



# Health inequalities: a Research Positioning Exercise at the National Institute of Health, Italy

Raffaella Bucciardini<sup>1</sup>, Rita Maria Ferrelli <sup>2</sup>, Anna Maria Giammarioli<sup>1</sup>, Emanuela Bortolin<sup>3</sup>, Emanuele Fanales Belasio<sup>4</sup>, Benedetta Mattioli<sup>1</sup>, Chiara Donfrancesco<sup>5</sup>, Michela Sabbatucci <sup>4</sup>, Roberto Pasetto<sup>6</sup>, Anna Colucci<sup>4</sup>, Rosanna Mancinelli<sup>7</sup>, Luigi Palmieri<sup>5</sup>, Paola De Castro<sup>8</sup>, Letizia Sampaolo<sup>9</sup>, Simona Gaudi<sup>6</sup>, Loredana Falzano<sup>1</sup>, Sandra Morelli<sup>10</sup>, Tiziana Grassi<sup>11</sup>, Stefano Buttò<sup>12</sup>, Annamaria Luzi<sup>4</sup>, Walter Ricciardi<sup>13</sup>

1 Centro Nazionale per la Salute Globale, Istituto Superiore di Sanità, Roma, Italia

2 Servizio Formazione, Istituto Superiore di Sanità, Roma, Italia

3 Servizio tecnico scientifico grandi strumentazioni e core facilities, Istituto Superiore di Sanità, Roma, Italia

4 Dipartimento Malattie Infettive, Istituto Superiore di Sanità, Roma, Italia

5 Dipartimento malattie cardiovascolari, dismetaboliche e dell'invecchiamento, Istituto Superiore di Sanità, Roma, Italia

6 Dipartimento ambiente e salute, Istituto Superiore di Sanità, Roma, Italia

7 Centro Nazionale Sostanze Chimiche, Istituto Superiore di Sanità, Roma, Italia

8 Servizio comunicazione scientifica, Istituto Superiore di Sanità, Roma, Italia

9 Servizio conoscenza, Istituto Superiore di Sanità, Roma, Italia

10 Centro nazionale tecnologie innovative in sanità pubblica, Istituto Superiore di Sanità, Roma, Italia

11 Centro Nazionale Malattie Rare, Istituto Superiore di Sanità, Roma, Italia

12 Centro nazionale ricerca su HIV/AIDS, Istituto Superiore di Sanità, Roma, Italia

13 Presidenza, Istituto Superiore di Sanità, Roma, Italia

**Correspondence:** Rita Maria Ferrelli, Servizio Formazione, Istituto Superiore di Sanità, Via Giano della Bella 34, 00162 Roma, Italia, Tel: +39 06 4990 4136, Fax: +39 06 4990 4134, e-mail: rita.ferrelli@iss.it

**Background:** The Italian National Institute of Health (Istituto Superiore di Sanità, ISS) considers health inequalities (HI) an important area of activity. As the scientific and technical body of the Ministry of Health and the National Health Service, ISS may play a key role to reduce HI. In order to enable ISS in addressing the new and crucial HI challenge, a Research Positioning Exercise was designed and implemented. **Methods:** The Exercise included: (i) workshop to strengthen the institutional interest in the field of HI; (ii) review and analysis of ISS publications (years 2000–2017) to identify HI research topics; (iii) survey among ISS researchers regarding main research challenges to address HI in the coming years; and (iv) analysis of input on research challenges from HI international experts. **Results:** The results of this Exercise suggest that the following points should be included in the future ISS agenda planning: (i) themes which ISS should continue working on (e.g. migrants/vulnerable groups); (ii) themes to be improved: (a) relationship between social determinants and mechanism of HI generation and (b) relationship between risk factors exposure and social determinants; and (iii) new themes to be addressed: (a) mechanisms underlying the resilience observed in Italy; (b) new socioeconomic indicators for HI monitoring; and (c) evidence-based policies aimed at reducing HI. **Conclusion:** Findings of this Exercise show that ISS researchers identified relevant areas, addressing inequalities in addressing the health. Because of ISS structural peculiarity that includes multidisciplinary expertise, the ISS could provide a significant contribution to HI research challenges and knowledge gaps.

