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Walking the talk: a mixed-methods study investigating current opportunities for promoting health impact assessment practice

Audrey J. Simon^{a,b}, Adithya Pradyumna^c, Astrid M. Knoblauch^{a,b} and Mirko S. Winkler^{a,b} 

^aDepartment of Epidemiology and Public Health, Swiss Tropical and Public Health Institute, Basel, Switzerland; ^bUniversity of Basel, Basel, Switzerland; ^cAzim Premji University, Bengaluru, India

ABSTRACT

Although Health Impact Assessment (HIA) has been gaining momentum over the past decade, it is still a relatively small field of practice. Here we explore whether possible opportunities to promote the field of HIA can be translated into concrete actions. We pursued an exploratory sequential mixed-methods approach. In a first step, HIA practitioners' ideas were collected across 18 semi-structured interviews. Building on these insights, a survey questionnaire was developed in a second step, and answers from 25 HIA practitioners were collected in a last step. We found that delivering awareness on HIA creates the most important opportunities. To exploit these opportunities, high potential was recognized in the strengths of HIA practice, namely in broader stakeholder engagement and showcasing HIA's evidence-based approach. HIA practitioners are best positioned to initiate actions that promote their practice, but they also depend on various influential actors such as governments and the World Health Organization (WHO). Developing an open exchange platform allowing all HIA stakeholders to connect seems an urgent strategy to pursue for strengthening HIA's popularity, appeal, and reach.

ARTICLE HISTORY

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KEYWORDS



Action levers; health impact assessment; mixed-method

Background

Health Impact Assessment (HIA) is a field that finds its origins in environmental impact assessment (EIA) (Harris-Roxas et al. 2012). At the end of the 20th century, HIA gained momentum when it was explicitly promoted by the World Health Organization (WHO) as a one of the 'priorities for health promotion in the 21st century' (WHO 1997). Recognized as an important tool to promote responsibility for health across sectors, HIA practice evolved into a distinct field of impact assessment practice around the globe (Harris-Roxas et al. 2012; Linzalone et al. 2018; Thondoo et al. 2019). Today, HIA is defined as a multidisciplinary approach that 'systematically judges the potential, and sometimes unintended effects of a project, program, plan, policy, or strategy on the health of a population' (Winkler et al. 2021). It aims to facilitate the mitigation of negative health effects and the enhancement of positive health effects. Considered as a key tool for taking a comprehensive health-in-all-sectors approach, HIA can be both an integrated assessment of human health carried out as part of other forms of impact assessment (e.g. EIA, social impact assessment (SIA), strategic environmental assessment (SEA) (Douglas et al. 2011; Fischer et al. 2019)) or as stand-alone HIA (Yap 2016; Blåhed and San Sebastián 2022).

HIA practitioners are aware of the significant contribution that the use of HIA can make 'to secure the future we want, for present and future generations' (UN 2012). But faced with today's fast-changing environment, HIA practitioners also realize how essential it is to ensure that HIA remains relevant to the challenges ahead. Demonstrating the value that HIA practice adds to society and its impact on the world is key to keeping HIA practice competitive and attractive, strengthening its capacity and sustaining its funding. Recognizing that a lack of promotion of HIA practice could be detrimental to the discipline, a recent research study providing a snapshot of the current global HIA practice opened the discussion on ways to promote the practice and concluded that 'efforts are needed to address the main barriers in HIA use' (Winkler et al. 2020). But time has come to move beyond these barriers and take a positive approach by asking a constructive question: do current possible opportunities to promote the field of HIA in the coming years have favorable circumstances or factors that provide key levers for concrete actions?

The Cambridge Dictionary defines opportunity as 'an occasion or situation that makes it possible to do something that you want to do or have to do, or the possibility of doing something'. Opportunities to promote HIA practice are therefore not only opportune

CONTACT Mirko S. Winkler  mirko.winkler@swisstph.ch  Department of Epidemiology and Public Health, Swiss Tropical and Public Health Institute, Basel, Allschwil CH-4123, Switzerland

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circumstances, they can also be the spark that anticipates conscious action. The concerns of Fehr et al. (2014) captured this dualism:

... the missed potential of impact assessments to protect and promote health is underutilized, and represents a missed opportunity. Ways need to be found to exploit the potential to a fuller extent. (p. 134)

It is both crucial not to miss opportunities and to exploit them to a fuller extent. This in turn leads to two specific mechanisms: identifying possible opportunities and recognizing what makes opportunities exploitable, or not. Considered distinctly in the early days, the interconnection of these mechanisms in complex and dynamic processes is gaining momentum (Short et al. 2010; Dufays and Huybrechts 2014; Vogel 2017), both in business and social entrepreneurship research.

