

Bioethics: beyond the boundaries of disciplines

Rosagemma Ciliberti¹, Valeria Schiavone², Linda Alfano¹

¹ Department of Health Sciences, University of Genoa, Genoa, Italy; ² Experice Laboratory, Paris 8 University, France

Abstract. The extension of our moral horizon beyond spatial and temporal boundaries constitutes a significant stage in the development of an authentically human ethic. The guiding idea is that of the expanding circle, i.e. a circle that gradually widens to encompass ever larger and more intertwined areas, in a planetary dimension. In such a vision, the challenge posed to bioethics should be the elaboration of an ethic of responsibility on a global scale as the only one adequate to address the crucial problems of survival for a humanity understood as a community of destiny. The challenges posed by the complexity of the current social context call for an education geared towards the development of transversal skills through a constant multi- and interdisciplinary approach and with the aid of a plurality of conceptual and methodological tools. The authors describe what they experienced when teaching doctors and dentists on a joint training course at the University of Genoa.

Key words: care ethics, environment, interdisciplinarity, one health; circular health, education, integral ecology, human sciences, vulnerability

Bioethics: Inhabiting the weave in the living world

Although the meaning of the term bioethics is often, to the uninitiated, far from clear (1), for some years now, ethical reflection has become one of the most characteristic and recurrent ‘topos’ of the current cultural debate.

For a long time, indeed, the call for bioethical reflection has concerned purely the health care sphere as not only the main, but the exclusive field of that discipline. There is no doubt that the innovations made by science, as well as recent cultural evolutions on the subject of respect for decision-making rights over one’s own health, have polarised attention on the issues of consent, the interruption/refusal of life-saving treatments and decision-making autonomy in the procreative sphere or at the end of life (2, 3). The wide-ranging debate on these issues, often referring to ‘borderline’ clinical cases (4), characterized by urgency and high emotionality, also appearing in the media, has unfortunately supported the erroneous idea that the biomedical sphere exhausts all possible applications of this discipline.

Without neglecting the importance of a reflection on these medical issues, which have also had the merit of highlighting the difficulty and inability of a mere code-based-deontological approach to cope with transformations that profoundly change the ways of exercising medicine, its purposes, the relationships between health professionals and patients and also between medicine and society, we have to take into consideration the limits of this interpretative model of bioethics, even with respect to its original vocation. Ever since the term was first coined by the Lutheran theologian Fritz Jahr, who took up and expanded Kant’s categorical imperative, Bioethics has, in fact, proposed itself as an ethics of the *bios* according to the principle that all living things are to be treated as ends and never merely as means (5).

The oncologist Van Potter himself, who is regarded as one of the founding fathers of contemporary bioethics, emphasised in his text “Global Bioethics” (6) the need for global bioethics that would deal with the moral relevance of all the transformations and possibilities offered by techno-scientific developments and their consequences for life. In the conception of the American oncologist, medicine and the life sciences

had, in an interdisciplinary perspective, to enter into dialogue with the humanities in order to ensure the very survival of man as a component of the ecosystem.

While not disregarding the divergence of meanings and conceptions that Manti rightly points out between Jahr's theological and metaphysical vision and Potter's scientific one, one cannot, however, deny a broader original vocation of bioethics than the purely biomedical one, as imprinted by the research of the Hastings Centre and the Kennedy Institute with André Hellengers, which has also been more widespread due to the contingent problems connected with biomedical developments (7).

More recently, albeit still very timidly, after decades of an ethical debate focused mainly on issues concerning the exercise of individual freedoms in the health sphere - such as freedom of care of adult and minor (8, 9), and the communication on specific issues (10, 11), an awareness is (re)emerging of a much broader horizon of ethical reflection, in relation to the complexity of the network of interactions linking man to nature and animals, which goes beyond the mere dimension of an anthropocentric angle.

Hence a series of very concrete questions involving many aspects of our customs. What are the ethical costs of our food? What is its ecological impact? Is it morally irrelevant how we interact with animals and our environment? (12, 13).

A few ecological disasters, such as the Chernobyl reactor explosion in 1986 or the Exxon Valdez tanker oil spill in 1989, have also contributed to this new awareness towards a greater responsibility for our choices in the ordinariness of life, which prompted the convening of 'conferences' between states, demonstrating the need to address environmental problems through the development of a political awareness and commitment that transcends national borders (14). The current rethinking of the concept of health as a function of an integral approach that takes a global view of the long-term well-being of all living species also contributes to the affirmation of a broader moral perspective.

