 80% gave a positive answer (90% in Belgrade). It represents a great threat 53% and only 10% claim that there is no threat, which is again a much bigger degree of worry than with the adults. The youngest population is the most worried, almost 70% of the children from the third grade.

Vaccination

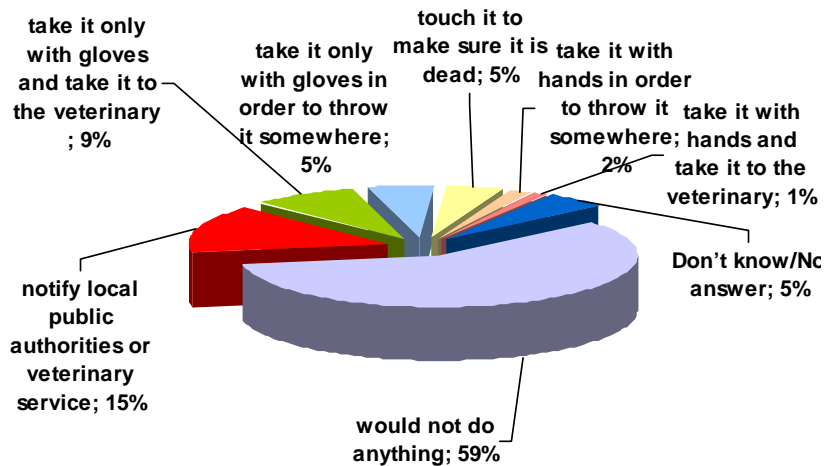
The biggest number of pupils heard about the vaccine against a seasonal flu, 81%, less than an average with young children, and more than average the oldest. That result was almost 100% in Belgrade and out of Belgrade, about 75%. Even a large number of pupils know that this vaccine does not protect from avian influenza. These results are different for age groups and regions.

Practice

Children get in contact with poultry most often when playing or accidentally, and in smaller number while feeding the poultry or when maintaining their coops. There are differences in age and regions and they can be important for planning the communication strategy:

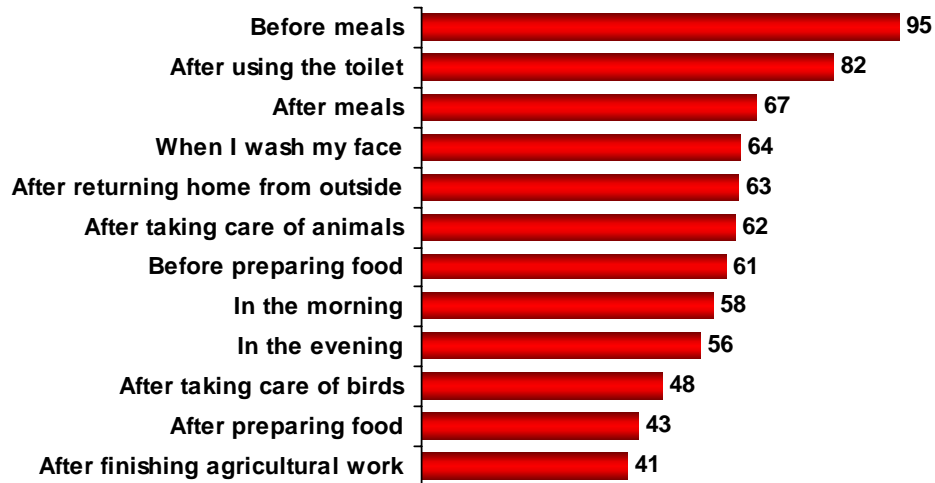


If it is correct that a great number of children get in contact with poultry or birds, then it is very important what they do in touch with dead poultry (birds):



Differences in answers are more important in regions: 75% of the answers in Belgrade were 'nothing', 18% 'to inform the local authorities'. 15% and 20% of children in Vojvodina and central Serbia take a dead bird with gloves, either to throw it or take it to a vet.

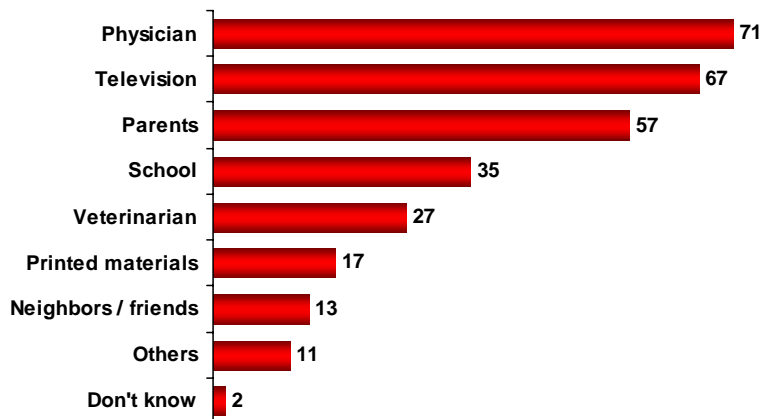
One of preventive measures is certainly hand washing. Children are very correct in this field, even if we assume that a part of the answers was not honest.



