САМООЦІНКА ЗДОРОВ'Я НАСЕЛЕННЯ УКРАЇНИ ВНАСЛІДОК ЧОРНОБИЛЬСЬКОЇ КАТАСТРОФИ У ПІЗНІЙ ФАЗІ АВАРІЇ

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HEALTH SELF-ASSESSMENT OF UKRAINIAN POPULATION AS A RESULT OF CHORNOBYL ACCIDENT ON THE LATE PHASE

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УДК 613.648.4:614.876:621.039.58

Keywords: Chornobyl accident, health self-assessment, radioanxiety, questionnaire survey, late phase of the accident, significant relationship.

On its scale and impact on the environment and society the Chornobyl disaster had become a phenomenon of global importance, in the number of dead and injured people from the consequences and economic losses. On the territories which was not directly affected by explosion factors radioactive contamination is painfully perceived by the population and gives rise to anxiety for own health and health of their relatives [1]. At the late period after the Chornobyl accident, determination of population radioanxiety (for the first time the expression "radiation anxiety or radioanxiety" was introduced in 1988 due to the Chornobyl accident), which living on the contaminated and relatively "clean" areas, is one of the topical problems of accidental impact on people health in Ukraine. Radioanxiety – is the emotional and psychological condition, when person overestimates subjectively dangers for health of objectively existing minor radiation exposure [2]. Radioanxiety status is normal and adequate human response to radioecological situation after the accident. However, high radioanxiety level among population reduces the quality of life and worsens his health.

The accident affected millions of people, and has become a factor in the occurrence of stress among adults and children. There is 30 years of the experience of outreach programs for population on areas of radioactive contamination. According to scientific research carried out in 2002-2006 [3-5] it was found that from 40 to 69% of the population in contaminated areas feel fear, haunting memories, compulsive thoughts and feelings because of the Chornobyl accident. Meanwhile, 51.5-55.6% of healthy people feel fear, anxiety, irritation, insomnia.

Public opinion poll conducted by the Institute of Sociology in 1997 (ten years after the accident) showed that 20% of suffered after Chornobyl accident were still in a state of social and psychological maladjustment, "Chornobyl destroyed my life".

САМООЦІНКА ЗДОРОВ'Я НАСЕЛЕННЯ УКРАЇНИ ВНАСЛІДОК ЧОРНОБИЛЬСЬКОЇ КАТАСТРОФИ У ПІЗНІЙ ФАЗІ АВАРІЇ

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***Мета**: виконати науковий аналіз отриманих даних індивідуального опитування населення України та провести оцінку залежності самооцінки здоров'я респондентів від різних факторів у пізній фазі аварії на Чорнобильській АЕС.*

***Методи**: аудиторне анкетування дітей та заочне анкетування їхніх батьків у Рівненській, Житомирській, Київській, Одеській областях та містах Київ і Славутич. Обробка результатів виконувалася за допомогою стандартних програм Microsoft Office 2010. З використанням таблиць спряженості та коефіцієнтів кореляції Пірсона і Спірмена проведено оцінку залежності самооцінки здоров'я опитаного населення України від різних факторів у пізній фазі аварії на Чорнобильській АЕС.*