Bioethical reflection, exemplified in the question: 'Is it morally permissible to implement everything that science allows?' does not, and cannot, concern only relationships in the medical sphere - even though they alone give rise to obligations concerning the manage-

ment of the ecosystem and the need to guarantee adequate living conditions for present and future generations - but concerns all the complex and synergetic relationships and interdependencies with the environment and with other living beings in a global perspective that calls for open and collective reflection (15, 16).

The 'integral ecology' perspective

The worsening of devastating phenomena such as those caused by unbridled urbanisation, climate change, global warming (hurricanes, storm surges, torrential rains, melting glaciers with the consequent rise in the oceans and seas) and the consistent consumption of natural resources (some of which are non-renewable), which seriously jeopardise the chances of survival of future generations, reveal the fragility of the traditional logic of uncontrolled exploitation of nature, based on the principle that anything that can technically be done can be done to favour the maximisation of productivity and profit.

The same recent pandemic caused by the SARS-CoV-2 virus, and before that the various viral emergencies that have followed, one after the other over time (HIV, SARS, swine flu, Ebola, etc.), have highlighted the concept of circular health as an expression of the very close and inevitable interrelationship between human, environmental and animal health problems (today significantly expressed in the *One Health* formula) and the consequent need to make adequate reflections on the boundary between 'power' and 'duty', as well as on the extension of the value of care (17).

In spite of geographical boundaries and the barriers raised to mark them, the virus has reminded us that every local event can entail, at least in principle, consequences that can rapidly amplify on a global scale, highlighting the reciprocal interrelationships and, also, the need to extend the dimension of care to a broader horizon than the merely anthropocentric one, which still persists strongly, in order to access a broader vision of the moral community, which goes beyond the frontiers of the species. And it is precisely this broadening of the horizon of care, both in temporal terms (to cover future generations) and in terms of content, that calls for a new individual and collective responsibility that

considers the impact that our actions may have on future generations and other species.

Significant, in this regard, is the invitation urged by Pope Francis in the encyclical “*Laudato si*” (18) to rethink human actions according to a broader vision, recalling that “there are not two separate crises, one environmental and the other social, but only one complex socio-environmental crisis”, the solution to which requires the implementation of a form of “integral ecology” and a rethinking of the relationship between the natural order and the social order. The starting premise is the overcoming of the Promethean logic that locates knowledge of reality in the exercise of power and domination, in order to appeal to new forms of open and dynamic thinking in which knowledge (and discovery) of nature should develop from a sense of belonging and should be expressed in the acceptance and communion of what binds us to it, as sharers in a common destiny. And it is on the same path that Edgar Morin, one of the most prestigious figures in contemporary culture, invites us to be in solidarity with the Earth since our life is linked to its own (19). It is an invitation to prudence and wisdom, to establish a ‘New Covenant’ between Man and Nature (defined by some as ‘ecoethics’) in order to bring out fully, as emphasised by Manti, the idea of an expansion of the domain of bioethics towards a planetary dimension capable of generating new and different relationships between ethics, politics and economics and to offer a promising backdrop to the observations of those who believe that bioethics, in the current perspective, has exhausted its function and no longer produces useful contributions, *de facto* postponed to political decision-making and economic choices (7). At the heart of the reflection is the focus on the negative consequences that the individualistic vision of current models of economic development and, at the same time, the consumerist lifestyle induced by market logic entail on the growth of inequalities, on the planet as a whole and on the legacy passed on to present and future generations.

Recalling the famous title of Potter’s article “Bioethics: the science of survival”, we grasp all the relevance of the scientist’s warning: The risk of the self-annihilation of the human species, in the uncritical and uncontrolled development of science, is present through the warming of the climate, the pollution of

soil and water, the depletion of food resources. And indeed, the recommendations of the first bioethics urged a critical rethinking and a change in our behaviour: from lifestyles, to attention to food, to our relationships with our non-human animal companions, to our relationship with the environment to be looked at no longer as masters, but as citizens respectful of its laws. A global health, then, in the sense that it looks at the interactions and feedback between the different inhabitants of the Earth, and that invites us to look at the close connections between human health and animal welfare and, consequently, at a broader and more complex view of our responsibilities that these relationships pose. As Landires et al. remind us in a 2017 *Lancet* study, there is a problem of ‘planetary health’, which involves every citizen, in the context of personal everyday decisions on behaviour and consumption, since if each individual choice, evaluated by itself, produces a small impact, in a broader perspective it can have an enormous collective impact (20).

