

# A Comparative Study of Mental Health Status, Health Beliefs, and Health/Risk Behaviors Among Soviet Immigrants from the Area of Chernobyl

Armin D. Weinberg, Ph.D.; Larry Laufman, Ed.D.; Jennifer Cousins, Ph.D.; Alexander Siegel, Ph.D.

## Specific Aims

The purpose of this project will be to assess the health beliefs and participation in health/risk behaviors among Jewish immigrants from areas affected by the Chernobyl nuclear accident. The basic research question is whether Jewish immigrants from Chernobyl and non-Chernobyl areas have different health/risk concerns and "worldviews," and if so, to what degree do such differences contribute to different health/risk behaviors. Health/risk behaviors of interest will include smoking, substance abuse, alcohol consumption, as well as preventive health behaviors such as exercise, diet, screening/well-patient medical exams.

## Background and Significance.

Reported response to the Chernobyl experience has been variable. For instance, in Sweden, anxiety about radiation risk was increased, with people in more exposed areas being predictably more concerned than those farther away (Sjoberg and Drottz, 1987). In America, news of Chernobyl was reflected in increased nuclear anxiety among college students, at least in the near aftermath of the accident (Newcomb, 1989). However, in another study, concern about cancer and genetic effects actually decreased one month later (Lindell and Perry, 1990). After the accident, the rate of legal abortions increased in Denmark (Knudsen, 1991) and Sweden (Odlind and Ericson, 1991). In Sweden, the rate seems to have been part of an ongoing trend not related to Chernobyl. In the Danish study, the researchers speculate that, given the comparatively small increase in radiation, the abortions may actually have resulted in more fetal deaths than the nuclear accident itself would have. In Finland, there seemed to be no difference in rates for abortion, stillbirths, preterm births, or congenital malformations (Harjulehto, et al., 1991).

The literature on psychooncology suggests that cancerphobic reactions can range from delusional and factitious symptoms, to delay in seeking examination of real symptoms, to an extreme of suicide (Chatton, et al., 1990; Holland, 1989; Levi, et al., 1991; Storm, et al., 1992). It is not clear what the effect of an uncontrollable experience like Chernobyl would be on health locus of control, on future preventive health behaviors, or on risk-taking behaviors.

## Preliminary Studies

No studies have addressed the larger psychological context of health beliefs and behaviors in general among those affected by the Chernobyl accident. Some Russian studies have looked at the immediate psychological effects of the Chernobyl disaster on its survivors (Aleksandrovskii, et al., 1991; Revenok, 1991). Katz, et al. (1991), have examined psychological distress among immigrants to Israel from the Chernobyl area. They have noted not only the normal stress of recent immigration but also increased fears of radiation, cancer, and future birth defects. Behaviorally, adolescents often participate in risk-taking activities (e.g., smoking, drinking, driving fast, or not using seat belts) as part of their normal developmental activities (Baumrind, 1987; Jessor, 1984; Shedler and Block, 1990). The present investigators have studied family patterns of disease (Iammarino and Weinberg, 1987) as well as risk taking behavior (Siegel, Parsons, and Weinberg, 1991). Their findings, in support of the larger health literature, shows that children and adolescents' health and health/risk behaviors take place in a constellation of adult health beliefs and behaviors which form part of the family context.

## Research Design and Methods

Hypotheses. Specific hypotheses to be tested are that, compared with Jewish immigrants from non-Chernobyl areas, those from areas exposed to Chernobyl radiation will have a more external and/or fatalistic health locus of control, perceive themselves to be more at risk, participate more in health/screening behaviors, and participate more in risk behaviors such as smoking, alcohol consumption, etc.