Differences in age and regions are not significant, except that children in Belgrade wash hands before meals (almost 100%) and after the toilet (90%). Washing hands using the soap is dominant (almost 100%), and washing only using water is marginal out of Belgrade.

Informing

We can say that the level of knowledge with children is quite high, but there is a fact that they view dangers from avian influenza in a wrong way, at least when we speak about a man to man transfer. Maybe we can take into consideration



that on this subject being too worried is more useful than harmful.

Future communication with children from primary schools should respect the canals of informing that

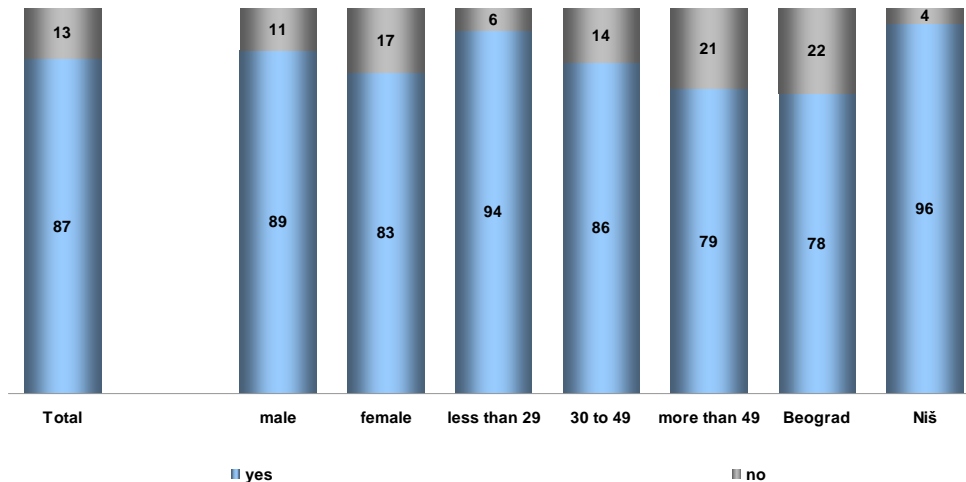
children take as the most important. If we exclude TV as the most powerful, other main carriers of information for children are doctors, parents and then school. There are no great differences in this field according to the age and regions, except that the need for informing is more emphasized in Belgrade.

Roma population

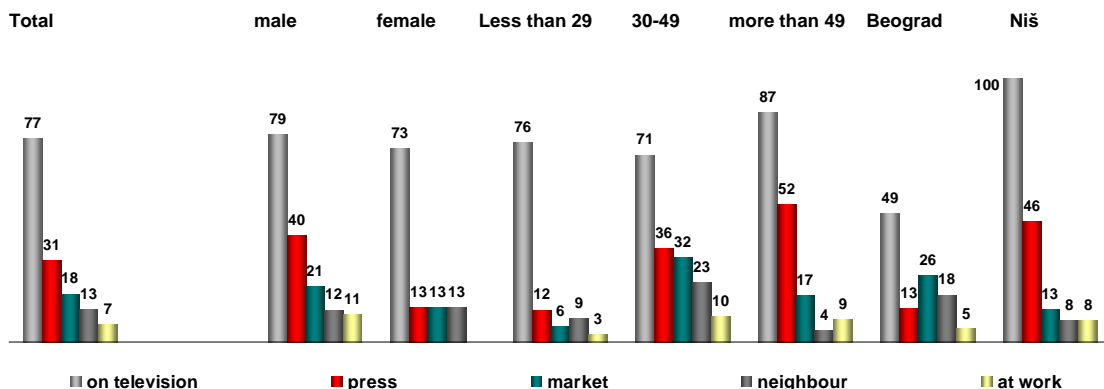
Knowledge

Interviewing the Roma population is always complex, because it is divided into two subgroups with a very different lifestyle and attitudes: the first group are those integrated in the local community and the second are those without a resident permit, live in improvised accommodation with very bad conditions of living, especially hygiene, children mostly do not attend the school, the majority is unemployed so the incomes are under the minimum.

This research included both groups: in Belgrade, Roma from the second group (from temporary, unconditioned settlements), and in Nis, Roma from the first group, who are mostly integrated into a local community. This is very important because of some very different attitudes on some questions.