***Результати**. За результатами анкетування сформовано базу даних, яка містила 2918 коректно заповнених анкет; серед респондентів 64% становили учні та студенти і, відповідно, 36% – їхні батьки. Виявлено достовірний зв'язок між рівнем здоров'я та статтю ($\chi^2 = 163,31$; $p<0,001$) – більшість респондентів чоловічої статі оцінює свій стан здоров'я набагато краще на відміну від жіночої; між рівнем здоров'я і рівнем освіти ($r_S = 0,99$; $p<0,001$), де значна частина респондентів з середньою освітою оцінює своє здоров'я гірше, ніж опитані з вищою освітою; між рівнем здоров'я та оцінкою радіаційного забруднення території, на якій проживають опитані ($r_S = 0,24$; $p<0,001$); а також між самооцінкою здоров'я респондентів залежно від оцінки радіаційного вмісту у продуктах харчування, що вони споживають ($\chi^2 = 118,03$; $p<0,001$). Таким чином, опитане населення України, незалежно від самооцінки здоров'я, переконане, що вони проживають на радіаційно забрудненій території, а продукти харчування, які вони споживають, містять радіонукліди. Третина респондентів з «хорошою» та майже третина з «відмінною» самооцінкою стану здоров'я переконана, що Чорнобильська аварія досить сильно впливає на їхнє здоров'я та здоров'я їхніх близьких, зв'язок достовірний ($r_S = 0,33$; $p<0,001$). Виявлено достовірний зв'язок ($\chi^2 = 25,31$; $p<0,001$) між самооцінкою здоров'я населення України і стурбованістю населення України щодо актуальності існування Зони Відчуження. Так вважають 91,52% респондентів, які оцінили свій стан здоров'я «погано», та 81,75% – «відмінно».*

Ключові слова: Чорнобильська катастрофа, самооцінка здоров'я, радіотривожність, анкетування, пізня фаза аварії, достовірний зв'язок.

Especially women and rural residents consider that they are "the victims of the accident". Youth is characterized by their optimism, self-reliance, and economic initiative [6].

The **objective** was to perform scientific analysis of received data from questionnaire survey of Ukrainian population and to estimate dependence of self-assessment of respondents' health on different factors at the late phase after the Chornobyl accident.

Subject of inquiry: secondary school pupils (16-18 years), students and their parents in different regions of Ukraine.

Research methods. Data collection was carried out using specially designed questionnaire which was offered for young people and their parents. Questioning was conducted among respondents in Rivne, Zhytomyr, Kyiv, Odesa regions, also in Kyiv city and Slavutych town. Forming of the database and results preprocessing was performed using standard programs in Microsoft Office 2010. According to the survey results obtained database contains 2918 correctly completed questionnaires; 36% of respondents were parents, 64% — schoolchildren and students.

Individual questionnaire contained six sections: general information, health status, nutrition, effects of the Chornobyl accident and safe operation of nuclear power plants, radiation and risk.

Using contingency tables, Pearson and Spearman correlation coefficients (to test the association between two variables), we assessed depending of health self-assessment in Ukrainian surveyed population from different factors in the late phase of the Chornobyl accident.

Main results of the study. Responses concerning health self-assessment differed by the sex of the respondent. Study results are shown in table 1.

Table 1

Health self-assessment differed by the sex of the respondent

Sex	Health status					
	excellent	good	satisfactory	bad	very bad	Totals
male	170	500	308	33	5	1016
Column, %	62.04%	40.00%	25.60%	20.00%	31.25%	
Row, %	16.73%	49.21%	30.31%	3.25%	0.49%	
Total, %	5.85%	17.19%	10.59%	1.13%	0.17%	34.94%
female	104	750	895	132	11	1892
Column, %	37.96%	60.00%	74.40%	80.00%	68.75%	
Row, %	5.50%	39.64%	47.30%	6.98%	0.58%	
Total, %	3.58%	25.79%	30.78%	4.54%	0.38%	65.06%
Totals	274	1250	1203	165	16	2908
Total, %	9.42%	42.98%	41.37%	5.67%	0.55%	100.00%

This shows that most of the males (62.04%) rated their health status as "excellent", when 68.75% of women respondents rated it as "very bad". The relationship between the health level and sex in our study was significant ($\chi^2 = 163.31$, $p<0.001$).

It is known that education level can influence on health self-assessment [7], so we analyzed the results of our survey to test the hypothesis. The results of this analysis are presented in table 2.

Table 2 shows that 44.89%, 53.04% and 54.95% of respondents with higher education assessed their health respectively as excellent, good and satisfactory. Among those who have secondary education the most respondents assessed their health as bad or very bad (60.67%).

In general, according to the results of our survey the relationship between the level of health and education level was significant ($r_S = 0.99$; $p<0.001$).