## Introduction

The Italian National Institute of Health (Istituto Superiore di Sanità, ISS) is the main Italian research institute in the biomedical and public health field. It is the technical and scientific body of the Italian National Health Service (Servizio Sanitario Nazionale, SSN). Its mission is the promotion and protection of national and international public health through research, surveillance, regulation, control, prevention, communication, counselling and training.

Along with the main European public health research institutes, ISS considers health inequalities (HI) an important area of its research activities. In the past years, ISS has focused its research studies mainly on vulnerable groups and migrants. Following the publication of the Communication 'Solidarity in Health: Reducing Health Inequalities in European Union (EU)' by the European Commission (EC) in 2009,<sup>1</sup> the ISS has enforced its formal commitment to achieve health equity: despite improvements in health overall in Europe, the scientific literature shows that HI are worsening<sup>2</sup> (and are a well-established problem<sup>3</sup>), and a

wealth of varied sources of information is readily available<sup>4–9</sup> to reduce HI.

Due to its central position as the scientific advisory body of the Ministry of Health,<sup>10</sup> ISS may play a key role in the efforts to reduce HI. On the basis of its technical and scientific experience and its public health role, ISS can help to identify the HI research challenges and knowledge gaps to defining how to effectively address them. Particularly, ISS can assume a responsibility role in the collection, production and dissemination of accurate documentation concerning the mechanisms that generate HI. Moreover, ISS may be the significant national scientific reference able to involve other Italian stakeholders working in this field.

The above topics represent a new and crucial challenge for ISS in relation to HI. To enable ISS to effectively address them, a Research Positioning Exercise was planned and implemented in the period from October 2017 to April 2018, with the purpose of (i) describing ISS contribution to reduce HI over the last 20 years; (ii) identifying HI research priorities to be addressed by ISS in the future; and (iii) getting indications from internationally recognized experts on HI in relation to future research challenges and knowledge gaps.

## Methods

The Research Positioning Exercise was structured in the following steps:

- (1) workshop to strengthen the institutional interest in the field of HI (30 October 2017);
- (2) review and analysis of ISS publications, from the year 2000 to December 2017, to identify research areas/topics associated with HI within the ISS scientific community (January–April 2018);
- (3) survey to researchers regarding main research challenges and fields of interest to address HI in the coming 10–15 years (January–April 2018);
- (4) survey to international experts in the field of HI regarding future research challenges (January–March 2018).

### Health inequalities workshop

The first step of the Research Positioning Exercise was to organize the workshop (30 October 2017) entitled ‘Equity in Health and Healthcare—A New Challenge for ISS’ to assess the state of art in the HI field and to promote a collaborative approach for a research agenda, training and advocacy on HI. Following the workshop, a multidisciplinary working group (WG), involving 65 researchers from 18 different ISS Departments/Centres was established to carry out the subsequent steps of the Exercise.

### Online literature search and review

The WG discussed a set of methodological search issues to define inclusion/exclusion criteria for the online literature search and selected the appropriate keywords for the search strategy. The inclusion/exclusion criteria fixed a review of the literature, from January 2000 to December 2017; the search covered Agricola, Biosis, CABA, CAPlus, Embase, FSTA, IPA, Medline, and SCISearch databases. The WG deemed crucial not to miss any potentially relevant studies. Therefore, a sensible search strategy was set up based on two main key questions: (i) How many and who are the ISS researchers working on HI? and (ii) How many and which are the papers/studies they have published? Based on these key questions, three different queries were set with three different search filters: (i) names of ISS authors or researchers who have already worked on health/social inequalities; (ii) multiple forms and terms to refer to ISS in the affiliation field; and (iii) multiple forms and names to refer to ISS publications in the source field. These three filters were combined with the main search filter containing terms, keywords and synonyms about HI.

