

# Community exposure to asbestos in Casale Monferrato: from research on psychological impact to a community needs-centered healthcare organization

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## Abstract

**Introduction.** Asbestos exposure has a negative impact on both the physical health of the population, and on its psychological and community components. Usually such issues are addressed via top-down strategies, but this approach is unable to address the interpersonal processes connected to living in a specific context.

**Method.** The work carried on in Casale Monferrato since 2006 proceeds in the opposite direction: promoting a different interaction between health system policy-makers and administrators, field actions, and system thinking. Our goal was to create a reliable model that could fit into other contexts, while being flexible and adapting to specific backgrounds. Starting from the results obtained during a first assessment phase, a psychoanalytic group was arranged, aimed at promoting the symbolization and signification of the emotions related to the ill-fated prognosis.

**Results.** The clinical work offers a space for handling the illness and its psychological impact, in order to achieve: 1) a subjective perception of themselves as not impotent and alone; 2) improved abilities of caregivers to manage the disease; 3) enhanced quality of residual life.

**Conclusions.** An integrated multidimensional intervention promotes resilience in the community, but it requires time, for patients, relatives, and the professionals involved. Only with the combined support of oncologists and the entire ward staff will an internal trust be free to grow within a somato-psychic space able to accommodate and sustain the participants during the final stages of their own life, or that of someone close to them.

## Key words

- contaminated sites
- asbestos
- psychological effects
- resilience
- mentalization

## INTRODUCTION

In the European Union, several industrial facilities are present which played – and continue to play – a major role in the contamination of soil, water and air, with relevant consequences for public health. The World Health Organization (WHO) defines contaminated sites (CSs) as “localized areas hosting or having hosted large and/or hazardous industrial facilities, producing or with a strong potential to produce environmental contamination resulting in health impacts” [1].

The National Priority Contaminated Sites (NPCS) are areas comprising one or more contaminated sites identified through analysis of the contaminating agents in terms of quantity and health hazard, environmental impact on nearby areas, ecological hazard, and damage to cultural and environmental assets (Legislative Decree 22/97; Ministerial decree 471/99; Legislative

Decree 152/2006). They are supposed to undergo a thorough process of environmental cleanup. In Italy, the Ministry of Environment identifies and recognises NPCSSs, defined as sites of national interest (SIN – *siti d'interesse nazionale*). A national epidemiological surveillance program also ensures a permanent monitoring of population health [2].

Living on or near a CS has a negative impact on the physical health of the population, and on its psychological and community components. Among contaminating agents, asbestos differs from others (*e.g.*, nuclear radiation, oil) in that it causes specific diseases (*i.e.*, malignant mesothelioma and asbestosis). The exposure to asbestos and the diagnosis of asbestos-related diseases can have a traumatic impact that is not limited to those directly affected: living in such a potentially harmful environment can move unconscious conflicts between life and death,

intense feelings of helplessness, hopelessness, guilt, and shame, as well as rage and the desire for revenge [3, 4]. At the intrapsychic level, depression, fears, and anxieties emerge, while at the interpersonal level, social withdrawal, loss of the sense of belonging, and loss of social cohesiveness are often observed [5-13].

Such evidence strongly suggests the need to adopt an integrated approach toward the patient, improving the development of active strategies by taking into account the particular features of the subject and his or her living environment.

### MIND DEVELOPMENT AND SOCIAL CONTEXT

Studies in neuroscience and psychoanalysis have demonstrated that significant interactions with the other are a necessary process in the creation and development of one's psychological reality: they influence cognition and the maintenance of high-quality social interactions. Based upon this process and related experiences, memory traces are stored in the brain and actively participate in the modeling of mental representations integrated with affect and somatic expressions [14, 15]. Body-based relational experiences profoundly impact the maturation of experience-dependent structures in the right hemisphere, which is involved in communicating and regulating affect. These embodied functions, typical of the psychoanalytic construct of "subjective implicit self," have a fundamental impact on every subsequent intersubjective interaction and on stress regulation [16, 17]. Cerebral structures in the right hemisphere play a major role in "*the innate psychobiological need for affiliation and social connection, and thereby for emotional regulation and personal growth*" ([18], p. 179) during the lifespan. fMRI research shows that the subcortical amygdala responds to directly perceived emotional stimuli, while the ventromedial cortex responds to cognitively elicited emotions. In most favorable contexts, the orbitofrontal cortex takes control of amygdala operations, coordinating exteroceptive and interoceptive functions more flexibly in response to condition changes [19]. In the more evolved stages, these aspects are integrated with language. Therefore, living in a specific context sets in motion an interpersonal process that has important consequences for ideation and behavior (for research on gene-environment in the development of human diseases see [20, 21]).