According to the results presented in table 3, we analyzed the dependence of health self-assessment and evaluation of radiation contamination in which respondents live.

Data from table 3 show that respondents who rated their health as "bad" (43.03%) and "very bad" (37.50%) believe that they live in the contaminated area. However, 16.36% and 12.50% of respondents who similarly rated their health convinced that the area where they live is "very contaminated". And besides, attention is drawn to the fact that significant proportion of respondents who assessed their health as "excellent" (11.31%) and "good" (25.12%) are concerned about this issue too and also consider the territory of their residence as "radioactive contaminated".

The relationship between the health level and assessment of radiation contamination where respondents reside is statistically significant ($r_S = 0.24$; $p<0.001$).

Table 4 presents the results of subjective assessment of radia-

Table 2

Health self-assessment differed by the education level of respondents

Education level	Health status					
	excellent	good	satisfactory	bad	very bad	Totals
secondary	145	506	300	38	6	995
Column, %	52.92%	40.48%	24.94%	23.17%	37.50%	
Row, %	14.57%	50.85%	30.15%	3.82%	0.60%	
Total, %	4.99%	17.41%	10.32%	1.31%	0.21%	34.23%
secondary specialized	6	81	242	49	5	383
Column, %	2.19%	6.48%	20.12%	29.88%	31.25%	
Row, %	1.57%	21.15%	63.19%	12.79%	1.31%	
Total, %	0.21%	2.79%	8.32%	1.69%	0.17%	13.18%
higher, incomplete higher	123	663	661	77	5	1529
Column, %	44.89%	53.04%	54.95%	46.95%	31.25%	
Row, %	8.04%	43.36%	43.23%	5.04%	0.33%	
Total, %	4.23%	22.81%	22.74%	2.65%	0.17%	52.60%
Totals	274	1250	1203	164	16	2907
Total, %	9.43%	43.00%	41.38%	5.64%	0.55%	100.00%

САМООЦЕНКА ЗДОРОВЬЯ НАСЕЛЕНИЯ УКРАИНЫ ВСЛЕДСТВИЕ ЧЕРНОБЫЛЬСКОЙ КАТАСТРОФЫ В ПОЗДНЕЙ ФАЗЕ АВАРИИ

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***Цель**: выполнить научный анализ полученных данных индивидуального опроса населения Украины и провести оценку зависимости самооценки здоровья респондентов от различных факторов в поздней фазе аварии на Чернобыльской АЭС.*
***Методы**: аудиторное анкетирование детей и заочное анкетирование их родителей в Ровенской, Житомирской, Киевской, Одесской областях и городах Киев и Славутич. Обработка результатов выполнялась с помощью стандартных программ Microsoft Office 2010. С использованием таблиц сопряженности и коэффициентов корреляции Пирсона и Спирмена проведена оценка зависимости самооценки здоровья опрошенного населения Украины от различных факторов в поздней фазе аварии на Чернобыльской АЭС.*
***Результаты**. По результатам анкетирования сформирована база данных, которая содержала 2918 корректно заполненных анкет; среди респондентов 64% составляли учащиеся и студенты и, соответственно, 36% — их родители. Выявлена достоверная связь между уровнем здоровья и полом (χ^2 = 163,31; p<0,001) – большинство респондентов мужского пола оценивает свое состояние здоровья гораздо лучше в отличие от женского; между уровнем здоровья и уровнем образования (r_S = 0,99; p<0,001), где значительная часть респондентов со средним образованием оценивает свое здоровье хуже, чем опрошенные с высшим образованием; между уровнем здоровья и оценкой радиационного загрязнения территории, на которой проживают опрошенные (r_S = 0,24; p<0,001); а также между самооценкой здоровья респондентов в зависимости от оценки содержания радионуклидов в продуктах питания, которые они потребляют (χ^2 = 118,03; p<0,001). Таким образом, опрошенное население Украины, независимо от самооценки здоровья, убеждено, что они проживают на радиационно загрязненной территории, а продукты питания, которые они потребляют, содержат радионуклиды. Треть респондентов с «хорошей» и почти треть с «отличной» самооценкой состояния здоровья убеждены, что Чернобыльская авария достаточно сильно влияет на их здоровье и здоровье их близких, связь достоверная (r_S = 0,33; p<0,001). Обнаружена достоверная связь (χ^2 = 25,31; p<0,001) между самооценкой здоровья населения Украины и обеспокоенностью населения Украины относительно актуальности существования Зоны отчуждения. Так считают 91,52% респондентов, оценивших свое здоровье «плохо», и 81,75% — «отлично».*

