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DYNAMICS OF SOCIAL- PSYCHOLOGICAL CONSEQUENCES 10 YEARS AFTER CHERNOBYL

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Abstract

The study has been carried out according to the long-term JSP2 in comparison with the results of data acquired by the authors in previous years in other programs in 1988-95 for more then 5 thousand people. In working out the strategy of post-catastrophe situation it is necessary to have a joint effort of the population and authority. The studies have showed that cooperation has not been achieved in this case. Hence, the effect of protective measures have been seriously decreased. Countermeasures taken after the catastrophe have had not only a positive, but in some cases a negative impact. The results of many previous studies as well as JSP2 program have shown serious social and psychological consequences of Chernobyl Accident. There is a constant year-to-year comprehension among population anxiety concerning their health. The main result of the study is that social and psychological consequences of the Chernobyl Accident include nonradiological risks as seriously as the radiation risk.

General Background.

The Chernobyl Accident in 1986 has become a cause of stress for the general public possessing all features of informational stress. The situation is characteristic for almost any global ecological stress. The cause of stress was information about radioactive contamination. Approximately 5 mln people had not seen with their own eyes the fire and the accident. they personally, by personal direct (without devices) perceptions could not evaluate the radiation risk, but they had to change their habits because of countermeasures.

Under these above-mentioned conditions stress and worry in the affected people is formed and prevails within a different time framework. They have their own distinctive features, channels and forms of incidence, which differ from the described classic cases when stress appears immediately after an accident, catastrophe or other extreme event for any direct participant of these events. A process of worry dissemination acquires an epidemic process character.

The aim of the study.

The results of many previous studies as well as JSP2 program have shown serious social and psychological consequences of Chernobyl Accident. For working out a long term strategy it is necessary to study the effects in actual dynamics of the factors that influence the social and psychological consequences.

Method.

The study has been carried out according to the long-term JSP2 in comparison with the results of data acquired by the authors in previous years in other programs. The basis for this study were questionnaires of the population. The study was carried out on radionuclide contaminated territories with different levels of contamination, on adjacent territories, on territories of relocation and on distant clean territories. Study period:1988-1995; number of polled participants: more then 5 thousand persons. Computer processing: SYSTAT program.

Results.

The level of psychological stress and worry is independent of the level of radiation contamination of the territories (Table 1).

Table 1
RADIATION RISK EVALUATION BY THE POPULATION IN 1988

Question	% of respondents with positive answer on contaminated territories with the level of contamination (Cu/km2)			
	1-5	5-15	15-40	>40
The radiation situation is dangerous for health	68.4	74.2	78.5	71.4
Mentioned cases of berth restriction	64.1	66.2	64.0	64.2
Thinking of moving to a different region	33.8	28.9	47.5	33.8
Definitely decided to move	4.6	2.0	3.7	0.0

Table 2
ATTITUDE TO RADIATION

Question	% of respondents with positive answer on contaminated territories in a year		
	1988	1992	1993
The radiation situation is dangerous for health	76.5	97.8	89.0
Aware of radiation influence on the health	87.5	69.2	89.2
The radiation has influence on the health	65.9	45.2	60.0

In contrast to other catastrophe the Chernobyl induced stress has no tendency of decrease with time (Table 2). In 1993 89% of the inhabitants of radionuclide contaminated territories thought

that the situation of contamination is dangerous for their health against 78% of the respondents in 1988.

Subject of the psychological stress during the years after Chernobyl is a worry to radiation influenced to the health his and his child. The main content of the sickness stress has been the serious concern about personal health and the health of the children. More than 80% of the respondents are afraid to be affected by a radiation related diseases or think they have already been affected by such a disease. Radiation risk is evaluated as being at rather high level equal to risk of the vital social and economic factors (Table 3).

Table 3
ANXIETY OF THE POPULATION CONCERNING EXTERNAL FACTORS
INFLUENCE UPON HEALTH IN 1993

Question	% of anxiety respondents on the territories					
	contaminated			control		
	no	little	very	no	little	very
Have you been exposed to a dangerous radiation dose?	4.0	30.4	65.6	30.0	59.4	10.7
Are you worried about radiation effect?	2.0	38.1	59.8	19.4	46.6	34.0
Are you worried of the economical changes?	6.9	30.7	62.5	30.8	33.5	33.8
Are you worried of the social changes?	2.6	37.6	52.8	35.9	40.1	24.1

The population has a tendency to link all its health problems with the accident and its consequences. Up to 70% of the respondents on territories with different levels of radionuclide contamination are sure their health has been influenced by the catastrophe. All the other every day factors that usually caused health problems are either ignored or pushed into the background (Table 4).