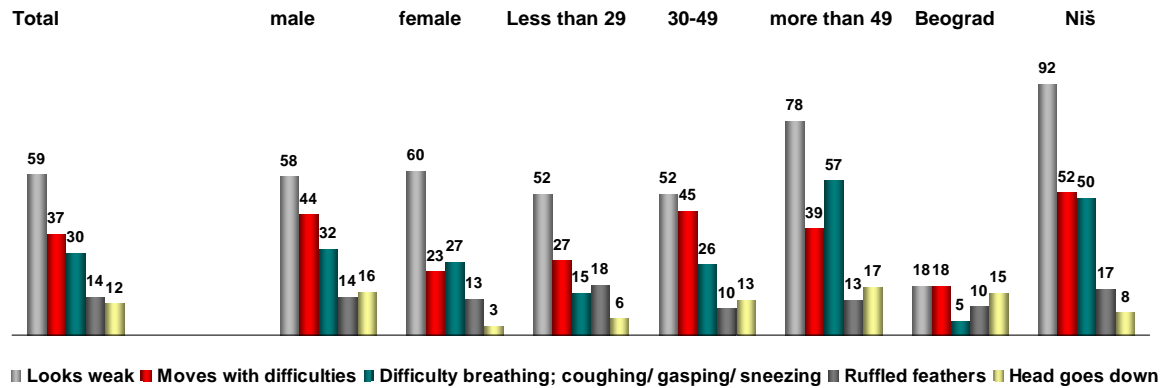


The great majority of Roma heard about avian influenza, 85%, but there are differences in answers in subgroups: They heard about avian influenza through TV and press (smaller number than the overall population), but important sources of information were also markets (18%) and friends (13%). Here we also have significant differences in subgroups.



Knowledge on spreading the disease among birds is correct, 69% mention contact with poultry and birds, 29% mention “through water”, 17% mention contacts with dead birds and poultry. Again, the group in Belgrade has weaker answers.

The similar situation is with question about the symptoms of a disease. Differences between Nis and Belgrade are huge:



The majority of the participants think that the poultry can be protected from avian influenza. Three ways of protection are dominant: keeping in closed space (66%), saving water from pollution (44%) and poultry vaccination (31%).

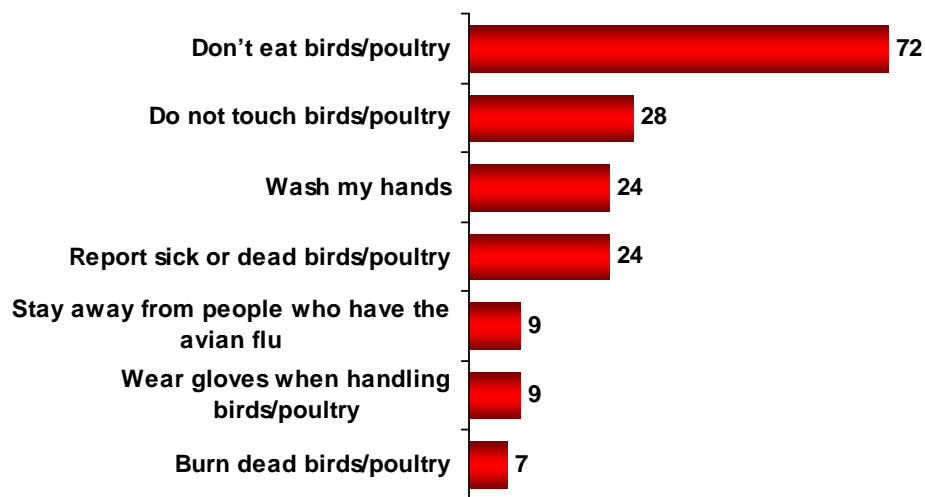
60% of the participants think that they can be infected by avian fly, while 33% don't know the answer on this question. Differences between Nis and Belgrade are small here. There is a great difference in age categories. 73% of the younger know about the possibility of transferring the disease on people, and only 39% of the oldest know this.

The ways of infecting the people are connected to touching the poultry and birds, and the smaller number mentioned consuming the meat of poultry and birds.



This question also points the differences between two groups. In Belgrade, one of the biggest sources of contagion is touching the dead infected birds, because it is probably the reality of the conditions of living of this group. In Nis, the biggest source of contagion is the contact with live, infected birds, then consuming of not well prepared meat of the infected poultry.

The great majority understands that a man can be infected by avian influenza (89%). Only 12% from the Belgrade group think that this is not possible. When we speak about the protection of people against this virus, the picture is not clear:



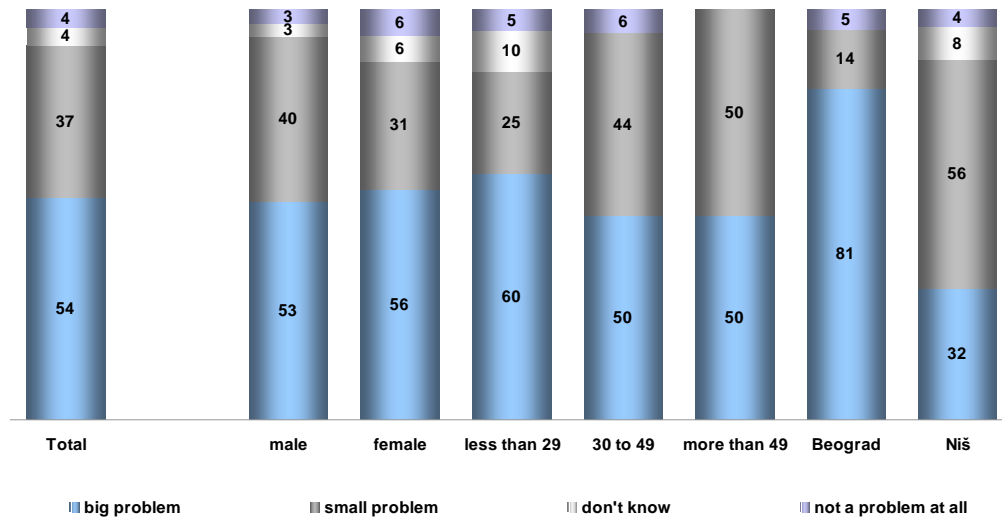
The only safe way is not to consume the meat of poultry and birds.