Ключевые слова: Чернобыльская катастрофа, самооценка здоровья, радиотревожность, анкетирование, поздняя фаза аварии, достоверная связь.

tion content in consumed food products and health self-assessment of respondents.

From presented in table 4 resulting data it is clear that without regard to respondents' health self-assessment, all of them believe that consumed food products contain radionuclides. It is the common opinion of the majority of respondents with "bad" (70.91%) and "very bad" (50.00%) feeling; respondents with "good" and "excellent" feeling think in a similar way (46.64% and 36.76% respectively). The result of our study was significant (χ^2 = 118.03, p<0.001).

Study results show respondents' subjective assessment of the Chjrnobyl accident on their health and the health of their family members'. These results are presented in table 5.

Table data show that 31.71% of respondents with "good" and 24.74% with "excellent" health self-assessment are convinced that Chornobyl accident is quite affects on their health and the health of their family members. It should be noted that among respondents with "bad" and "very bad" health self-assessment there are very small percentage (1.66% and 0.55%) of people who believe that Chornobyl accident does not affect on health (their and their family members') at all.

The relationship between level of health self-assessment and respondents' subjective evaluation of impact of Chornobyl accident on their health and the health of their family members' is significant (r_S = 0.33; p<0.001).

Also, according to survey

Table 3

Estimation of radioactive contamination of the territory where respondents live differed by health self-assessment

Contamination of the territory	Health status					
	excellent	good	satisfactory	bad	very bad	Totals
very clean	25	22	13	1	3	64
Column, %	9.12%	1.76%	1.08%	0.61%	18.75%	
Row, %	39.06%	34.38%	20.31%	1.56%	4.69%	
Total, %	0.86%	0.76%	0.45%	0.03%	0.10%	2.20%
almost clean	80	242	101	11	1	435
Column, %	29.20%	19.36%	8.41%	6.67%	6.25%	
Row, %	18.39%	55.63%	23.22%	2.53%	0.23%	
Total, %	2.75%	8.33%	3.48%	0.38%	0.03%	14.97%
satisfactory	123	635	647	55	4	1464
Column, %	44.89%	50.80%	53.87%	33.33%	25.00%	
Row, %	8.40%	43.37%	44.19%	3.76%	0.27%	
Total, %	4.23%	21.85%	22.26%	1.89%	0.14%	50.38%
quite dirty	31	314	374	71	6	796
Column, %	11.31%	25.12%	31.14%	43.03%	37.50%	
Row, %	3.89%	39.45%	46.98%	8.92%	0.75%	
Total, %	1.07%	10.81%	12.87%	2.44%	0.21%	27.39%
very dirty	15	37	66	27	2	147
Column, %	5.47%	2.96%	5.50%	16.36%	12.50%	
Row, %	10.20%	25.17%	44.90%	18.37%	1.36%	
Total, %	0.52%	1.27%	2.27%	0.93%	0.07%	5.06%
Totals	274	1250	1201	165	16	2906
Total, %	9.43%	43.01%	41.33%	5.68%	0.55%	100%

results Ukrainian population regardless of health self-assessment consider that the most important result of the accident is the existence of the Exclusion Zone for today. Relevant results are shown in table 6.