Table 4
POPULATION RISK EVALUATION IN 1993

Factor	% of anxiety respondents on the territories					
	contaminated			control		
	no	little	very	no	little	very
Traffic	18.7	55.2	36.2	4.3	62.8	32.9
Alcohol	44.3	35.7	20.0	44.1	39.7	16.2
Smoking	45.3	33.0	21.8	43.0	43.5	14.5
Drugs	58.0	12.2	29.9	66.3	12.8	20.9
Chemical pollution induced disease	7.7	32.6	59.6	9.1	32.7	58.2
Radionuclide pollution induced disease	2.1	21.7	76.2	13.4	34.9	51.7

Moreover, the population is definitely expecting radiation impact. Up to 90% of the population on the radionuclide contaminated territories knows of cases of thyroid diseases, and more 70% of the respondents have heard about sudden deaths of young people. Even in remote control areas a number of these respondents is great - 44% to 52% of the total number (Table 5).

Table 5
EVALUATION OF THE RADIATION IMPACT ON THE HEALTH
OF OTHER PEOPLE IN 1993

Question	% of respondents with positive answer on territories			
	contaminated	adjacent	relocation	control
I am acquainted with someone who has fallen seriously ill	47.8	38.4	55.6	18.2
In my immediate surroundings there are people with thyroid disease	92.0	71.1	89.1	51.6
I have heard of young people's sudden deaths with no apparent reason	71.2	73.6	72.0	44.1

Countermeasures taken after the catastrophe have had not only a positive, but in some cases a negative impact. Studies performed years after the tragedy showed that such as an overall medical check, disactivation, radiation measurements enhance the stress in about 40% of population. Stress level in villages where cattle has been expropriated turned out to be much higher than in those where this countermeasure was not performed - even 7 years after the catastrophe. Apparently, cattle expropriation was a notable sign of the accident, and was not regarded by the population as a means of defence.

The main source of knowledge was information. During recent years the trust in official information decreased dramatically. In 1988 70% of the respondents trusted official information. In 1993 their number fell to 5%. At the same time 50% of the population still trust specialists. Special trust is given to rumors; 30% to 60% of the population consider them the most reliable source of information.

The study of social-psychological consequences of one of the most important countermeasures relocations has shown, that character and specific features of its organization may determine level of psychological response of the population.

While in 1988 52% of the population wished to move from radionuclide contaminated territories, only 31% expressed such an intention in 1993.

Discussion.

There is a constant year-to-year comprehension among population anxiety concerning their health. During the polls in protective measures priority is given to medical treatment support. This is also true for the relocated in 1995.

Dynamic observation over the psychological consequences with the relocated have shown that stress level has grown in the period from 1992 till 1995. This coincides with decrease of social standards and lack of financial support in the medical sphere, construction and with the developing of the infrastructure. All these have been mentioned in the answers to open-ended questions by the relocated in 1995.

Results of the poll in the dynamics for the period of 1992-95 have shown a marked tendency of dependence growth of the population on the local authority. More than 80% of the population think state authority should be responsible for the liquidation of the catastrophe results; 50% demands it of the local authority and 50% of the doctors. Only 20% of the population think that they should try to deal with the present situation.

In developing post-catastrophe management guidelines it is necessary to take into account the forms of overcoming the stress that the population itself uses. It would have been possible to imagine that people from radionuclide contaminated territories would be worried to a great extent by the possibility of dangerous radiation influence of the health (as it has been shown earlier), that they would take measures to prevent getting another dose of radiation. In 1993 locus-control (adapted for slavic population) poll showed that 69% of the exposed told that their routine life-style has changed. Nevertheless, protective measures are being used only 22% from the exposed. In other words, everyday life and subjective image do not consider. Apparently this shows a double standard in approach of the population to the problem.

In working out the strategy of post-catastrophe situation it is necessary to have a joint effort of the population and authority. The studies have showed that cooperation has not been achieved in this case. Hence, the effect of protective measures have been seriously decreased. Stress among population increases with time; it is enhanced by the fact that a 45% of the population did not trust the authority (the data does not change with time) and only 14% of population believe at present (1995) that local authority takes definite steps to change the situation to the better.

If we compare the social-psychological consequences of the Chernobyl catastrophe in the USSR and Tri-Mile-Island accident in the USA we can point out the following positive features of the Chernobyl Accident:

1. The population on the contaminated territories in Russia has not been stricken by panic immediately after the catastrophe.
2. For the long time after the accident a trust to the specialists has been maintained; more than 50% of the respondents prefer to receive information from the specialists up till now.
3. People still believe in atomic power as a source of energy. Only 30% of the population suggest to close down all the existing atomic power stations, 95% of the population consider to build atomic power stations with the better protection.

Conclusion.

The study showed, that radiation risk perception and as a result of this, population anxiety appeared to be the result of the following factors:

- situation (changing of the radiation situation and introducing of the protection measures);
- information (trusting the sources, availability, urgency);
- social and economic (changing the social structure of the social and difference of economic situation);
- political (authorities' stability, functioning of the legal system)
- geographical (close location to contaminated area).

The basis of the social and psychological rehabilitation should be found in strengthening personal attitudes and consideration of personal responsibility. Social and psychological consequences include nonradiological risks. Their influence should be taken into account as seriously as the influence of radiation, for psychological distress takes its toll both in diseases and in deaths.