


**CLINICAL CORRESPONDENCE**

# “You do not get cancer by chance”: Communicating the role of environmental causes in cancer diseases and the risk of a “guilt rhetoric”

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## 1 | BACKGROUND

Recent research emphasizes the role of environmental factors in the emergence of oncological diseases. Specifically, Dellino and colleagues<sup>1</sup> demonstrated that cancer-associated translocations in cells are influenced by the environment they are in, which in turn is influenced by the environment where the full organism lives. Broadly speaking, this “environment” could be conceptualized as the individual's lifestyle choices, such as smoking, food intake, and being more or less healthy. Any oncologist or genomic specialist could easily see that these lines are a rough simplification of an extremely complex process: Despite the importance of a healthy lifestyle and prevention, the exact relationships between cancer onset and the patient's lifestyle choices are still to be understood exhaustively by the scientific community. However, the oversimplification of scientific affirmations is the exact starting point of the present contribution.

The implications of the study cited above have been recently reinterpreted by the press in Italy, with a number of articles being published at approximately the same time. These articles reported a brief interview with the authors and the main message was that lifestyle and choices of general life circumstances (eg, living in a healthy place, avoiding work-related stress, and having a child) have a predominant role in the formation of tumors, quoting these press articles “you do not get cancer by chance,” which sounds like a daring attempt, to summarize the scientific work from Dellino and colleagues.

Risk factors or risk habits for oncological diseases exist (eg, bad nutrition, no physical activity, smoking, and alcohol or junk food intake),<sup>2</sup> and evidence of their role in cancer development fosters many preventative initiatives.<sup>3</sup> Nevertheless, we must go with adequate reflection in terms of the effects that an imprecise scientific communication may have on patients' experience. Indeed, if we consider critically the message coming from the Italian press, we could easily see it is targeted to healthy people: It is an encouraging message for those without cancer who would like to prevent such a risk in their future life. To those people, the message says: “What you are doing now may be really important!” Such a message is certainly positive and relevant in order to support prevention and the adoption of healthy lifestyles. It could be inserted in the current movement of “quantified self,”<sup>4</sup> which, starting from the concept that health depends 100% on our behavior, engages the individual in the self-tracking (through technologies) of all the biological, physical, behavioral, or environmental information. The downsides of the quantified self are turning individuals into cold, emotionless, and sometimes meaningless numbers and equating people's self-worth to the various “number-achievements” computed each day.

However, any communication on cancer and oncology is expected to reach not only those people who still have the opportunity to prevent it but even those who are currently fighting the disease, patients or survivors. Both cancer diagnosis and long-term adjustment to the disease are associated with notable emotional experience, which may

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reach a psychopathological status (eg, post-traumatic stress disorder [PTSD]).<sup>5</sup> Furthermore, cancer patients have to deal with difficult decisions in terms of treatment options, which may be for most painful, long-lasting, and full of side effects and thus detrimental to one's individual and social well-being.<sup>6</sup> Even after successful treatment, oncological patients experience continual fear of recurrence and the need to completely reform their everyday life and future plans.<sup>7</sup> As part of the coping efforts with the diagnosis, patients typically ruminate on possible causes for what happened to them: *Why me? Did I do something wrong? Is this my fault?* In this process, such a generalized scientific statement "cancer depends on your lifestyle choices" may be destructive for patients or survivors. In other words, a message that is intended to boost positive agency in a prevention context could be perceived in terms of *guilt rhetoric* by those who are no longer able to prevent a tragedy that has already happened.

## 2 | CANCER PATIENTS AND THE GUILT RHETORIC

Clinical practice shows that patients or survivors need assurances: They often ask their psychologist if their anxiety is *right*, if their crying is *normal*. They need to know that what they are feeling and experiencing is, in some way, a normal path, a common emotional reaction, and they want to resume control over the disruptive emotional flow in which they are. In such a framework, the fact that they might be "responsible" for their cancer could be difficult to manage.

From a psychological point of view, two kinds of reactions to cancer diagnosis may be distinguished: patients who have a healthy lifestyle, typically feel betrayed by their own body, and patients who experienced stressful events (such as a recent bereavement, a divorce, and a work loss) tend to see cancer as a consequence of their emotions and stressful situations. The second ones often state "I know why cancer happened to me!", but they do not feel responsible; they attribute responsibility to the life events. This is a safe mind "escapism" to save themselves from the disruptive sense of guilt. The message that cancer could depend on the choices of general life circumstances might cause significant fear or anger, and patients could experience a sense of impotence towards something they cannot change. It is fundamental, instead, to guide patients to integrate a cancer event into their own life story and switch from guilt feelings to a "responsibility" approach, intended to give them personal control over lifestyle and reactions to life events. Moreover, patients have to find which choices in their lives and health-related behaviors could be better adapted, giving them a sense of agency in their life. Patients deserve to better figure out their role and become active managers of their own health (patient "empowerment" or "engagement," autonomy), as well as supported in the decisions related to their health-care journey.<sup>8,9</sup>

Which type of personal resources could we promote to help patients in achieving such a positive adaptation?\*

a. Acceptation: nonjudgmental acceptance of the emotional experience. It is a nonlaborative strategy, based on the awareness of

### Key points

- Dellino and colleagues demonstrated that cancer-associated translocations in cells are influenced by the environment they are in, fostering the idea that lifestyle choices matter in cancer development.
- The message that individual lifestyle affects cancer development fosters positive agency in prevention but also *guilt rhetoric* in cancer patients.
- Guilt rhetoric may hinder the motivation of cancer patients to engage in becoming active managers of their own health.
- Patients should be guided to integrate a cancer event into their own life story and switch from guilt rhetoric to an active role in controlling lifestyle and reactions to life events.
- "Chance" is something we do not know yet from a biological point of view; thus, the message should be "change what you can, manage what you can't."

the moment, where thoughts and feelings are accepted as they are.