### Survey to ISS researchers

This part was the key component of this Exercise. A questionnaire was developed by a sub-group of the WG and then sent to all the other members of the WG. The questionnaire included the three following questions that are based upon a similar exercise carried out by the Centre for Health Equity Studies in Stockholm, Sweden:<sup>11</sup>

- (1) Which are the most important knowledge gaps and research challenges in the HI field in the coming 10–15 years?
- (2) Develop how you think that these knowledge gaps and challenges can best be tackled, for example which type of data or other resources would be needed.
- (3) Indicate how to work in ISS to properly address these gaps/challenges.

A month was given to fill in the questionnaire. A sub-group of the WG analysed the responses and summarized and grouped them in main themes according to their content.

### Survey to international experts on HI

Due to their recognized role as international experts on HI, Prof. J. Mackenback and Prof. Sir M. Marmot were consulted by email with the following questions:

- (1) Which are the most important knowledge gaps and research challenges in the HI field in the coming 10–15 years?
- (2) Develop how you think that these knowledge gaps and challenges can best be tackled, for example which type of data or other resources would be needed.

Their answers were summarized in main themes.

## Results

The results of the ISS Research Positioning Exercise were grouped into four sections. The first section outlined what ISS has done so far in the HI field, namely the research topics in ISS publications (Box 1). The second section provided a description of the knowledge gaps and research challenges that ISS could actually put in its agenda from now on, including examples of studies/tools that are needed to address them (Boxes 2 and 3). The third section presented how ISS researchers can work together and with other institutions in order to better address the efforts to reduce HI (Box 4). The analysis of results reported in the three sections allowed to identify the ISS future agenda for research, training and advocacy on HI. The final part presented the knowledge gaps and research challenges outlined by international experts.

### Descriptive findings

#### Online literature search and review

Online search provided 333 citations, out of which, 195 publications met the inclusion criteria and were eligible for this analysis. The selected publications covered a broad range of research topics. Five main themes were identified: ‘Vulnerable group’, ‘Migrants’, ‘Health care access’, ‘Health risk factors’, and ‘Social determinants of health’. Each publication was reported under the topic with the best correspondence. Nevertheless, some overlapping exists and some publications were reported under two topics due to their double focus areas. The reported percentages were also calculated on this basis. The main themes are briefly explained and listed in Box 1, based on the number of publications specifically covering them. Some publications not covering the main themes were assembled under the ‘Others’ group due to their heterogeneous nature.

#### Survey to ISS researchers

Among the 65 researchers who participated in the Workshop, 39 of them (60%) from 18 different Departments/Centres answered the questionnaire. The answers to the question on ‘knowledge gaps and research challenges’ were summarized in four main themes: (i) mechanisms underlying HI; (ii) monitoring of HI; (iii) evaluation of effectiveness of interventions for reducing HI; and (iv) design of evidence-based policies to reduce HI (Box 2).

The answers to the question on ‘which type of data or other resources would be needed to tackle knowledge gaps and challenges’ were assembled into a single cluster (Box 3). This cluster included different tools and study designs needed to conduct research and fill the knowledge gaps.

Answers to the last question ‘how to work in ISS to properly address these gaps/challenges’ allowed to identify the most useful activities to improve the ISS contribution in an effort to reduce HI (Box 4).