Results in table 6 show that respondents who rated the state of health as "bad" (91.52%) consider the existence of the Exclusion as an important consequence of the Chornobyl accident; high percentage of respondents with self-assessment "excellent" (81.75%) has the same point of view.

According to our survey it was confirmed a statistically significant relationship between health self-assessment and anxiety due to existence of the Exclusion Zone as legacy of accident on Chornobyl NPP (χ^2 = 25.31, p<0.001). This is one more evidence which proves that the education concerning radiation factor is failed in our country. In fact, at present according Likhtarov I.A. "…as of 2015, approximately 60% of the 30-kilometer zone have no radiological contraindication even to people re-evacuation. Moreover, there are no contraindications in making meat and dairy production in the area. This is based on titanic databases of environmental data from professionals working in the Administration of the Exclusion Zone" [8].

Table 4

Health self-assessment differed by assessment of radiation content in consumed food products

Food contamination	Health status					
	excellent	good	satisfactory	bad	very bad	Totals
yes	100	583	680	117	8	1488
Column, %	36.76%	46.64%	56.62%	70.91%	50.00%	
Row, %	6.72%	39.18%	45.70%	7.86%	0.54%	
Total, %	3.44%	20.08%	23.42%	4.03%	0.28%	51.24%
no	81	225	123	7	3	439
Column, %	29.78%	18.00%	10.24%	4.24%	18.75%	
Row, %	18.45%	51.25%	28.02%	1.59%	0.68%	
Total, %	2.79%	7.75%	4.24%	0.24%	0.10%	15.12%
don't know	91	442	398	41	5	977
Column %	33.46%	35.36%	33.14%	24.85%	31.25%	
Row, %	9.31%	45.24%	40.74%	4.20%	0.51%	
Total, %	3.13%	15.22%	13.71%	1.41%	0.17%	33.64%
Totals	272	1250	1201	165	16	2904
Total, %	9.37%	43.04%	41.36%	5.68%	0.55%	100%

Table 5

The relationship between respondents' subjective assessment of Chornobyl accident influence on health (their and their family members') and health self-assessment

Influence of Chornobyl accident on health	Health status					
	excellent	good	satisfactory	bad	very bad	Totals
not at all	94	184	76	6	2	362
Column, %	34.56%	14.78%	6.35%	3.64%	12.50%	
Row, %	25.97%	50.83%	20.99%	1.66%	0.55%	
Total, %	3.25%	6.36%	2.63%	0.21%	0.07%	12.51%
very little	78	353	166	14	1	612
Column, %	28.68%	28.35%	13.88%	8.48%	6.25%	
Row, %	12.75%	57.68%	27.12%	2.29%	0.16%	
Total, %	2.70%	12.20%	5.74%	0.48%	0.03%	21.15%
some extent	83	567	732	66	6	1454
Column, %	30.51%	45.54%	61.20%	40.00%	37.50%	
Row, %	5.71%	39.00%	50.34%	4.54%	0.41%	
Total, %	2.87%	19.59%	25.29%	2.28%	0.21%	50.24%
strong enough	14	117	181	55	2	369
Column, %	5.15%	9.40%	15.13%	33.33%	12.50%	
Row, %	3.79%	31.71%	49.05%	14.91%	0.54%	
Total, %	0.48%	4.04%	6.25%	1.90%	0.07%	12.75%
very much	3	24	41	24	5	97
Column, %	1.10%	1.93%	3.43%	14.55%	31.25%	
Row, %	3.09%	24.74%	42.27%	24.74%	5.15%	
Total, %	0.10%	0.83%	1.42%	0.83%	0.17%	3.35%
Totals	272	1245	1196	165	16	2894
Total, %	9.40%	43.02%	41.33%	5.70%	0.55%	100%

Conclusions

It was found statistically significant relationship (χ^2= 163.31; p<0.001) between health level and sex; the most male respondents assess their health status more positively, unlike women.

Health self-assessment and educational level are strongly associated (r_S = 0.99; p<0.001). Much of the respondents with secondary education estimate their health worse than respondents with higher education.