- Problem solving: voluntary attempt to change a stressful situation. It can have a beneficial effect on emotions by eliminating and positively modifying the source of stress.
- Reappraisal: generation of positive interpretations/perspectives on a stressful situation. The usual use of reappraisal as a strategy of emotional regulation may represent a protective factor towards stress and psychological symptoms.
- Self-efficacy: the level of confidence to exert control over one's own motivation, behavior, and social environment. A strong sense of personal efficacy strengthens resilience to adversity.
- Social support: caregiver, parental, and social involvement in patient's care. Social support may be a precursor of personal growth by influencing coping behavior and fostering successful adaptation to life crises.

In other words, patients should be put in the condition in which they believe they can positively influence the outcome of the disease and to regain control of their own life.

## 3 | CHANGE WHAT YOU CAN, MANAGE WHAT YOU CAN'T

We must assume that risk behaviors have a causal association with some type of cancer (eg, sun exposure and melanoma, smoking and lung cancer, and alcohol and liver cancer) and that there are several pieces of evidence, but not a causal relation, between health-related behaviors and disease prevention. Thus, policy and guidelines in Europe have to work in the direction of the abolition of risk behaviors

and the promotion of disease prevention. Dellino and colleagues' evidence on cellular life<sup>1</sup> send a message affirming that the avoidance of risk behaviors can increase well-being and health. So *what is the role of "chance" in cancer onset?* Cancer often strikes people who follow all the rules of healthy living and have no family history of the disease, prompting the pained question "Why me?" Tomasetti and Vogelstein believe the answer to this question rests in random DNA copying errors.<sup>10</sup> Dellino and colleagues<sup>1</sup> say that these DNA copying errors could be the same mechanisms described in their contribution and thus "controllable" by the cell environment. These controversies highlight that what we currently call "chance" is simply something very complex on biological and organic levels, something we do not know yet, and that the research will allow us to investigate and control in the future. Nevertheless, we have to recognize that not everything in our life is under our control and that "chance" is a concept that belongs to mankind and our experiences in this world.

Health decisions in cancer prevention have to be made in an uncertain condition about disease onset probability, and we should contemplate both the possibility of successful prevention and the possibility of cancer trauma. What clinicians and patients have to keep in mind is that there are many personal and medical resources to influence the outcome of the disease. This aspect should influence physicians' communication with patients, who have to be oriented to instill a sense of agency and the possibility to positively influence the cancer prognosis.

#### AUTHOR CONTRIBUTIONS

All authors were responsible for the contribution concept and design, acquisition and revisions of data, drafting of the manuscript, and critical revision of the manuscript for important intellectual content.

#### CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

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#### ENDNOTE

\*Arguments reported in this section are based on both personal clinical experience of the authors and scientific literature (sources can be obtained from authors upon request).

#### REFERENCES

- Dellino GI, Palluzzi F, Chiariello AM, et al. Release of paused RNA polymerase II at specific loci favors DNA double-strand-break formation and promotes cancer translocations. *Nat Genet.* 2019;51(6):1011-1023.
- Wu S, Powers S, Zhu W, Hannun YA. Substantial contribution of extrinsic risk factors to cancer development. *Nature.* 2016;529(7584):43-47.
- Umar A, Dunn BK, Greenwald P. Future directions in cancer prevention. *Nat Rev Cancer.* 2012;12(12):835-848.
- Lupton D. The diverse domains of quantified selves: self-tracking modes and dataveillance. *Econ Soc.* 2016;45:101-122.
- Oliveri S, Arnaboldi P, Pizzoli SFM, et al. PTSD symptom clusters associated with short- and long-term adjustment in early diagnosed breast cancer patients. *Ecancermedicalscience.* 2019;13:1-13.
- Mols F, Vingerhoets AJJM, Coebergh JW, van de Poll-Franse LV. Quality of life among long-term breast cancer survivors: a systematic review. *Eur J Cancer.* 2005;41(17):2613-2619.
- Simard S, Thewes B, Humphris G, et al. Fear of cancer recurrence in adult cancer survivors: a systematic review of quantitative studies. *J Cancer Surviv.* 2013;7(3):300-322.
- Bailo L, Guidi P, Vergani L, Marton G, Pravettoni G. The patient perspective: investigating patient empowerment enablers and barriers within the oncological care process. *ecancermedicalscience.* 2019;13. Epub ahead of print. <https://doi.org/10.3332/ecancer.2019.912>
- Graffigna G, Barelo S, Triberti S. Patient engagement: a consumer-centered model to innovate healthcare. *Walter de Gruyter GmbH & Co KG.* 2016;142. Epub ahead of print <https://doi.org/10.1515/9783110452440>
- Tomasetti C, Vogelstein B. Variation in cancer risk among tissues can be explained by the number of stem cell divisions. *Science (80-).* 2015;347(6217):78-81.

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