**Box 1** Research topics in ISS Publications*Vulnerable group*

Since most of the studies on vulnerable group were on migrants, a group only for migrant has been defined (see below). The remaining publications (about 46%) were mainly focused on elderly people, disabled, high-risk mothers and infants, ethnic minorities, people with chronic mental conditions as well as people with a history of alcohol, or substance abuse and depression with a tendency to suicide. The health status and access to health care were the main issues

*Migrants*

The publications on migrants (31%) analysed how sociocultural differences influence the health and the access to health services of both regular and irregular migrants as well as refugees, and asylum seekers. Some publications focused on infectious diseases and non-communicable diseases (e.g. diabetes) affecting both adults and children with a foreign background

*Health care access*

These publications (25%) focused on disparities in health care access referring to general population. Specifically, they considered people hard-to-reach to undertake screening programmes and other prevention care as well as people living in geographical areas where access to diagnostic and treatment facilities was still limited and poor

*Health risk factors*

The publications (24%) on this topic referred to risk factors exposure and prevention. These articles investigated the relationship between life-style factors and the co-occurrence of multiple chronic non-communicable diseases. Most of these papers focused on four health risk behaviours (i.e. bad nutrition, tobacco use, alcohol abuse and lack of physical activity). Publications on environmental risk factors were also included in this group

*Social determinants of health*

Only few works (16%) analysed the inequalities in health based on socioeconomic conditions. Some of these publications focused on the relationship between lower social class and higher incidence of some chronic diseases (i.e. cardiovascular diseases). Other showed the relationship between a low financial support and the increased likelihood of adopting behaviours risky to health

*Others*

Publications underlining the phenomenon of resilience, documents on bioethics, guidelines, 'policy documents' and reports about surveillance systems coordinated by the ISS were included in this group (17%)

**Box 2** Knowledge gaps and research challenges in Health Inequalities

## Mechanisms underlying health inequalities (HI)

Relationship between social determinants and mechanisms of HI generation ('causal pathway')

Relationship between the social disadvantage of the family of origin and the development of the physical, psychological, relational and intellectual abilities of the children, with evident implications on the sphere of health (life-course perspective)

Relationship between risk factors exposure (lifestyles, environmental factors) and social determinants

Mechanisms underlying the resilience observed in Italy (why socioeconomic inequalities have a lesser impact on health outcomes?)

Relationship between social determinants and biological factors (epigenetics)

Monitoring of HI

New socioeconomic indicators for HI monitoring

Distribution of HI (with a context-focus on the different national and local realities)

Data collection for the design of interventions aimed at the social gradient and not just focused on the vulnerable group or at reducing the gap

Data collection for estimating the burden of disease due to socioeconomic differentials vs. other risk factors

Evaluation of the effectiveness of the interventions for reducing HI

Effectiveness of health and non-health intervention aimed at reducing HI

Design of evidence-based policies to reduce HI

Transfer of scientific evidence for the design of policies aimed at reducing HI using the 'health in all policies' and 'intergenerational equity' approaches

Relation between human rights and health equity

**Box 3** Resources needed to tackle knowledge gaps and challenges

Record linkage between different data sources (interoperability): interaction between sources of health, socioeconomic and administrative data (current flows, census data, multi-purpose investigations, surveillance systems, registers and epidemiological studies)

Programming and implementing epidemiological studies in ISS, enriched with social and environmental determinants information and possible resilience factors

Development of longitudinal studies/cohort studies at birth (life-course perspective)

Cohort studies to evaluate the causal link between social determinants and HI

Cohort studies to evaluate the causal link between risk factors and HI

Cost and impact assessment studies

Multidisciplinary studies on HI

'Natural experiments' of exposure to social and health policies

Use of Big Data management techniques ('machine learning')

In-depth qualitative surveys/qualitative identification of Italian resilience factors

**Survey to international experts**

The contribution of the international experts on HI was summarized and grouped into four main themes, which are described below:

- Social determinants of health: this theme focused mainly on determinants that drive inequalities in health. Despite a number of
- Analytic approach: this theme included different types of approaches to fully understand the mechanism that drives HI.

research studies implemented in the past 20 years, some important questions have still not been resolved. For example, the following questions 'Is there a causal effect of socioeconomic position on health?' and 'What mediates the effects of socioeconomic position on health?' are still widely debated.