Fragility as a new paradigm

The reflection on vulnerability, as an innovative principle introduced by the Barcelona Declaration, which included it and placed it alongside the traditional principles of integrity, justice and autonomy, has generated a wide range of conceptual elaborations on the shared and reciprocal need for care (22, 23).

The inherent existential vulnerability of human beings and, at the same time, their belonging to what is defined as a community of destiny, refers to the need to design their integration within a relational context, and can then be an opportunity to enable the building of cooperative bonds and deep relationships that care for oneself, others, the environment, the living, the common home and the generations to come.

In this perspective, the philosopher Mauro Ceruti’s call to take on fragility as a condition of opportunity deserves attention, since it is from caring for fragility, and not from waging war on the enemy, that human creativity is generated (23). It is precisely this awareness that can contribute to developing more mature conditions of existence and deeper ties with life. In the same vein, Morin, in his recently published es-

say significantly titled 'Let us change course. Fifteen lessons from the coronavirus', invites us to learn from the pandemic for our future (19).

Changing course may seem impossible at a time in history when techno-economic globalisation is more hegemonic than ever. Yet, it is the centenarian philosopher himself, who experienced first-hand the human tragedies of a century, such as the horrors of the Second World War, who urges us to have hope and courage, reminding us how 'all the new paths that human history has known were unforeseen, caused by detours that were able to take root, to become historical forces'.

But, for this condition to have any real chance of being realised, we must first, as the French philosopher reminds us, avoid the temptation to take refuge in the illusion of positive determinism, since tragedies do not automatically generate a moral regeneration of the collective.

The shape and quality of our future cannot and will not be able to only depend on us, on the ethical lessons we will be able to draw from the various circumstances that events bring up, and on the consequent behavioural choices we will be able to make in order to plan a future development of living together on the planet that is harmonious and respectful of all, and especially of the weakest.

In a generative approach to post-pandemic society and globalisation, there is therefore a need not to return to the world of 'before', to the world that proved to be an all too favourable environment for the pandemic. The invitation is to be inclined to stop, to question ourselves and to try to establish a space of awareness in order to access a different perspective of values, capable of rediscovering solidarity, community, the need for a longer-term vision, the responsibility of our actions, the sense of limits and, at the same time, that of our precariousness.

Rather than thinking of a humanism of the 'post', today it seems necessary and urgent to think of a humanism of the 'beyond', in the direction of a non-anthropocentric cosmology capable of looking to the common good, in the awareness that health is global: we are part of an ecosystem in which the health of each element - human, animal, environmental - is strictly interdependent on that of the others (19).

These considerations call for broader reflections on the way in which society deals with health problems and, also, on the current systems for measuring human well-being, which are mainly anchored to growth and income indicators, with little attention paid to other human components pertaining to the quality of life and multidimensional individual and collective well-being, such as the existence of an affective and friendship network, the quality of our relationships, the availability of time and natural resources, the quality of informal social support networks, and the quality of living, which, moreover, constitute particularly significant protective, support and resilience factors in times of serious crisis.

It is precisely the pandemic that has shown that these fundamental components of well-being, if neglected, become weak points that do not allow us to cope with the serious social, economic and human damage that occurs when the system is subjected to a shock (24).

Educating for complexity: a question of moral responsibility

In order to implement effective policies aimed at promoting ethically oriented behaviour that respects others, the environment and nature, it is also necessary to rethink the education system on the premise, now inescapable, of the recognition of the non-linearity of the complex web of relationships that constitutes the ecosystem.

Education should, in fact, drive change towards a new vision of sustainable global development through the growth of a new generation of citizens who care about the common good and are responsible for promoting shared fundamental values such as respect for life, equal rights, social justice, cultural diversity, international solidarity and shared responsibility for a sustainable future.

The recent radical transformations that have marked human existence, brought about by scientific and technological innovation alongside cultural innovation, are increasingly highlighting the obsolescence of the traditional boundaries between scientific and humanistic education, making unavoidable the urgen-

cy of an education in complexity and critical thinking based on overcoming the traditional linear theoretical-interpretative models of knowledge (25, 26).