The same goes for the safe ways of preparing the poultry for consuming. The safest way is not to consume it. Only 4% mention boiling at 100 degrees. Belgrade group practically does not have a concrete answer on this question- they don't know how to prepare the poultry in a safe way.

Similar answers are given on egg preparing. The majority says – not to consume eggs. Only 145 know that eggs are safe for consuming after long boiling (until completely cooked). 225 claim that there is no safe way for preparing them. It is interesting that the group from Nis completely supports the idea not to consume eggs in case of an infection.

Attitudes

Avian influenza with birds and poultry is already a huge problem for 54% of the participants. Similar degree of worry is shown only by the pupils in elementary schools. Only 4% claim that it is not a problem at all. Differences between the groups are huge and are worth considering:



The distribution of answers is similar when estimated the seriousness of the problem for the family of the participants, local community or the state.

The answers are similar when we speak about the category of avian influenza among people. It certainly means that there is no evident difference among dangers for an individual, for local community and for the economy when we speak about avian influenza among birds and poultry and its transfer on people.

Practice

Two thirds of the participants say that they would take the therapy for the preventive in case of avian influenza with man (a ten days' therapy), a little less than one third say that they would probably take this therapy. This attitude is different from the known practice that preventive and long-lasting therapies are usually stopped earlier or are not respected at all, as long as a man is personally endangered.

If someone from a family gets sick (temperature, breathing problem), the majority of the participants decides to call the doctor or to visit one, which is expected (in Belgrade the great majority goes to the doctor, they don't call him).but, 145 would address the friends first or (12%) try with own therapy. These solutions are present in Belgrade and in a very small number in Nis. Addressing friends is more present with women.

Vaccination

88% of Rome population heard about the vaccination against the seasonal flu, almost all from Nis and only 80% in Belgrade. Again, women are less informed. If we exclude 205 of the participants who don't know its importance, almost half of the rest think that it is important for all the citizens, and half understands that vaccine is the most important for people with low immunity.

It is interesting that almost all the participants understand that this vaccine does not protect from avian influenza (only 10% claim wrongly and don't know). Women are also less informed here.

8% of this population received the vaccine regularly or several times in the last five years. The great majority hasn't received any or is not sure about this, which can be treated as avoiding the answer. It is interesting that 94% in Nis claim that they didn't receive it or don't know about this. In Belgrade, 30% claim that they received the vaccine once or twice. This answer can't be taken as reliable.

Consuming

Poultry and eggs are often and sometimes consumed by over 90% of the Rome population. Only in this case there is no bigger difference between subgroups. The great majority of men do not prepare this kind of food alone and half of the women too. Those who do that, mostly fry or roast it, and in smaller number boil it. However, the great majority (80%) tries it before it is prepared, which is a special risk.

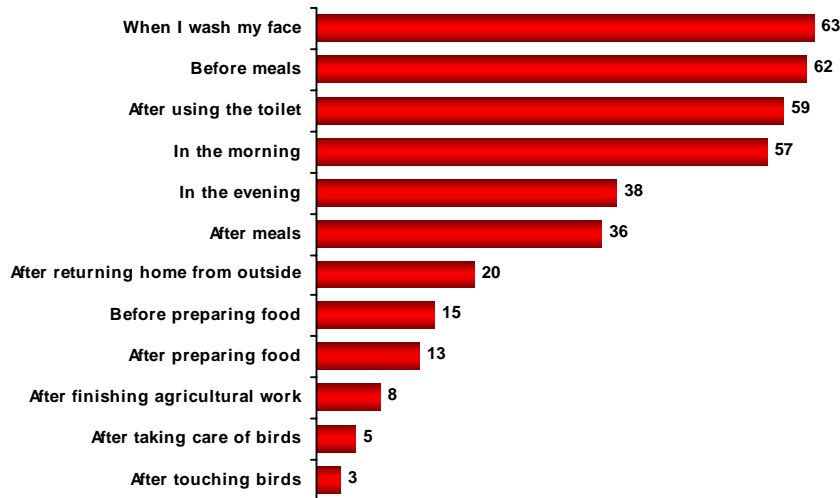
After the appearance of avian influenza, Rome population lessened the consuming of poultry meat, almost 36%, which is bigger than in other participants groups. This goes for Belgrade group without an exception, where the fear from infection was far more present, regardless of the gender and age of the participants.

We can make similar conclusion about egg consuming, but 32% use eggs less, mostly in Belgrade.