**Box 4** How ISS should work

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Create a cross operating unit in ISS to address actions/researches/topics to be implemented to fight HI  
 Adopt a standardized and explanatory language: glossary and keywords  
 Identify the Italian stakeholders who deal with HI (public health institutions, universities and public research bodies)  
 Strengthen the National network on HI by organizing scientific meetings and encouraging study groups  
 Promote scientific meetings and study groups with international institutions/bodies working on HI  
 Select, produce and disseminate accurate documentation on HI in Italy to drive policies and actions (to support informed decision)  
 Design evidence-based actions to prevent social HI  
 Promote and implement workshops and training courses on HI (involving other areas of welfare, school, work, territory, etc.)  
 Contribute in improving the level of health information literacy in the general population (with particular attention to the school population)

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For example, to properly understand the questions raised in the previous point ‘social determinants of health’ a life-course perspective study should be implemented.

- Method of study of HI: the focus here was on the need for different types of methods and analyses. Knowledge about the effectiveness of policies and interventions to reduce HI should be increased. Besides, there is a recognized need for better evidence to support policy assumptions. For example, it is strongly necessary to investigate whether HI can be reduced through strategies of allocating investment in social determinants of health according to need (‘proportionate universalism’).
- Stratification dimension: this theme concerned the study of the different variables related to HI, such as gender, education, occupation, place of residence (rural, urban, etc.), ethnicity, to name a few.

**Discussion**

The first and main result of the Research Positioning Exercise is its significant contribution to raise awareness among ISS researchers on the importance of tackling HI. Furthermore, the Exercise provides a starting point for strategic discussion about the ISS research profile in the HI field at a national and international level.

The results obtained from the first part of the Exercise (‘What the ISS community has done’) allowed to identify how many and which type of studies have been performed so far in the HI field by ISS researchers. Upon the analysis of the ISS publications from January 2000 to December 2017, it was realized that only some aspects on HI were included in the ISS research agenda. The majority of publications had a descriptive approach and focused on population subgroups (mainly migrants) and on individual behaviours linked to chronic diseases, while only few studies targeted socioeconomic and cultural factors that drive such behaviours and, ultimately, hardly contribute to disease outcomes. Therefore, the core aspects of the HI issue, i.e. generation mechanisms and long-term monitoring, HI policies and assessment of specific public interventions, still need to be addressed in depth and should be included in the ISS future scientific research agenda.

The second part of this Exercise (‘Description of knowledge gaps and research challenges’) allowed ISS to understand their researchers’ degree of interest in HI studies, as well as their skills to implement different types of studies addressing knowledge gaps in HI. It was interesting, and a very important result in itself, to find out how many ideas and suggestions arose from ISS researchers. At this point of the Exercise, it is important to reflect on what ISS has done until now on the basis of the ISS publications over the last 7 years and what should be included in the future research agenda.

Comparing ISS current work to future challenges, the following points should be considered:

- themes on which it is necessary to continue working, which include an important part of what has been already done (e.g. about migrants/vulnerable groups);
- themes to be improved: (i) relationship between social determinants and mechanism of HI generation (‘causal pathway’) and (ii) relationship between risk factors exposure (lifestyles, environmental factors) and social determinants;

- themes that need to be addressed: (i) mechanisms underlying the resilience observed in Italy; (ii) new socioeconomic indicators for HI monitoring; (iii) distribution of HI (with a context-focus on the different national and local realities); (iv) data collection for the design of interventions aimed at tackling the social gradient; and (v) evidence-based policies aimed at reducing HI.

The third part of the Exercise (‘How to work together’) was very helpful to focus the actions required to progress effectively in the HI field. As a first step, a specific Operating Unit dedicated to HI should be started to better address and coordinate the specific scientific activities and research priorities.