In other words, a true democratisation of knowledge requires a reorganisation of thought and knowledge that, in an open and multidisciplinary perspective, can broaden the horizons of humanism by linking knowledge, today confined to individual disciplines, in a horizontal approach that can foster their intertwining and dialogue between different knowledge and skills, since, as Mauro Ceruti writes, global problems cannot be tackled with merely sectorial approaches, within disciplines incapable of communicating with each other.

As Power reminds us: 'An education empowers us if it builds the human resources, we need to be productive, keep learning, solve problems, be creative, and live together and with nature, in peace and harmony' (27).

A renewed vision of education should therefore promote the development of broad, investigative, critical-reflective thinking, open to plurality of views, autonomy of judgement and debate and, at the same time, an awareness of limits in relation to the effects of everyone's daily actions, inducing an authentic sense of responsibility towards the world around us.

This approach, moreover, precisely constitutes the connotation of bioethics as a 'disciplinary subject', which by its very definition is plural, since it is not possible to identify a univocal thought both for the different ethics of reference and for the different paradigms of approach. As Luisella Battaglia reminds us, interdisciplinarity does not in fact mean nullifying the role of individual disciplines, but rather confirming and enhancing it in a constant dialogue between them, which can restore an overall view and the global perspective that current social, cultural and political processes constantly require (28).

In this context, the physician, as a caring professional, can also play a significant role in promoting responsible attitudes and a broader vision of health (29).

In particular, the Italian Code of Medical Ethics (2014) expressly provides (art. 5) for precise obligations for the physician to collaborate in the implementation of suitable educational policies that prevent and combat health inequalities, also foreseeing the physi-

cian's commitment to promote relevant communication on exposure and vulnerability to environmental risk factors and to favour an appropriate use of natural resources, for a balanced ecosystem that can also be lived in by future generations (30).

However, there is little university and post-university attention towards an environmental approach in medicine that is able to link an essential vision of man as an eco-biological system, to the inevitable health repercussions caused by the altered relationship with the surrounding environment (31). There is therefore a need for a collaborative institutional relationship between the professional Orders, the university world, and the scientific associations that are interested in the subject, in order to define a curriculum of studies that is truly geared to professional medical practice.

Our experience

In responding to these challenges, a fundamental role is played by the educational agencies (schools and universities) whose training programs should be designed in a systemic way and in an open and multidisciplinary perspective that is able to take into account and enhance the specialisation of knowledge and skills through their dialogue and interaction.

However, there are still strong cultural legacies and resistances that the very places deputed to produce and develop knowledge (schools and universities) show towards such a radical methodological and content-related change of long-established practices.

In order to promote greater dialogue between different knowledge and skills, an innovative structuring of the Human Sciences course within the School of Medical and Pharmaceutical Sciences has been proposed at the University of Genoa (Italy), both with regard to the content offered, the target student's groups and the lecturers involved.

The pathway of this module is proposed as an opportunity for reflection and deepening around Medicine as a perspective and space for human care.

In particular, the articulation of the course envisages the following objectives: a) To represent the training pathway of the future doctor in all its intercultural

and interdisciplinary dimension, through insights into the evolution of medical thought and the major ethical issues of the contemporary world; b) To focus on Medicine as a space and perspective of human care, in a reading key that aims to highlight the complexity of human beings as subjects/objects of care, the complexity of health and illness, the complexity of care practices; c) Promote awareness around the importance of "Medical Humanities" in the training path of the future doctor; d) Present a plurality of apparently distant topics with the intention of representing the richness and variety of subjects, perspectives and different anthropological, cultural and moral profiles involved.

Over the course of the various meetings, heterogeneous topics are addressed, covering: the epistemology of Medicine, the history of medical thought, the notion and cultural changes of the concepts of health, illness and care, the complexity of mind/body links, the ethical issues related to the development of a person-centred Medicine, the breadth of the notion of fragility, end-of-life issues, as well as aspects related to nutrition and places of care.

The heterogeneity of the topics constitutes an important resource for a broad and complex vision in which scientific knowledge and skills are integrated and converge with other anthropological, psychological and ethical knowledge and skills.