Statistically significant relationship was identified between health self-assessment and evaluation of radiation contamination of territory where respondents live (r_S= 0.24; p<0.001); and also between health self-assessment and assessment of radiation content in consumed food products (χ^2 = 118.03; p<0.001). So regardless of health self-assessment surveyed Ukrainian population believe that they live on radiation contamination territories and consume food with radionuclides.

Analysis of health self-assessment and respondents' subjective assessment of Chornobyl accident influence on health (their and their family members') found that one third of respondents with "good" and almost one third with "excellent" health self-assessment are confident of strong affects on their health and the health of their family members from Chornobyl, significant relationship (r_S = 0.33; p<0.001).

It was identified significant rela-

tionship (χ^2 = 25.31; p<0.001) between health self-assessment of Ukrainian people and existence of the Exclusion Zone as legacy of accident on Chornobyl NPP; 91.52% of respondents with assessment “bad” and 81.75% with assessment “excellent” consider in such way.

ЛІТЕРАТУРА

1. Проблемы безопасности атомной энергетики. Уроки Чернобыля : монография / Б.С. Пристер, А.А. Ключников, В.Г. Барьяхтар, В.М. Шестопалов, В.П. Кухарь; под ред. Б.С. Пристера ; 2-е изд., доп. – Чернобыль : Ин-т проблем безопасности АЭС, 2016. – 116 с.

2. Радиотревожность населения загрязненных территорий и меры по ее снижению: пособие для специалистов служб Роспотребнадзора. – Минздрав РФ, 2007. – 8 с.

3. Мельницкая Т.Б. Информационно-психологическая безопасность населения в условиях риска радиационного воздействия: концепция, модель, технологии : дис. доктора психолог. наук : 05.26.02, 19.00.04 / Т.Б. Мельницкая. – СПб., 2009. – 429 с.

4. Марченко Т.А. Концепция социально-психологической реабилитации граждан, подвергавшихся аварийному воздействию вследствие аварий и катастроф : практ. рук. по совершенствованию информационных технологий по работе с населением радиоактивно загрязненных территорий / Марченко Т.А., Абрамова В.Н. – Обнинск : ОНИЦ "Прогноз", 2004. – 27 с.

5. Румянцева Г.М. Проблемы восприятия и субъективной оценки риска от ионизующей радиации / Г.М. Румянцева, О.В. Чинкина // Радиационная гигиена. – 2009. – Т. 2, № 3. – С. 53-58.

6. Чорнобиль і соціум (вип. 4). Динаміка соціальних процесів: соціально-психологічний моніторинг наслідків Чорнобильської катастрофи. – К. : ІС НАНУ, ЦСЕП, 1998. – 247 с.

7. Самооцінка стану здоров’я населення України [Електронний ресурс] / Київський міжнародний інститут соціології. – Режим доступу: http://kiis.com.ua/?lang=ukr&cat=reports&id=212&page=6.

8. Про зняття з експлуатації Чорнобильської АЕС, об’єкт «Укриття» та перспективи розвитку зони відчуження : матер. парлам. слухань у Верховній Раді України 04.03.2015 р. / Верховна Рада України, Комітет з питань екологічної політики, природокористування та ліквідації наслідків Чорнобильської катастрофи. – К. : Парлам. вид-во, 2015. – 91 с.

REFERENCES

1. *Prister B.S., Kliuchnikov A.A., Bariakhtar V.G., Shestopalov V.M. and Kukhar V.P.* Problemy bezopasnosti atomnoi energetiki. Uroki Chernobylia : monografiia [Problems of Nuclear Power Safety. Lessons of Chernobyl : Monograph]. Chernobyl (Kyiv region); 2016 : 116 p. (in Russian).

2. *Zykova I.A. and Arkhangelskaia G.V.* Radiotrevozhnost naseleniia zagriaznennykh territorii i mery po ee snizheniiu: posobie dlia spetsialistov sluzhb Rospotrebnadzora [Radioanxiety in the Population of Contaminated Territories and Measures for its Decrease: Manual for Specialists of Rospotrebnadzor Services]. Sankt Petersburg; 2007 : 24 p. (in Russian).