To cover the full scope of the issue, this research study focused on three sequential and overlapping questions: What are the opportunities currently relevant for HIA practice? What is the potential to exploit the identified opportunities? What combinations of favorable circumstances or factors are key levers to translate these potential opportunities into actions?

Methodology

We applied an exploratory sequential mixed-methods approach. This is a three-step design (Creswell and Plano Clark 2017) in which research first explores a problem with a qualitative study, then, in a second integration step, builds on the qualitative findings to

develop a quantitative study, which is finally implemented in a third step. The rationale for selecting an exploratory sequential design was twofold; on the one hand it is best suited to both explore the opportunity phenomenon in depth and measure the significance of its variables, and on the other hand it neatly conceptualizes Vogel's entrepreneurial learning theory (2017), which 'traces the evolution from raw ideas to opportunity, exploitation, and beyond'.

Figure 1 describes the sequential steps of the study. The aim of the qualitative study was to map the different perspectives that HIA practitioners expressed around opportunities to further promote the practice of HIA. Data was collected through semi-structured interviews with self-identified HIA practitioners, sought through purposive sampling. The following questionnaire development aimed to identify variables on actionable opportunities. And finally, the resulting survey intended to ascertain whether opportunities identified in the qualitative phase have the potential to be exploited for promoting and expanding HIA practice. Figure 2 shows the array of questions used to achieve these objectives. A detailed description of the study steps and methodological features is provided in Appendix 1.

Results

Findings from the semi-structured interviews

A total of 18 qualitative interviews were conducted with respondents who had worked in different fields of activity and in various parts of the globe (Table 2).

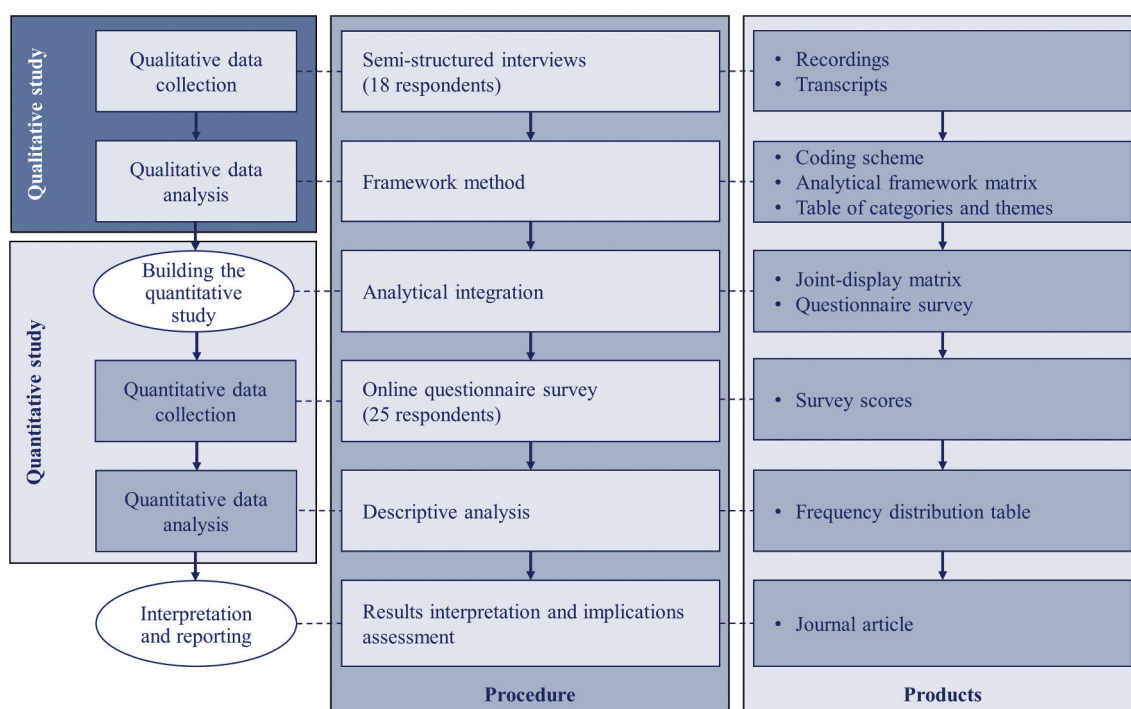


Figure 1. The exploratory sequential mixed-methods process for the recognition of opportunities that promote and expand HIA practice.

Table 1. List of themes and categories.