Sample. In Houston, Texas, the Soviet Jewish Resettlement Office of the Jewish Family Service estimates that there are about 300 Soviet Jewish families that have immigrated thus far to Houston. Families from both Chernobyl and non-Chernobyl areas will be interviewed as comparison groups so that differences associated with immigrant status may be distinguished from those that may be associated with the Chernobyl experience. For purposes of analysis, subjects will be broken into age cohorts. For instance, in 1986 at the time of the accident, there were groups of adults, 15-19 year-olds who are now young adults, 8-10 year-olds who are now adolescents, and new-borns who are now 6-8 year-olds.

Measures. Specific measures will include a Health Locus of Control Questionnaire, the Rand Health Insurance Study Batteries (Physical Health, Mental Health, Social Health, General Health Perceptions (Bowling, 1991), the Risk Involvement and Perception Questionnaire (Cousins et al., 1992). For young children, we will use the Achenbach Child Behavior Check List (mother administered). Adolescents and young adults will be administered the Jesness Personality Inventory and the Youth Self-Report Checklist. Additional measures of peer and family relations will be reviewed during Phase 1 of the study. When possible, both parents will be recruited in addition to the children in order to form a family context for health/risk beliefs and behaviors. For young children, the interviewer will use a structured play protocol to elicit health concerns. Questionnaire administration and interviews will be conducted in the subjects' homes by bilingual interviewers.

Two individuals in particular will be of considerable help to project activities. Dr. Siegel, one of the co-principal investigators, is currently supervising Ms. Rita Shapiro, a Russian born graduate student in psychology at the University of Houston. Ms. Shapiro has been in the United States for over ten years, is fluent in both English and Russian, and can serve as an excellent liaison with the participating subjects. Dr. E. Vaintrub, one of the consultants to the TMH/BCM research team, has also recently immigrated from the Ukraine and will work closely with the project.

The project will progress in three phases over 24 months:

Phase 1 -- 4 months.

Project staff will consult with Israeli and Russian researchers who have already developed base questionnaires for use with subjects from the Chernobyl areas. Where appropriate, standardized or at least overlapping protocols with common questions will be developed. During this period, questionnaires will be translated into Russian and bilingual interviewers will be recruited and trained. Contacts will be made through the Jewish Family Service, the local Jewish Federation, fraternal organizations such as B'nai B'rith and Hadassah, etc., to locate and make contact with Soviet Jews in Houston, Texas. It is anticipated that subject recruitment will proceed in tandem with activities of the Chernobyl Registry activities.

Phase 2 -- 4 months.

Pilot test and revise the questionnaires and interview protocols with a sample of ten Soviet Jewish families in Houston.

Phase 3 -- 16 months.

Data collection targeting all Soviet Jewish families in Houston.

Data analysis will be ongoing throughout this phase.

## References

Aleksandrovskii IuA; Rumiantseva GM; Iurov VV; Martiushov AN. Dynamics of mental adaptation disorders in chronic stress among the population after the accident at the \*Chernobyl\* nuclear power plant. (English Abstract of:) *Dinamika psikhicheskoi dezadaptatsii v usloviakh khronicheskogo stressa u zhitelei raionov, postradavshikh posle avarii na Chernobyl'skoi AES. Zhurnal Nevropatologii I Psikhatrii Imeni S. S. Korsakova*, 1991. 91(12):3-6.

