



Human Dimensions Impacts of Oil Spills

Psychological health impacts

Cleanup workers and residents living in the vicinity of an oil spill have suffered acute and chronic health impacts. These impacts have physical

and psychological symptoms [1-5, 7, 8]. Emotional or psychological impacts can be direct impacts, such as when a great loss is experienced by damage to cherished or sacred sites. They can emerge in conjunction with physical harm, as the trauma of a debilitating illness limits a person's quality of life. They can also emerge indirectly from a spill because of post-spill experiences, which most notably include "the second disaster" of spill-related litigation. Psychological health impacts include increased stress, fear and attitudes of vulnerability, and post-traumatic stress disorder [1]. All of these can contribute to illness and personal dysfunction. Individual and group responses to oil spills are determined by the magnitude of the disaster, individual's interpretation of the situation, and psychological and social resources available to cope with the event. Therefore two disasters may have a very different economic, psychological, social or even political impact.

Psychological symptoms

- Increased prevalence of mental disorders such as depression, anxiety and Post-Traumatic Stress Disorder
- Increased levels of stress
- Increased drug and alcohol abuse
- Increased mental distress
- Feelings of helplessness, betrayal and anger
- Self-isolation and avoidance of spill related discourse
- Litigation stress syndrome
- Children afraid of being left alone, have troubles getting along with parents and fighting with other children

Long term psychological impacts: *M/V Exxon Valdez*

On March 24, 1989, the supertanker *Exxon Valdez* spilled 10.8 million gallons of crude oil in Prince William Sound, Alaska. The spill is considered one of the most devastating technical disasters ever to occur at sea. Palinkas et al. concluded that "the oil spill's impact on the psychological environment was as significant as its impact on the physical environment" [4]. Psychological impacts were triggered by the spill and the response, but litigation as a second disaster has also been the topic of several studies [2, 6-8]. High levels of psychological impacts were reported in followup studies six and 17 years after the spill [7, 8].

The small population of the Valdez-Cordova area (10,195 inhabitants: 75% White, 14% Native American, and 11% other) was particularly vulnerable because of its high dependence on fishing and isolation [1-4]. The oil impacted much of the marine life in the surrounding area, thereby severely disrupting subsistence activities in native villages, [5]. All commercial fishermen were impacted by the closure of fisheries, and the herring fishery collapsed entirely. Other sources of stress were: short and long term economic loss, having to sell possessions to compensate for losses, unequal distribution of cleanup job and compensation for use of equipment and boats, influx of outsiders strained community services created quarrels and resentment, and environmental damage.

Psychological distress over the lawsuit and the expectations that were tied up with the Supreme Court ruling in June 2008 continue to plague many members of the community [6, 8]. For nearly two decades, people remained hopeful that they would receive a significant payment in compensation for their losses. This hope prevented many people from moving ahead with their lives, and kept them immersed in the emotions associated with the impacts from the oil spill and the behavior of Exxon during the subsequent legal battles. For some, those emotions continue to linger in the form of anger and resentment for Exxon.



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Short term psychological impacts: *M/V Prestige*

On November 19, 2002, the tanker *Prestige* ruptured in half and sank during a storm off of Galicia, in northwestern Spain. It released over 20 million gallons of oil into the sea. About 19 million gallons of oil reached the coast in three successive black tides spreading along more than 11 miles of Galician, Cantabrian and French coasts. The disaster had serious environmental and economical consequences. Moreover, since 1970 this was the fifth major spill in the area (*Polycommander*, 1970; *Urquiola*, 1976; *Andros Patria*, 1979; *Aegean Sea*, 1992; and the *Prestige*).

The short term psychological impacts included stress and anxiety [9]. In the short term, individual and families faced high levels of stress caused by the economic loss. The day following the spill, a ban on fishing and shellfishing was imposed. 41,000 people directly employed in the fishing sector went out of work just before the height of the holiday season. The clean up operation lasted for months after the accident and the affected towns hosted hundreds of volunteers.

However, despite the importance and size of the spill, individuals' psychological impacts were minimal, regardless of their exposure or the severity of oil pollution in residing towns [10, 11]. Timely compensation, alternative employment, sympathy, and solidarity showed during the cleanup were factors that mitigated the psychological impacts of the spill and hastened the process of post-disaster recovery [10, 11]. A few weeks after the spill, fishermen (ship owners and crew) received their first compensatory payments. One year later, over 114 million Euros had been paid to the fishing sector [12] and Spanish boats were granted permission to access Morocco's fishing grounds for three months. All in all, more than 10,000 fishermen and local residents were hired to participate in cleanup. Fifty-five thousand cleaning kits (protective clothing, breathing masks, etc.) were distributed to volunteers [9]. The response was designed to mitigate both physical and psychological impact from the spill.



Volunteers cleaning in Galicia

Photo: X. Rey in [5]

References

1. Picou, S. 1992. Disruption and stress in an Alaskan fishing community: initial and continuing impacts of the Exxon Valdez oil spill, *Organization & Environment* 6(3): 235-257
2. Picou J., Gill D., Cohen M. (ed) 1996. *The Exxon Valdez Disaster: Readings on a Modern Social Problem*. Dubuque, IA: Kendall-Hunt.
3. Arata, C. et al. 2000. Coping with technological disaster: An application of the conservation of resources model to the Exxon Valdez oil spill, *Journal of Traumatic Stress* 13(1); 23-39
4. Palinkas, L. et al. 1993 Social, cultural, and psychological impacts of the Exxon Valdez oil spill, *Hum Organ* 52(1): 1-13
5. Palinkas, L. et al. 1993. Ethnic differences in symptoms of post-traumatic stress after the Exxon Valdez oil spill. *Prehosp Disast Med* 2004;19(1):102-112.
6. Picou, S. et al. 2004. Disaster, Litigation, and the Corrosive Community, *Social Forces* 82:4 1497-1526
7. Picou, J. S. and Gill, D. A. 1996. The Exxon Valdez oil spill and chronic psychological stress. In S. D. Rice, R. B. Spies, D. A. Wolfe and B. A. Wright (eds.), *Proc of the Exxon Valdez Oil Spill Symp* (Pp. 879-893). Bethesda, MD: Amer Fish Society.
8. Picou, S. and Martin, C. 2007. Long-Term Community Impacts of the Exxon Valdez Oil Spill: Patterns of Social Disruption and Psychological Stress Seventeen Years after the Disaster. Final report submitted to the National Science Foundation, Office of Polar Research, Washington, D.C., Award Number: 0002572.
9. Garcia Pérez, J. 2003. Early Socio-political and Environmental Consequences of the Prestige Oil Spill in Galicia, *Disasters* 27(3): 207-223
10. Carrasco, J. 2007. Health-related quality of life and mental health in the medium-term aftermath of the Prestige oil spill in Galicia (Spain) a cross-sectional study, *BMC Public Health* 7:245
11. Sabucedo, J. et al. 2009. Psychological impact of the Prestige catastrophe, *Inter Jour of Clin and H. Psych* 9(1):105-116
12. Xunta de Galicia. 2003. Informacións sobre o "Prestige": Galicia percibiu máis de 114 millóns € para paliar-los efectos do Prestige sobre o sector pesqueiro. Retrieved online Sept 15, 2009 : URL <http://www.xunta.es/periodico/prestige/prestige996.pdf>.