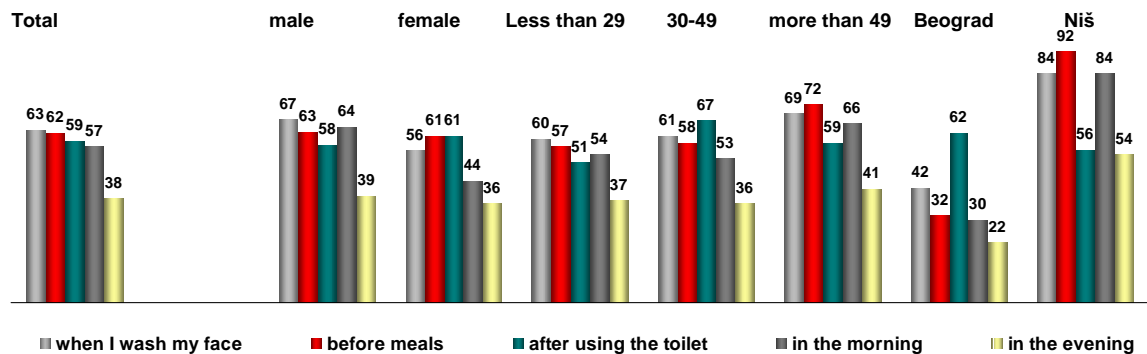
There is a great fear within this population when we speak about finding a dead bird: half would immediately inform the local authority, more than in other segments of the participants. 17% would touch the dead bird with hands to check if it is dead, which points to an obviously low level of knowledge on ways of prevention.

Hand washing

38% claim that they wash hands more often after the appearance of avian influenza, which is again higher than overall population and shows greater fear from this danger. We should be careful with this question because of giving the desired answers in greater number than in other participants groups. Still, it is logical that more than a half of the participants claims that they wash hands more often, because in this population the level of hygiene is lower so the fear from infection is greater than with those participants in Nis.



Hands are washed in all logical situations (desired answers!), but there are curiosities like before preparing the food only with 15%, or after taking care of animals only with 5%. Here we again have a huge difference between Nis and Belgrade and it is worth considering:



17% of the participants uses only water, and 80% soap and water. Hand washing without soap is mostly connected to population in Belgrade, 32%.

Informing

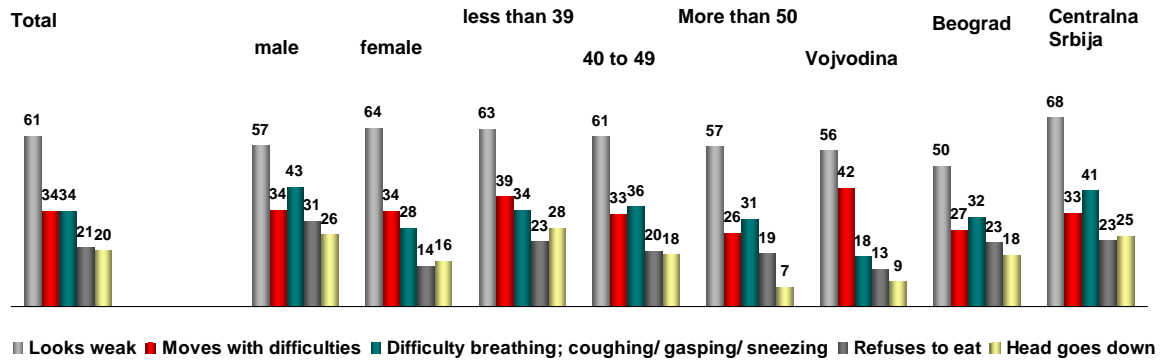
Current informing on this matter is through TV (73%), press (37%), market 15%, friends 11%. This is a similar distribution of answers as it was one year ago.

Rome population uses their own language of communication (84%) and Serbian 16%.it is a fact that Rome population in Nis uses their own language almost without an exception and in Belgrade 30% of the participants wants communication in Serbian.

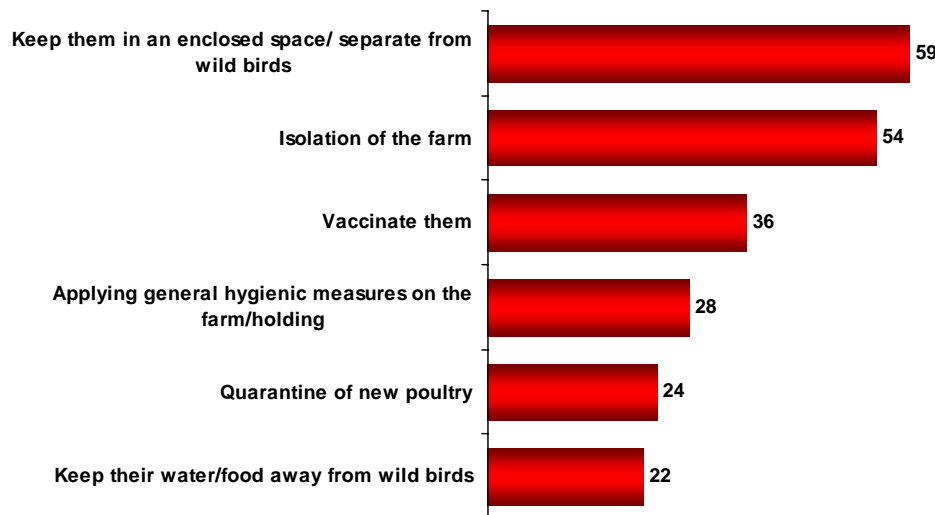
Doctors and Vets

Knowledge

Judging by the statements of medical workers, they are informed enough on ways of transferring the disease among birds and symptoms of contagion. There are no significant differences in gender and age, but there are differences in regions (first mentioned symptoms):