Caring for communities forced to deal with living in a CS implies taking into account the aspects mentioned above. From a psychological point of view, it is important to mentalize the loss, and to develop abilities that help in facing the internal conflict that arises from living in a place that is both a bearer of life and death. These have to be promoted on two different fronts: individual and social-interpersonal-transpersonal [3, 10].

### ASBESTOS EXPOSURE IN CASALE MONFERRATO

Casale Monferrato is a town located in North-West Italy, which is well known for the high level of mortality of its residents following asbestos exposure. Several lung diseases are connected both to past occupational

exposure, and to environmental exposure [22, 23]. For over 80 years, Casale Monferrato was one of the largest asbestos-cement producers, and the Eternit factory granted jobs and prestige for the population, until 1986, when production of such cement was declared illegal in Casale's District (its production was declared illegal on a national level in 1992, Law 257/1992). The exposure was not only limited to production itself, but also to:

- transportation of raw asbestos and final products between the factory, the warehouse, and the railway station;
- use of scrap materials by citizens for upholstery, in maintenance of private streets, and/or for thermal insulation in attics;
- illegal unloading from the Po's rivers, creating the "white shores" where inhabitants used to spend warm days.

In the Casalese community asbestos was present at every level: it was produced, consumed, and was a major driving force of the local economy. Although asbestos production was advantageous on many levels, in time it became evident that this production was nevertheless dangerous for the residents, causing deaths, and will continue to harm those residing in the Health District [3, 10]. As noted by the International Agency for Research on Cancer, all forms of asbestos are carcinogenic to humans. It causes mesothelioma and cancer of the lung, larynx, and ovary. Positive associations have been observed between asbestos exposure and cancer of the pharynx, stomach, and colorectum [24]. Among pathologies caused by asbestos exposure, malignant mesothelioma (MM) has received major attention. It is a rare form of tumor with a fatal prognosis, which develops almost exclusively from environmental exposure to asbestos. The incidence of MM in 2008-2012 was 72.8/100 000 and 33.2/100 000 among women in Casale Monferrato, and 42.2/100 000 among men and 20.1/100 000 among women in its health district, with a total 223 diagnosed cases of MM. Over 4/5 of these were not related to occupational exposure. On a physical level, its impact is devastating: pain, respiratory distress, fatigue, sleep disorders, and loss of appetite. The average survival rate is approximately nine months from diagnosis, and only 8% of patients are still alive after three years. Moreover, the latency from exposure to onset varies between twenty and forty-five years, probably because of the numerous genetic mutations that occur in the mesothelioma, and specific symptoms appear only later on [25, 26]. This implies that people living in the Casalese area are still at risk of developing MM, since the first symptoms can appear only thirty or forty years after exposure, and deaths will continue for at least twenty more years [27-30]. Despite being common knowledge, it remains a challenge to properly address the problem in terms of accommodation, support, and therapy.

Usually, such issues are addressed via top-down strategies: actions are planned on the "drawing board", often actions focused on the pathology itself instead of more broadly, based on the interconnection between patients, caregivers, and the general population. The former approach is unable to adequately address the

interpersonal processes connected to living in a specific context, undermining any chance of achieving effective results inside the community it was initially planned for.

The work that has been conducted in Casale Monferrato since 2006 proceeds in the opposite direction, promoting a different interaction between health system policy-makers and administrators, field actions, and “system thinking” [31, 32]. Such a trajectory ultimately allows coordination among policy, practice, and research.

This model is the result of a decennial work in the field, and arose progressively from evidence. Our goal was to create a reliable model that could fit into other contexts as well, such as different tumors (e.g., sarcoma, breast cancer) or different fields, while being simultaneously flexible and adaptable to the specific circumstances of all backgrounds.

### TOWARD AN INTEGRATED MODEL OF TREATMENT

The residents of Casale Monferrato became subjects of a community tragedy, in which illness and death were given a “geographical connotation”: the traumatic experiences became connected to the workplace, affecting the entire community. In such a situation subjectiveness had subsided and the sense of self melded with the sense of being part of a group through mass identification [3, 10, 33]. Thus, the individual self gave way to an ideal communitarian self, giving rise to fluctuations between the feeling of being appointed and the feeling of being resistant to the illness.