With regard to the target audience, the didactic offer of this course has been opened up and addressed to students belonging to different courses: Medicine and Dentistry and Dental Prosthetics. United by the same goals of providing personal care and assistance, students from different degree courses can benefit from teaching that intends to overcome rigid training barriers in order to build common training moments between different study paths, also in function of teamwork, which today is definitely the way to approach the assisted person.

Making the most of a broad, transversal approach of knowledge and skills, considered to be the cornerstone of caring, the teachers have very different backgrounds and cultural origins.

This type of innovative approach, involving teachers from various disciplinary fields and aimed at students from various professions, can offer important inspiration for thought on caring for the other and on

the complexity of emerging problems. Taking care of the other, in fact, is not only administering a therapy or practicing an intervention, but implies an encounter, a relationship, respect, assumption of ethical and human responsibility (not only of a legal or deontological nature), and requires a broad and complex attention to illness, suffering, needs, fragility.

Classroom activities will be complemented by seminar sessions with contributions from both bioscientific and humanistic cultural backgrounds.

In addition, the teaching is complemented by guided tours for small groups both in the Italian former Quarto Psychiatric Hospital in Genoa and in the Museum of Ethnomedicine A. Scarpa which provide further interactive educational moments. In fact, the buildings of the former asylum tell a story of more than a century, packed with other small stories, those of men and women relegated by society, in a situation sometimes of a difficult balance between care and denial of rights, however always in desperate search of dignity. Their journey, guided by a varied team of operators, offers a broad and critical look at the theme of diversity and suffering.

The Museum's approach to the traditional indigenous medicines involves a highly topical reading of health, anthropological, social and ecological problems related to health, well-being and the environment, which, in recent years, are arousing great interest both among the general public and in institutions, also because of the current great migratory movements that are taking place.

Conclusions

The extension of our moral horizon, beyond spatial and temporal boundaries, constitutes a significant stage in the development of an ethic that expands its boundaries to encompass ever broader and more intertwined realms, in a planetary dimension.

In such a vision, the elaboration of an ethic of responsibility on a global scale calls for a profound revision of education towards a systemic vision, oriented towards the development of transversal skills through a constant multi- and interdisciplinary approach and with the aid of a plurality of conceptual and methodological tools.

This new anthropological and philosophical vision of the person, which emerges into deep interconnections among humans-animals-environment, requires a training program's new design in order to deal with their specific contents beyond narrow disciplinary boundaries, involving students from different study orientations. The call is to promote an approach that enhances diversity as richness, a plural thinking and constant, critical comparison.

A disclosure / conflict of interest statement

None of the authors of this manuscript has a financial or personal relationship with other people or organizations that could inappropriately influence or bias the content of the paper.

It is to precisely state that "No Competing interests are at stake and there is No Conflict of Interest" with other people or organizations that could inappropriately influence the content of the paper.