- Baumrind D. A development perspective on adolescent risk taking in contemporary America. In C.E. Irwin (Ed.), Adolescent Social Behavior and Health. San Francisco: Jossey-Bass, 1987.
- Bowling, Ann. Measuring Health: A Review of Quality of Life Measurement Scales. Philadelphia: Open University Press/Milton Keynes, 1991, pp. 73-81.
- Chatton RJ; el May H; Raymond L. 'The risk of suicide in cancer patients derived from a cancer registry' (Etude du risque de suicide chez les patients cancéreux a partir d'un registre du cancer.). Revue d'Epidemiologie et de Sante Publique. 1990. 38(2):125-31.
- Cousins JH; Siegel AW; Rubovits DS; Cuccaro P; Parsons JT; Lavery B. Affective and Cognitive Components of Adolescent Risk Taking. Submitted to Journal of Youth and Adolescence.
- Harjulehto T; Rahola T; Suomela M; Arvela H; Saxen L. Pregnancy outcome in Finland after the Chernobyl accident. Biomedicine and Pharmacotherapy. 1991. 45(6):263-6.
- Holland JC. Fears and Abnormal Reactions to Cancer in Physically Healthy Individuals. Ch. 2 in Holland JC and Rowland JH, eds., Handbook of Psychooncology: Psychological Care of the Patient with Cancer. New York/Oxford: Oxford University Press, 1989, pp. 13-21.
- Iammarino NK; Weinberg AD. 1987.
- Jessor R. Adolescent development and behavioral health. In J.D. Matarazzo, S.M. Weiss, J.A. Herd, N.E. Miller, and S.M. Weiss (Eds.), Behavioral Health. New York: John Wiley & Sons, 1984.
- Katz M, Knobler H, Weshler Z, Lerner Y. "Radiophobia" and Separation Anxiety among Children from the Area of Chernobyl: An Israeli Experience, with Exacerbation During the Gulf War. Submitted for publication. 1991.
- Knudsen LB. Legally induced abortions in Denmark after Chernobyl. Biomedicine and Pharmacotherapy. 1991. 45(6):229-31.
- Levi F; Bulliard JL; La Vecchia C. Suicide risk among incident cases of cancer in the Swiss Canton of Vaud. Oncology. 1991. 48(1):44-7.
- Lindell MK; Perry RW. Effects of the Chernobyl accident on public perceptions of nuclear plant accident risks. Risk Analysis. 1990 Sep. 10(3):393-9.
- Newcomb MD. Assessment of nuclear anxiety among American students: stability over time, secular trends, and emotional correlates. Journal of Social Psychology. 1989 Oct. 129(5):591-608.
- Odlind V; Ericson A. Incidence of legal abortion in Sweden after the Chernobyl accident. Biomedicine and Pharmacotherapy. 1991. 45(6):225-8.
- Revenok AA. The structural-dynamic characteristics of the reactive psychoses in persons subjected to ionizing radiation exposure as a result of the accident at the Chernobyl Atomic Electric Power Station. (English Abstract of:) Strukturno-dinamicheskaia kharakteristika reaktivnykh psikhovoz u lits, podvergovshikhisia vozdeistviiu ioniziruiushchego izlucheniia v rezul'tate avarii na Chenobyl'skoi AES. Vrachebnoe Delo. 1991 Aug. (8):83-6.
- Shedler J; Block J. Adolescent drug use and psychological health: A longitudinal inquiry. American Psychologist, 1990. 45:612-630.
- Siegel AW; Parsons JT; Weinberg AD. Breaking the Family Tradition of Smoking: Target-Adolescents. Research Report to the American Heart Association, Texas Affiliate, 1991.
- Sjoberg L; Drott BM. Psychological reactions to cancer risks after the Chernobyl accident. Medical Oncology and Tumor Pharmacotherapy. 1987. 4(3-4):259-71.

Storm HH; Christensen N; Jensen OM. Suicides among Danish patients with cancer: 1971 to 1986. Cancer. 1992 Mar 15. 69(6):1507-12.

### Budget

	Year 1	Year 2
Personnel		
Project Investigators	15,000	15,600
Interviews @ \$100		
Year 1 - 75	7,500	
Year 2 - 225		22,500
Data Entry \$20,000 X 50%	10,000	10,000
Secretary \$25,000 X 25%	6,250	6,250
Supplies		
Printing	1,000	1,000
Office supplies @ \$100/month	1,200	1,200
Telephone @ \$500/month	6,000	6,000
300 audiotapes @ \$3	600	
Equipment		
4 tape recorders @ \$75		300
4 laptop computers @ 1,500		6,000
1 personal computer @ 2,000		2,000
Total	55,850	62,550
Grand Total		118,400