Chernobyl: systematic approach needs to be adopted to tackle the actual biggest impact

On April 26th, 1986, an explosion and later a fire happened in the fourth reactor of the Chernobyl nuclear station, located where now is Ukraine. 600,000 people participated in the cleaning work of the radioactive materials leaked. 116,000 nearby residents were evacuated and relocated permanently by the Soviet government, and I will thereafter refer to them as the “evacuees”. Since then, a debate never stopped, regarding what is the biggest impact of the nuclear disaster on the evacuees. This debate is of importance to many people, since nuclear disasters in Chernobyl, Three Mile Island in Florida and Fukushima in Japan have shown that the worst nuclear accidents can happen in some of the world’s most powerful countries. Given the radioactive nature of this accident, many people believed that the biggest consequence on the evacuees is their severely damaged health. Former UN General Secretary Kofi Annan is among those, who claimed that “the exact number of victims may never be known, but 3 million children require treatment and…many will die prematurely” (Greenpeace). On the other hand, World Health Organization (WHO) maintains that the mental health impact of Chernobyl is “the largest public health problem caused by the accident to date” (legacy, 36). Taking these arguments into consideration, I would therefore ask the question, what is the biggest impact of the Chernobyl nuclear disasters on the evacuees, the physical health damage, or the mental health problem? In this paper, I identify the answer by first analyzing the credibility of the arguments that physical health damage is the biggest impact, then assessing the gravity and the practical implications of the mental health issues. Contrary to the prevalent belief that evacuees’ physical health is impacted the most in the Chernobyl nuclear disasters, I argue that the biggest ramification of the accident on the evacuees is their crippled mental health.

Based on analysis of previous research, I argue that there is no conclusive evidence that evacuees’ physical health is damaged. Given the scale of the disaster, it’s no surprise that there has been a wealth of research investigating relationship between radiation and evacuees’ illnesses, and the popular opinion easily assume that health is impacted the most. Indeed, WHO points out that “birth rate is lower in contaminated areas” (legacy), and there has been report of “elevated incidence of all solid cancers combined” (Cardis, 136), but I think these observations are insufficient to directly draw a one-to-one relationship between radiation and evacuees’ poor health, because it fails to take into account the complex nature of health, as well as numerous confounding factors. Alcohol and tobacco uses are reported as common among the evacuees (), are they going to add to the probability of cancer? Stress and anxiety are prevalent among evacuees as well, and WHO claims them to be determinant of people’s health. They can also increase illness risk. More frequent medical checkup is among the compensation plan for the evacuees (), is it possible that more people are diagnosed of infirmity because of the increased frequency of exams? Not to mention that the probability of getting cancer is rising in the whole world in general (WHO, 2 chernobyl at 30), how can we eliminate this effect when calculating Chernobyl’s impact on evacuees’ health?

I am not saying that radiation has no impact on evacuees’ health, I am arguing that it is imprudent to impose a causational relationship between radiation and diseases, just because they happened in consecutive order, without taking various confounding factors into consideration. This idea goes beyond mere suspicion and is backed by quantitative evidence as well, as numerous studies points to the fact that the average amount of radiation absorbed by evacuees is about 30mSv, accumulated over twenty years(). This is controllable, as people living in certain regions in India, Iran, China and Brazil get more radiation than that, just from the cosmic rays given off by the sun.

However, it will be a cruel oversimplification of evacuees’ suffering if I stop here and conclude that there is no strong evidence of their health being damaged. Though many papers published by Greenpeace or WHO titled with “the Chernobyl Catastrophe: consequences on human health”, or “Health effect of the Chernobyl accident” stop short at the physical health level, list some numbers, then either conclude that evacuees’ health is devastated or intact, it is an extremely incomplete analysis of the keyword “health”. The United Nations’ definition for “health” is that it is “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (WHO). We cannot close the case of examining Chernobyl’s impact on evacuees’ “health” by only analyzing the physical part of it, but without the mental and social well-being part. Contrary to common scholarly works, I want to be thorough and have a more holistic view of the topic “health”.

I therefore argue that mental health damage is the biggest impact on Chernobyl’s evacuees, because for them, mental health is the pivot of physical health and social wellbeing. I will argue that not only is their affected mental health impacting their physical health and social well-being negatively, the latter two factors also contribute negatively to their mental well-being.

Chernobyl’s impact on mental health certainly doesn’t get as much attention as physical health, as is pointed out that 30 years has passed without a single Chernobyl related mental health intervention trial being implemented (the 30 year mental health legacy, 181). However, there is no lack of records of it. Common well-documented symptoms include anxiety and stress, perception of reduced intellectual achievement, lower self-esteem, feeling of no future and control over lives, escapism through alcohol and many more. Take anxiety as an example, anxiety among the evacuees are “twice as high as non-exposed population” (Chernobyl at 30). It is common for researchers like Bromet and () to stop at the level of listing various mental health levels without preceding further to examine the intimate relationship between mental health, physical health, and social well-being. It is a dangerous tendency to treat mental health issues of the evacuees as a standalone problem, because without understanding the causational interaction between the three elements of health, we can hardly provide effective measures to assuage the psychological burdens of the evacuees, as well as get useful guidance in face of future accidents.