The ways of protecting the poultry from contagion are also correctly presented:

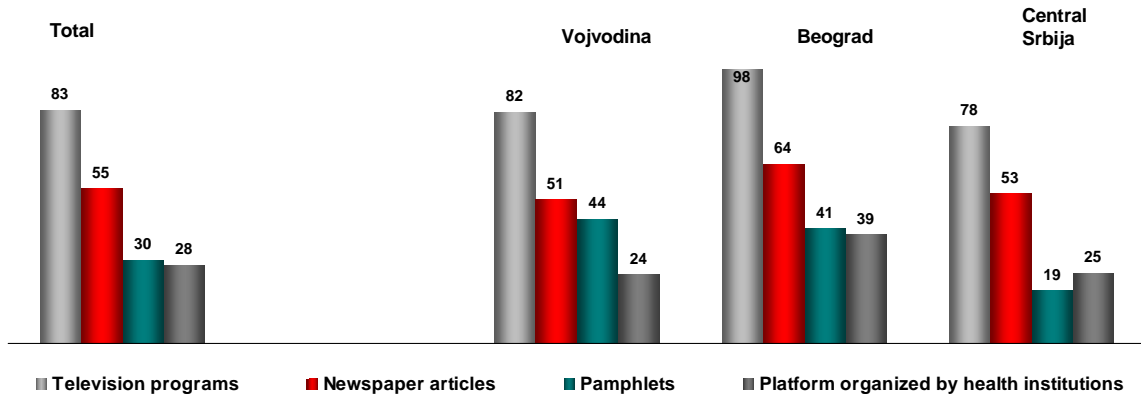


This goes for the measures that should be undertaken in case of epidemics among the poultry.

When we speak about the communication of preventive measures up to now in case of epidemics among the poultry (birds), beside TV and press, lectures in health institutions (29%) and brochures (25%) take an important place. These means of communication are not present with general population or certain sensitive groups like children and Rome population.

Medical workers know that people can be infected by touching live or dead poultry or birds, by consuming of their meat and eggs. They also have clear information on disease symptoms with people.

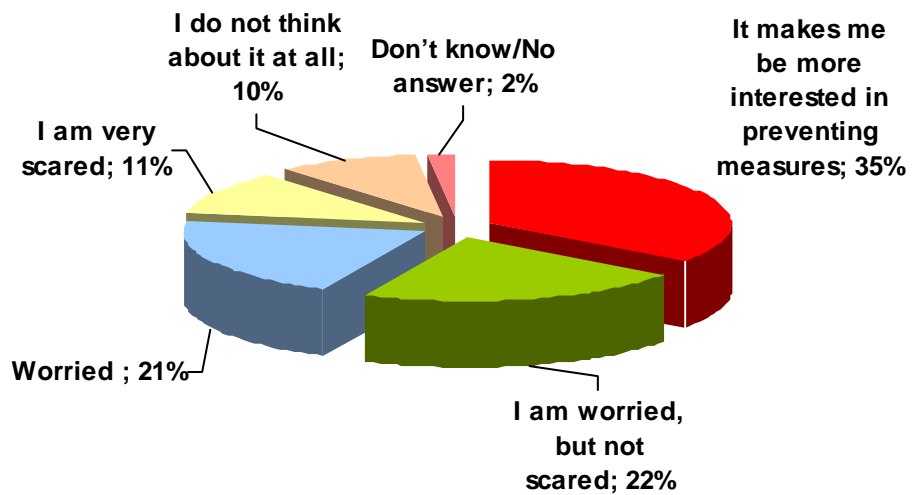
They also claim that they received information on prevention from avian influenza epidemics among people from TV, press, but also lectures and brochures. But it seems that these last mentioned means of communication



were not equally available everywhere.

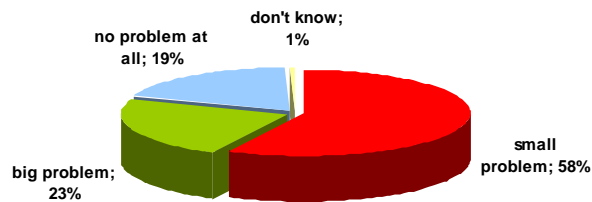
About pandemics

According to expectations, medical worker knew the definition of pandemics. Still the fear from mutation of the virus from bird's to humane and possibility of pandemic is not great:



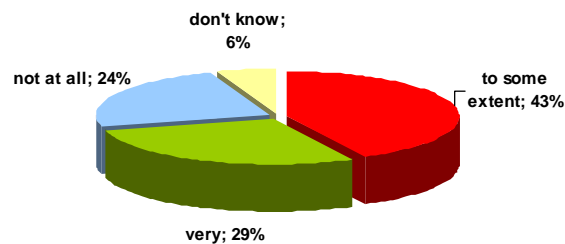
Attitudes

Attitudes towards avian influenza with birds and poultry and a possible threat are pretty moderate.