3. *Melnitskaia T.B.* Informatsionno-psikhologicheskaia bezopasnost naseleniia v usloviiakh riska radiatsionnogo vozdeistviia: kontseptsiia, model, tekhnologii : diss. … doktora psikhologicheskikh nauk [Information–and-Psychological Safety of the Population under Conditions of Radiation Effect Risk: Conception, Model, Technology : Doctor of Sciences (Psychology) Thesis]. Sankt Petersburg ; 2009 : 429 p. (in Russian).

4.*Marchenko T.A. and Abramova V.N.* Kontseptsiia sotsialno-psikhologicheskoi reabilitatsii grazhdan, podvergavshikhsia avariinomu vozdeistviiu vsledstvie avarii i katastrof : prakticheskoe rukovodstvo po sovershenstvovaniiu informatsionnykh tekhnologii po rabote s naseleniem radioaktivno zagriaznennykh territorii [Conception of Social-and-Psychological Rehabilitation of the Citizens Exposed to the Accidents and Catastrophes: Practical Manual on the Improvement of Information Technology for the Work with the Population of Radioactively Contaminated Territories]. Obninsk (Russia) : Prognoz ; 2004 : 27 p. (in Russian).

5 *Rumiantseva G.M. and Chinkina O.V.* Radiatsionnaia gigiena. 2009 ; 2 (3) : 53-58 (in Russian).

6. Chornobyl i sotsium. Issue 4: Dynamika sotsialnykh protsesiv: sotsialno-psykholohichnyi monitorynh naslidkiv Chornobylskoi katastrofy [Chornobyl and Society. Issue 4 : Dynamics of Social Processes : Social-and-Psychological Monitoring of the Consequences of Chornobyl Catastrophe]. / Institut sotsiolohii NANU. Kyiv; 1998 : 247 p. (in Ukrainian).

7. Kyivskyi mizhnarodnyi instytut sotsiolohii Samootsinka stanu zdorovia naselennia Ukrainy. 2013 [Kyiv International Institute of Sociology. Self-Appraisal of the Health State of the Population of Ukraine. 2013]. Available at: http://kiis.com.ua/?lang=ukr&cat=reports&id=212&page=6 (in Ukrainian).

8. Pro zniattia z ekspluatatsii Chornobylskoi AES, obiekt «Ukryttia» ta perspektyvy rozvytku zony vidchuzhennia : mater. parlamentskykh slukhan u Verkhovnii Radi Ukrainy 4.03.2015 p. [On the Removal from Service of the Chornobyl NPP, “Shelter” Object and Prospects of the Development of Alienation Zone : Materials of Parliamentary Discussions at the Verkhovna Rada of Ukraine, March 4, 2015]] Kyiv : Parlamentske vydavnytstvo; 2015 : 91 (in Ukrainian).

Надійшло до редакції 16.08.2016

Table 6

The relationship between health self-assessment and existence of the Exclusion Zone as legacy of accident on Chornobyl NPP

Existence of the Exclusion Zone	Health status					
	excellent	good	satisfactory	bad	very bad	Totals
yes	224	1088	1091	151	16	2570
Column, %	81.75%	86.83%	90.69%	91.52%	100%	
Row, %	8.72%	42.33%	42.45%	5.88%	0.62%	
Total, %	7.69%	37.38%	37.48%	5.19%	0.55%	88.29%
no	50	165	112	14	0.00%	341
Column, %	18.25%	13.17%	9.31%	8.48%	0.00%	
Row, %	14.66%	48.39%	32.84%	4.11%	0.00%	
Total, %	1.72%	5.67%	3.85%	0.48%	0.00%	11.71%
Totals	274	1253	1203	165	16	2911
Total, %	9.41%	43.04%	41.33%	5.67%	0.55%	100%