I first uncover the relationship between physical and mental health by arguing that they are cause and effect of each other. UN identifies mental health issues as one of “the most important determinant of mortality”, so the link from mental health to physical health is obvious. Some mental health problems appear in the form of physical illnesses, including pressure in the chest, sleep disturbance, or indigestion (Record). Others are direct consequences of the reckless behaviors caused by stress. For example, using alcohol as an escape significantly increases risks for stomach cancers (record). Stress and anxiety in general are not a good thing for physical health either (UN, EU Commission, the determinant thing). However, the link from physical health to mental health doesn’t mean that having radiation-induced illnesses causes psychological issues, as I previously noted, there is no conclusive evidence for physical illnesses explicitly caused by radiation. Rather, it is the perception of the illness caused by radiation that is causing mental issues among evacuees, which is believed to be one of the biggest stressors and engender a feeling of fatalism among the evacuees (Legacy, 41). The feeling that cancers or leukemia is looming creates tremendous stress, further worsen the effect mental health of the evacuees, and this in turn give rise to worse physical health.

So what if we uncover the relationship between physical and mental health among the evacuees? The practical implication from this mutual causational relationship is that, applying a strict dichotomy between mental and physical health here is dangerous, and ineffective in helping the evacuees. Instead, we need to treat them as a system, and only by tackling the issue from a systematic level, can we really solve the problem. There is no way to alleviate or even tell the physical health impact without providing psychological intervention, since the high stress and anxiety, and the reckless drinking patterns induces, will worsen physical health, and confound any attempt to uncover the scale of the physical health impact. Similarly, it may seem irrelevant between investing money to determine the actual physical health impact of Chernobyl, and reducing mental issues among evacuees, but psychological issues can hardly be truly solved if the evacuees aren’t assured that the radiation, they received doesn’t make significant impact to their physical health. The tendency to attribute any disease to Chernobyl will make them more desperate about their lives.

Next, I move on to argue that mental health issues may prevent evacuees from successfully reintegrating into the society, but at the same time, the society is also pushing the evacuees away. Given the psychological issues listed above, it is almost self-evident that they may contribute to evacuees’ difficulty merging into the new environment where they are relocated. Their self-perceived reduced intellectual performance and the consequent lower self-esteem (record) may make them less confident. Using drinking and drug as escapism is not what model employees would do. Many of the evacuees also have a deep feeling of victimhood, which therefore create a culture of dependency (). Because they perceive themselves as victims, they don’t bother to try to become independent, and think that they are unconditionally justified to receive help from the government and others in the new environment.

Meanwhile, society is pushing the victims away as well. The initial compassion is quickly replaced with jealousy and hatred, because of the perceived imbalance after the relocation. Many evacuees get free apartments immediately, while the local people have been waiting in line for ten years. The free meals for affected children and the cash compensation became topics of contention. Added with the false belief that the evacuees carry radiation and may have cancer, employers are reluctant to hire them. Their identity as evacuees become a label of rejection and stigmatization. Perhaps this is why, in a survey conducted among the children evacuated, their overriding hope is to “merge into society and not be different”. From the response of the children, we can tell that the society’s rejection of the evacuees is causing them tremendous mental pressure.

Why is examining the relationship between mental health issues and social reintegration so important? It teaches us the lesson that we shouldn’t treat these two problems as separate issues, because they have an intimate relationship and affect each other. The mental scars of the evacuees cannot be undone merely by economic compensations, but takes a whole society to heal. Simultaneously, policies for evacuees to assuage their mental pain must take the feelings of the broader society into consideration, because these two groups are organically intertwined, and the evacuees may never reintegrate if others feel a deep sense of injustice.

Negligence of the interaction between mental health and social well-being is serious. An example is the economic compensation policy for the evacuees. Given the severity of the mental impact, the evacuees are absolutely entitled to get compensations. However, when 5-7 % of the annual GDP in Ukraine, or USD 148 billion is spent on compensating and recovering the people affected, particularly in a country which is not wealthy, the broader society also have the right to be mad at the recipients of such welfare and reject them consequently, which further exacerbates evacuees’ mental stress. This money could have made a tremendous improvement on healthcare or education, and much more money for the evacuees means much less money for public spending. In other words, the justice for the evacuees is injustice for the broader populations, and their jealousy is understandable, though undesirable. Furthermore, the compensation also creates the mental health problem of dependency among evacuees, which make them even harder to reintegrate.

The lesson from the previous example is that, when making public policies to facilitate evacuees’ social reintegration and alleviate mental pressure, being negligent of the wide populations’ opinion is consequential. Similar to the relationship between physical and mental health, we need to tackle mental and social well-being issues from a systematic level, rather than making separate plans, like optimizing evacuees’ mental health by compensating, but suboptimizing their social integration simultaneously.

To conclude, I first argued that contrary to popular opinion, there is no conclusive evidence that evacuees’ physical health is damaged, which puts mental health issues as the main impact of the Chernobyl accident. I further argue that since mental health is the pivot between physical health and social well-being, we should go beyond the boundary of treating them as separate issues. Rather, we should study and solve them from a systematic level, recognizing the intimate relationship between the three elements of a holistic health. Failure to do that will never help evacuees attain full health again. This study goes beyond Chernobyl, and can be guidelines for future large-scale health emergencies.

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