Another important aspect concerned the need to strengthen a co-operative approach and to facilitate exchange among Italian stakeholders who deal with HI. In this context, it is important to mention the event that occurred in Rome in December 2017, in which ‘L’Italia per l’Equità nella Salute’ (Italy for Health Equity) was presented.<sup>12</sup> The document represents a joint effort of national institutions involved in public health and in the study and description of HI. It presents the main features of HI in Italy and identifies possible actions and strategies to reduce health disparities. The above points represent a fertile field of activity to work on with shared responsibility and collaboration among all Italian stakeholders.

The international collaboration is also to be considered as a high-level priority. As a matter of fact, the ISS decision to coordinate the Joint Action on HI, Joint Action Health Equity Europe,<sup>13</sup> reflects ISS commitment to promote the exchange of scientific knowledge and experiences with colleagues from other European countries and international Institutions to tackle HI. The Joint Action is financed by the EC within the Third Public Health Program 2014–2020, and includes 25 participating European countries.

Finally, a very important issue is the relationship between ISS and the Italian regions. Italy started its investment in health equity with its new National Prevention Plan (NPP 2014–2018), which has included reducing HI among the five macro-objectives of the plan.<sup>14</sup> In accordance with the NPP, each Italian region had to develop its own Regional Prevention Plan (RPP) taking into consideration HI within prevention activities. The analysis of the projects included in RPPs showed that the level of attention on the reduction of HI is different among regions. Few regions have developed an explicit strategy to tackle HI (i.e. Piemonte, Emilia Romagna, Marche and Trento Autonomous Province). Other regions (i.e. Puglia, Lazio, Lombardia, Sardegna and Veneto) have developed a high level of awareness of the problem and at least one exercise addressing health equity has been included in their RPP. Other regions instead (i.e. Abruzzo, Liguria and Molise) have not considered actions addressing HI in their RPP yet. The new NPP shows an increased interest in the HI field also due to the commitment of the Ministry of Health in encouraging actions to improve the health equity at regional and national levels. The challenges for the future concern the choice of priorities, the identification of effective preventive actions and the development of more vigorous interest and commitment in tackling HI at governance level (Health and Equity in all Policies). In this respect, the ISS, through its role as the Italian research institution

for public health and as ‘third party’, might contribute to a collaborative relationship among the regions and support effective policies and interventions able to reduce HI.

In conclusion, the present Research Positioning Exercise is the first one to be carried out on HI studies in ISS. Its importance is due to in the fact that for the first time many ISS researchers have had the opportunity to meet and compare their own scientific experiences on the same target. Findings of this exercise show that relevant themes and related areas of intervention, addressing inequalities in health, have been identified by the ISS researchers. Because of ISS’ structural peculiarity that includes multidisciplinary expertise, many of the above themes might be included in the future ISS agenda. Therefore, ISS scientific activities might effectively improve national and international interventions against HI.

At an international level, this research positioning exercise could represent an input for other public health research institutions and strengthen a cooperative approach in tackling HI and facilitate exchange and learning among countries. In this regard, the EU Marmot review published in 2013 provided a comprehensive analysis of policies and interventions set by national governments, confirming the large heterogeneity that exists between countries in the level of response to HI.<sup>15</sup>

The role of the health sector in tackling HI is central. A public health research institution, such as the ISS, can play a pivotal role in research and knowledge-building for monitoring, evaluating, and including the impact of core policies and health equity. Establishing a formal commitment and devoting dedicated resources to health equity may represent a model for other institutions and can stimulate an international network of efforts pledged to reduce HI.

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*Conflicts of interest:* None declared.

## Key points

- Health inequalities (HI) represent an important area of research at the Istituto Superiore di Sanità—ISS (National Institute of Health of Italy).
- The ISS Research Positioning Exercise highlighted the need to further investigate the mechanisms underlying HI, such as the causal pathway and the relationship between risk factors exposure and social determinants.
- Special attention should be given to the identification and dissemination of accurate documentation on HI in Italy to support the informed decision and to drive policies and action.

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