Except 23% who think that this is a huge problem, the rest 58% (think it is a small problem or no problem at all (19%). Similar distribution of answers is with question on the size of a threat for the family, local community or the state.

The great majority think that recommended preventive measures and behavior are very efficient (60%), or moderately efficient (37%) in avian influenza prevention, and only 3% does not agree with this.



When we speak about the personal engagement in supervising of avian influenza with birds and poultry and development of prevention measures, only 29% is interested to participate, 34% moderately, 24% not interested. The most interested are from Vojvodina 38% and 50% in central Serbia who are moderately

interested.

The situation is similar when asked about seriousness of the problem connected to avian influenza with people: 51% think it is a small problem, 18% that it is not a problem at all, and 30% that it is a huge problem. Men, especially from Belgrade, think that avian influenza is not a problem at all.

About vaccination

Results about the opinion of vaccination against the seasonal flu are the following: 38% says it is very important for people with low immunity, 34% that it is important for everybody and 27% that it is important only for certain groups of people. The conscience on importance of vaccination is on the highest level in Belgrade. According to the groups, chronic patients are the most important, old people and children, 8% think that health workers should receive the vaccine and 4% think that people who breed poultry should receive the vaccine.

Different attitudes in regions are very interesting: regionally taken in central Serbia, chronic patients and old people are on the first place; only 8% think that children should receive the vaccine. It is similar in Vojvodina, but 31% mentions the children. 75% children and old people in Belgrade, chronic patients 50% and people with low immunity 38%.

Medical workers are not vaccinated regularly, but more regularly than the overall population. 16% have been vaccinated regularly or several times in the last 5 years, 10% of men and 20% of women. The worst situation is in Vojvodina with 10% of regularly vaccinated medical workers.

Practice

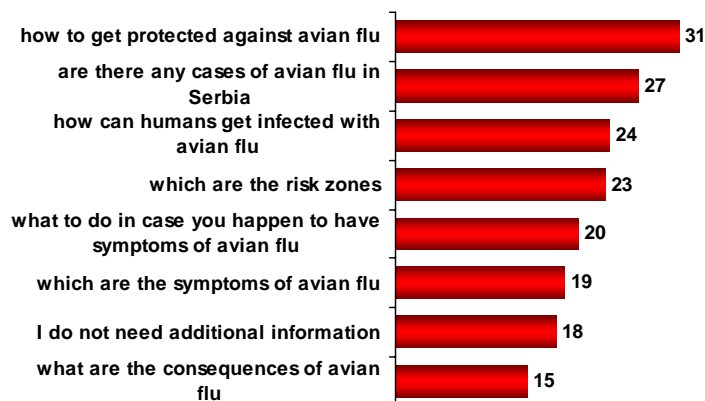
When we speak about the consuming of poultry meat, practically, everybody is using it, 73% often, 27% sometimes and the situation is similar with eggs consuming (58% often and 44% sometimes).

After all the events connected to avian influenza, only 8% says that they consume less poultry meat and eggs than before, and the largest number of these is from Belgrade.

The most of the participants does not prepare the poultry meat alone, which is in accordance with the attitudes of the overall population. These two categories are almost equal in Belgrade and 60% of the participants does not prepare the poultry, but in central Serbia, almost 83% of the participants does not prepare the poultry.

Informing

The great majority of the participants wants additional information on avian



influenza, only 18% thinks that additional information is not needed. The basic areas of interest are:

As differences in regions, age or gender are not important, the previous review could serve as the real list of subjects

that are important for future communication with medical workers.

The results of the qualitative research

Focus groups

The results of the research in four focus groups (two in Belgrade, one in Nis and one in Novi Sad) showed that the attitudes on this subject are pretty similar. The dominant attitude is that avian influenza is a bit forgotten subject and nobody thinks about this any more. When media reported on this it all seemed that this happened far away and that we shouldn't have been worried. The majority of people responded negatively on the question whether they were scared. Mothers and grandmothers were the only who were worried at that time. The indicative answers were like 'it wasn't pleasant to watch the birds being burned but I ate the meat at the time' or 'we cant run away from the destiny'. There is one opinion from Nis like 'they took all these out of some laboratory in order to destroy us'.

The level of informing was almost the same everywhere regardless of the level of education. Almost nobody spoke anything more about the transfer of a disease except about a bird to a man transfer. The participants knew about the word pandemic but no group discussed about the possibilities that the virus can be transferred from a man to a man. One man from Belgrade thinks that a man can be infected by a bird, that he can get well but the virus remains in the body. The majority knows that this flu is more dangerous than a seasonal flu and that a several people died of it. They also know that there were some tablets for relieving the symptoms. The attitude is that there is a cure for everything.