References

- Battaglia L. Bioethics. Milano: Editrice Bibliografica; 2022.
- Cavaliere G. The problem with reproductive freedom. Procreation beyond procreators' interests. *Med Health Care and Philos* 2020; 23:131–40.
- Ciliberti R, Gulino M, Gorini I. New Italian law about end of life: Self-determination and shared care pathway [La nuova normativa Italiana sul fine vita: L'autodeterminazione e la condivisione del percorso di cura] *Recenti Progr Med* 2018; 109(5): 267–71.
- Palazzani L. The pandemic and the ethical dilemma of limited resources: Who to treat? *Bioethics Update*. 2020; 6(2):67–79.
- Jahr F. Bio-Ethik. Eine Umschau über die ethischen Beziehungen des Menschen zu Tier und Pflanze. Kosmos. Handweiser für Naturfreunde; 1927.
- Potter VR. Global Bioethics. Building on the Leopold Legacy. East Lansing, MI: Michigan State University Press; 1988.
- Manti F. La bioetica planetaria e le sue declinazioni. 25 anni di Bioetica a Napoli. I protagonisti e le idee. R. Prodrromo (Edited by) Milano-Udine: Mimesis; 2020:73–84.
- Wolf-Braun B, Wilke HJ. Patientenautonomie und Aufklärung - Ethische und rechtliche Aspekte der Aufklärung [Patient autonomy and informed consent - ethical and legal issues]. *Anesthesiol Intensivmed Notfallmed Schmerzther* 2015; 50(3):202–9.
- Ciliberti R, Alfano L, Baldelli I, De Stefano F, Bonsignore A. Self-determination, healthcare treatment and minors in Italian clinical practice: ethical, psychological, juridical and medical-legal profiles. *Acta Biomed* 2018; 89(1):34–40.
- Battistuzzi L, Ciliberti R, Bruno W, Turchetti D, Varesco L, De Stefano F. Communication of clinically useful next-generation sequencing results to at-risk relatives of deceased research participants: Toward active disclosure? *Clin Oncol* 2013; 31(32):4164–5.
- Battistuzzi L, Ciliberti R, Forzano F, De Stefano F. Regulating the communication of genetic risk information: The Italian legal approach to questions of confidentiality and disclosure. *Clin Genet* 2012; 82(3):205–9.
- Martini M, Penco S, Baldelli I, Biolatti B, Ciliberti R. An ethics for the living world: Operation methods of animal ethics committees in Italy. *Ann Ist Super Sanità* 2015; 51(3):244–7.
- Baldelli I, Massaro A, Penco S, Bassi AM, Patuzzo S, Ciliberti R. Conscientious objection to animal experimentation in Italian universities. *Animals (Basel)* 2017; 7(3):24.
- Khaji A, Larijani B, Ghodsi SM, Mohagheghi MA, Khankeh HR, Saadat S, Tabatabaei SM, Khorasani-Zavareh D. Ethical Issues in Technological Disaster: A Systematic Review of Literature. *Arch Bone Jt Surg* 2018; 6(4):269–76.
- Battaglia L. Uomo, natura, animali. Per una bioetica della complessità. Pavia: Altravista; 2016.
- Virgolino A, Antunes F, Santos O, Costa A, Matos MGd, Bicho M. et al. Towards a Global Perspective of Environmental Health: Defining the Research Grounds of an Institute of Environmental Health. *Sustainability* 2020; 12: 8963.
- Capps B. One health ethics. *Bioethics* 2022; 36(4):348–55.
- Pope Francis, *Laudato si'*. Cinisello Balsamo: Edizioni San Paolo; 2015.
- Morin E. Sette lezioni sul pensiero globale. Milano: Raffaello Cortina Editore; 2016.
- Landires I, Nuñez-Samudio V, Apraez-Ippolito G, Castro G. Planetary health: a new sociopolitical framework isurgentlyneeded. *Lancet* 2018; 391(10126):1158. 8
- Kemp P, Rendtorff, J. The Barcelona Declaration. Towards an Integrated Approach to Basic Ethical Principles. *Synth Philos* 2008; 23 (2):239–51.
- Rendtorff JD. Basic ethical principles in European bioethics and biolaw: autonomy, dignity, integrity and vulnerability-towards a foundation of bioethics and biolaw. *Med Health Care Philos* 2002; 5(3):235–44.
- Ceruti M, Bellusci F. Inhabiting complexity. The challenge of a common destiny. Milano: Mimesis; 2020.
- Valera L, López Barreda R. Bioethics and COVID-19: Considering the Social Determinants of Health. *Frontiers in Medicine* 2022; 9. <https://www.frontiersin.org/articles/10.3389/fmed.2022.824791/full>
- Kuhn L. Complexity and Educational Research: A Critical Reflection. *Educ Philos Theory* 2008; 40:177–89.
- Southerland SA, Settlege J. Humanistic science education: Updating our collective consciousness and offering fresh consideration. *Science Education* 2022; 106:479– 481.
- Power CN. The Power of Education: Education for All, Development, Globalisation and UNESCO. London: Springer; 2015.
- Battaglia L. L'idea di salute globale. Una sfida per la bioetica. https://www.unisob.na.it/ateneo/c008/c008_r3_battag

lia.pdf

29. Doldi M, Petralia P. Curare la persona. The human dimension of medicine. Fidenza: Mattioli; 2021.
30. Patuzzo S, De Stefano F, Ciliberti R. The Italian code of medical deontology. Historical, ethical and legal issues. *Acta Biomed* 2018; 89 (2):157–64.
31. Doukas DJ, Mccullough L, Wear S. Perspective: Medical Education in Medical Ethics and Humanities as the Foundation for Developing Medical Professionalism. *Acad med* 2012; 87: 334–41.

Corresponding author:

Rosagemma Ciliberti, Department of Health Science, University of Genoa, Genoa, Italy,
Email: rosellaciliberti@yahoo.it