The multifaceted nature of the problem characterized the community both as an oppressed one, a victim of society and profit, and as a united community with the political and social agenda of obtaining recognition for the damage suffered. In time, the community assumed an image of resilience to the public opinion, but they talked in a kind of automatic way about the meaning of living in Casale, and being able to face the fear of death. However, this attitude did not really help in evolving, both on a somatic and on a psychological level, an appropriate and shareable representation of what was meant by living in a polluted environment. They were somehow unable to embrace the essence of resilience, intended as a midway space that allows the transition from dying to attachment to life [34]. In the beginning, facing death used to be contained; people died one by one, as if they were oppressed by some kind of a “cynical and wicked evil”, or death simply was considered the price to pay for industrialization and the wealth and opulence consequently acquired. Things would have been different if the deaths had occurred all at once. An open confrontation about dying from asbestos related diseases was extremely difficult, as it meant taking the risk of being identified as wanting the plant to be closed, which would inevitably trigger a reaction from the shareholders. No worker could place his own physical and psychological survival in second place, but seeking these goals meant somehow colluding with the industrial governance. Nevertheless, the constant increase in the number of deaths finally offered the opportunity to obtain recognition for the offence to which

the community was subjected.

In such a context, as well as in other CSs, a cumulative trauma originates, leading to a misunderstanding of the message sent by those in need of care to those who are supposed to provide care (e.g., health personnel, institutions, organizations, etc.), ultimately influencing the way the request for healthcare is conveyed. Moreover, since the entire population is considered at risk, the care providers to whom the subject relates during his evolution, are immersed themselves in the experience of living on a CS. A vicious circle is then established, based on the pathogenic stimulus. This implies a peculiar problematic clinging to the other in order to achieve novel psychological realities not exclusively based on the reality of the illness itself. Thus, it is not possible to interact with such communities only in terms of communication of the risks or in terms of the content of the message. Rather, an accurate analysis of the psychological characteristics of the receiver is required. Most notably, an analysis of those characteristics of the community mental life that are connected to living in a CS.

The need for an integrated model of treatment emerges as it allows:

- facilitation of a feeling of responsibility toward one's own health, and increases the adherence to treatment;
- acceptance and treatment of the psychological distress of both patients and caregivers from a multidimensional perspective;
- development of active strategies, starting from the specific features of the subject's living environment.

### A CLINICAL PSYCHOLOGY INTERVENTION

The repeated health requests made by the citizens led institutions to implement novel multidisciplinary interventions, with a strong accent on the evaluation of both patient's and caregiver's intrapsychic and relational dynamics. There was a need for the entire community to find a “third” interlocutor, namely an institutional figure, who would foster new reasoning about the problem. Thus, in 2006, first the Health Service and then the Regione Piemonte contacted the post-graduate specialization School in Clinical Psychology, of which the Author is Director.

This work, and the geographical proximity to Casale Monferrato, drove the author to a profound reasoning about what contribution a psychoanalytically oriented clinical psychology approach might bring, despite such massive trauma arising from living on a polluted area. This contribution could not ignore the importance of data underlined by institutions, because of their value on academic, political, and legal levels.

### *Evaluation of psychological effects clinically observed in patients and relatives*

The intervention considered a first research phase on a representative sample of citizens, for evaluating the dimensions of personality and cognitive, affective, and behavioral functioning. The research aimed to: 1) identify a communication strategy for risk exposure and diagnosis, based on the citizens' specific personality organizations; 2) promote a change in citizens' health re-

quests, which instead of being related to automatic processes and psychological features (*i.e.*, the fear of aerial contagion) would be grounded in real health needs; 3) develop a psychotherapeutic group intervention to address health needs.

Results showed how asbestos exposure configured itself as a traumatic event, leading to the loss of the healthy aspects of the self, confidence, and hope for the future. Both patients and relatives showed an impoverished affective life, somatizations, social withdrawal, difficulties in decision making as individuals and as a group, an amplified sense of discouragement and demoralization, deep feelings of helplessness and vulnerability toward real or imaginary threats, a general sense of failure in life, and the perception of lacking the necessary resources to face everyday life [7, 9]. The repeated requests for help subtended the profound need for help in handling what was happening to the community, to create a mental representation of it, and to be able to at least start putting into words the related affects [9].

### **The multifamily group**

Starting from the results obtained during the first assessment phase, a psychoanalytic group [35] was arranged, aimed at promoting the symbolization and signification of the emotions related to the ill-fated prognosis. The group constituted the most appropriate setting in promoting a deep change in a traumatized community, aimed at the development of Ego resources to better sustain those suffering parts of the Self. Indeed, during sessions new narrations about the somatopsychic distress developed [3, 10, 33].