The participants said that they don't expect a lot from the state although we have great experts when we speak about the readiness of the state to help in case of a danger.

They also think that people would not be informed on this on purpose.

It is interesting that no one of the participants thought about buying protective masks during the campaign. The majority goes to the doctor in case of a disease, but rarely takes the therapy in full, but they stop the therapy at the moment when the symptoms disappear. When they were asked about whether they would take the medications preventively, they answered positively, but this is a socially acceptable answer.

When we speak about the level of informing, the majority thinks that it was not sufficient, that not all the facts were exposed. Nobody can understand the existence of infected birds in the neighborhood except with us.

The most wanted information on avian influenza:

- the way of transferring
- symptoms
- protection measures
- how it is treated
- if there is no cure is it searched for
- is it transferable on other animals
- where avian influenza came from

TV and press are the most dominant sources of information. The opinion is to include some brochures with a clear content and they should be distributed with press or put into mail boxes. The participants marked doctors as the category of people they would believe the most and then other structures. (all the groups heard about Dr. Kon and knew his name).

Interviews with medical workers

This group received some information at work, there were some organized lectures, but, generally, they were not satisfied with the quality and quantity of information. A lot of them used internet as an additional source. Their attitude was that the colleagues in preventive institutions were better informed. The general attitude of the participants is that health institutions are not equipped enough in order to fight with the disease.

Interviews with journalists

Priority for publishing the news in papers is an incident with a big title, which sells the papers.

The point is to earn money and not to inform people. It is not interesting for journalists to write about the vaccine against a seasonal flu, the same goes for avian flu or AIDS, unless there is some sensation.

There is complaint on the objectivity of informing, because the reports that avian flu is flying over our country but will not affect us and all the surrounding countries are affected. Such information usually brings doubt among people. The consequence of this is that people conclude on their own, searching for the affairs, 'lab mutants' and similar products that are in no connection with the basic subject.

The next problem here is that the news here is politically colored in order to discredit somebody, which actually puts the disease aside. A fresh example is the epidemic of hepatitis A in Nis. There are a lot of complaints on this subject, affairs, and the essence is avoided, and it is that people here don't have the basic culture of washing hands regularly.

'A very delicate subject of health is gladly read within the measures for long and healthy life and similar light subjects. Bad prognoses are avoided, and the potential danger is minimalized. The reason for this is in the psychology of people that is faced with existential problems, stresses they can not influence and control. In this perception they view their health as the only thing they own and that is why they don't like reading and listening about anything that can ruin that 'last oasis' which they have. Some time in the past they had the vision about the future life, hope, perspective, and today they are faced with low incomes, small pensions, unemployment, fears, and being in this state they don't like their health to be "touched'.

Conclusions and recommendations

It can be said that the population has pretty forgotten the seriousness of the situation just a year ago. This relaxed attitude is probably the consequence of suppressing such serious threats like avian influenza is, and this was supported by a huge break in communication with citizens on this subject.

This also means that the public is not ready enough at this moment in case of the return of a danger and constant informing is the only way to keep the wanted level of attention. It seems that the possibility of transferring the virus on people is not taken completely seriously. Knowledge on this subject represents the base for the right understanding of danger from pandemic and qualitative relationship to everything which means good prevention and we have to say that this subject requires additional explanations.

The idea of a mass disease transfer is still pretty abstract and that is proved by a question on a risk that avian influenza mutates into a version that is easily transferred from a man to a man, and this is what actually makes this disease so serious.

TV and press have been the main sources of information. People also think that brochures in papers and mail boxes can also inform. Being participants who would they believe the most, people named doctors, and other social structures are far below.

'A very delicate subject of health is gladly read within the measures for long and healthy life and similar light subjects. Bad prognoses are avoided, and the potential danger is minimized. The reason for this is in the psychology of people that is faced with existential problems, stresses they can not influence and control. In this perception they view their health as the only thing they own and that is why they don't like reading and listening about anything that can ruin that 'last oasis' which they have. Some time in the past they had the vision about the future life, hope, perspective, and today they are faced with low incomes, small pensions, unemployment, fears, and being in this state they don't like their health to be "touched".'

When we speak about children, the first level of awareness is satisfactory. But, we can see from the sources that schools are not used enough as the information sources. The precondition for this is to motivate educators to pay attention to this subject much more. When we reach this level we will have significantly smaller number of answers like 'dead birds touch, transfer, etc.'

With Rome population we have the second risk group. Here we have a different kind of problem. One part, which lives in so called Rome communities (bad accommodation, low hygiene, great unemployment, a lot of illiterates) has a very bad level of basic knowledge when we speak about avian influenza and the solution to this problem is more complex action with participation of the state. Those who live in 'normal' conditions have the level of knowledge equal to the average knowledge of the general population.

The general conclusion is that people here are not informed enough; they are not interested, unaware of the risk and danger, they aren't scared and they are unprepared. They are convinced that these things happen to other people, especially when we know that avian influenza hasn't been mentioned anywhere for months. For the majority of people avian influenza is the past.

Interactive Research Research Team

Project manager
Miroslav Šutić