Namely, it has been conducted a multifamily group based on the model first introduced in Argentina by Jorge García Badaracco [36, 37], for taking care of difficult psychiatric pathologies (the groups were led by the author of this contribution Antonella Granieri and Francesca Viola Borgogno, an individual and group psychotherapist candidate of the Italian Society of Psychoanalysis). According to the original setting, the group was open to anyone who wished to join: patients, relatives, health and assistance workers, and generally to any interested citizen. The choice of this specific kind of psychotherapeutic intervention was connected to the fact that the multifamily group was a particularly suitable instrument for helping pleural mesothelioma patients, who joined according to their specific timetable in relation to their physical condition.

Sessions were carried out weekly and lasted one hour and half. Every session was audio-recorded and transcribed verbatim at a later stage. About fifty people joined the group after it was first established, with an average of fifteen attendees per session. Most participants suffered the loss of more than one relative, others were affected by pleural mesothelioma or other asbestos related pathologies, while the health personnel participated only occasionally, due to "hospital emergencies". This attitude underlined a difficulty in differentiating the somatic features of the pathology from the psychological distress that emerged inside the group. The chance of getting deeply involved with the physical and psychological pain of those affected by a

debilitating and fatal illness was somehow prevented by an unconscious fantasy of being "stripped" of their professional identity, feeling naked in front of the psychic pain [3, 10, 33].

The clinical work focused on promoting the acknowledgment of a dysfunctional emotional regulation, collocated with work resources, environment and citizens, characterized by denying the connotations of death related to the production of asbestos.

Session after session, the group was gradually able to develop new expressions of resilience, putting aside the subject "asbestos", while acknowledging at the same time the motivation to fight to obtain recognition of the damages. This change, which was not easy nor painless, was achieved through the processing of "psychological hubs", in which aggressiveness and rage represented the preferred channel of communication.

Becoming able to tolerate such aggressiveness, and reclaiming the right to live despite the illness, led to an evolution of the more conflicted interpersonal relations. This was most notably so for topics of life and death, such as the effects, shared between the participants, of living in Casale, particularly those related to being a survivor. They became citizens not only as individuals, but also as a group, sustained by a more healthy resilience resulting from the expression and analysis of every different shade of trauma, rather than just an aggregation of people sharing a common goal. As individuals, they became able to gradually gain strength starting from their own pain, becoming more evolved and able to express themselves, carrying on their personal and social behaviors.

The psychotherapeutic work allowed for the maturation of new perspectives. Social interventions were no more focused on the corrupt nature of the events, but rather deeply rooted in the shared experiences of feelings arisen by living on a CS. It could be rightly said that the mind recovers the possibility of entering into a dialogue with the feelings connected to the trauma, without bypassing them towards actions that are apparently more assertive of one's sense of Ego. The analytic work created a space where thinking about the asbestos-related trauma could become a prelude to action. It could be said that through public-a(c)tion, the analytic word is turned into a language of effectiveness [38].

### **CONCLUSIONS**

Living on a CS leads to important consequences at the level of 1) "being" (that is, health and somatopsychic well-being); 2) "belonging" (the sense on being part of a community also when relating to economical features); 3) "becoming" (projecting one's expectations into the future) [39].

An integrated multidimensional intervention is therefore more efficient than other approaches, and allows acceptance of, and caring for, both patients and caregivers in psychological distress. The aim is to offer a conveying space for starting to handle the illness and its psychological impact, in order to achieve:

1. a subjective perception of themselves not as impotent and alone in face of the illness and death;
2. improved caregivers' abilities to manage the disease

and straightening families' and patients' competences in devising strategies to deal with the end of life;

3. enhanced quality of residual life, encouraging the recovery of lost or abandoned healthy habits, due to a perception of oneself – and the context – as diseased and dying.

It should be noted that the shared meaning of care and rescue offered to the citizen can play an important role in promoting resilience [40]. Such intervention requires time, for patients, relatives, and the professionals involved. Indeed, reaching a definitive deadly diagnosis is a particularly complex step. The patient should be notified of this by the oncologist and the clinical psychologist jointly, once a third space that includes psychological features has been created. This space is the therapeutic multifamily group, where new seeds of reasoning can sprout.

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Moreover, it is important to underline the centrality of cohesiveness during the sessions, for both patients and relatives, in order to achieve a continuous participation. Only with the combined support from oncologists and the entire ward staff – nurses in first instance, who are those who will actually follow the patients in managing the different phases of the disease – will an internal trust be free to grow within a somato-psychic space able to accommodate and sustain the participants during the final stages of their own life, or that of someone close to them.

### Conflict of interest statement

The author has no conflicts of interest to declare.

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