Opportunity themes	Categories
I. Possible opportunities to enhance HIA expertise and capacity	<ul style="list-style-type: none"> ● Targeting various groups of people ● Training and/or education (programs and methods) ● Making use of technical and managerial tools (artificial intelligence, accreditation) ● Using or fostering conducive conditions (SDGs, broad stakeholder engagement, career development)
II. Possible opportunities to establish policies and legal frameworks for HIA	<ul style="list-style-type: none"> ● Development of laws and policy frameworks (integration of specific health considerations, and health monitoring elements) ● Adjustment of HIA guidance documents (HIA definition, methodology and quality assurance) ● HIA institutionalisation (through government capacity, and activities where dialogue is in place)
III. Possible opportunities to deliver HIA awareness	<ul style="list-style-type: none"> ● Having various advocates ● Applying potentially useful strategies ● making use of financial incentives ● making HIA a benchmark ● encouraging exchanges ● Communicating with appropriate communication tools and channels ● Considering socio-economic contexts (emergencies, communicable diseases, cultural shifts)
IV. Complexity of opportunities	<ul style="list-style-type: none"> ● Interrelationship (between themes I and III, II and III, I and II, I and II and III) ● Prioritization (bottom-up approach, top-down approach)

HIA, Health Impact Assessment; SDG, Sustainable Development Goal.

Possible opportunities that practitioners identified were detailed along three themes, as shown in Table 1. The linkages between those themes led to a fourth theme on the complexity of the opportunity phenomenon.

Possible opportunities to enhance HIA expertise and capacity

Respondents identified different groups of people to target to improve HIA expertise and capacity. Training and teaching was the most mentioned idea, both in terms of programs and methods to be implemented. Also considered were the potential of some tools, as well as the different conditions that favor the strengthening of HIA expertise and capacity.

Almost half of the respondents emphasized the need to target not only public health professionals, but also practitioners of other forms of impact assessment (see quote 1, Figure 3). The need to work more with decision-makers, government regulators and

financial institutions was also suggested. Less mentioned but specifically identified by two respondents were trainings within the companies from the private sector.

The need for comprehensive or specific programs like training the trainers, or programs ‘to enhance interdisciplinarity (. . .) for more understanding of intercultural aspects of health’ (respondent 4) were discussed by almost all respondents. Three avenues for teaching or training were indicated: teaching at university-level, practical trainings and partnerships. The need for practical trainings were discussed (i) from an academic angle through capstone or PhD programs, and from (ii) a vocational angle (see quote 2, Figure 3).

Also considered by a minority of respondents were tools. Technical tools like artificial intelligence ‘to help making decisions faster’ (respondent 8), and managerial tools like accreditation to encourage people to attend HIA trainings.

Finally, respondents highlighted a number of conducive conditions for enhancing HIA expertise and

Table 2. Participant information to the qualitative and quantitative studies.

Characteristic of respondents	Qualitative Study		Quantitative Study
	N (%)	Average interview time (min)	N (%)
Category			
Practitioner	10 (55.5)	24.9	16 (64.0)
Lender	2 (11.1)	34.2	0 (0.0)
Proponent	3 (16.7)	21.2	5 (20.0)
Health authorities	3 (16.7)	23.5	3 (12.0)
Teacher			1 (4.0)
Experience			
LMIC experience	7 (38.9)	21.7	9 (36.0)
HIC experience	5 (27.8)	24.6	8 (32.0)
Global experience	6 (33.3)	29.4	8 (32.0)
Gender			
Male	9 (50.0)	24.8	
Female	9 (50.0)	25.4	
Total	18 (100.0)	25.1	25 (100.0)

HIC, High-Income Countries; LMIC, Low- and Middle-Income Countries.

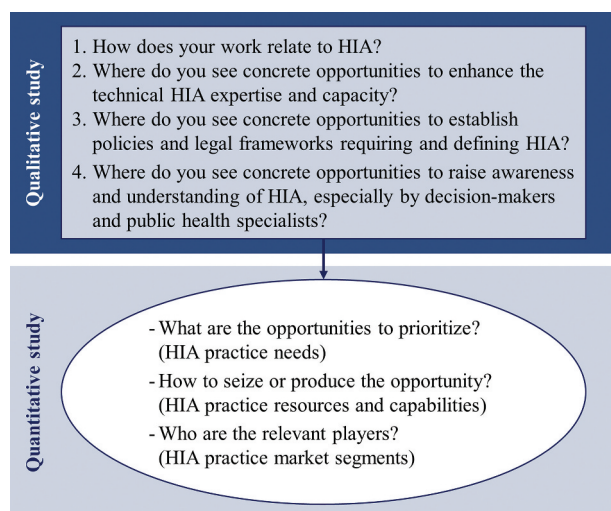


Figure 2. Array of questions developed along the exploratory sequential mixed-methods process.

technical capacity: those that are already in place, such as the Sustainable Development Goals (SDGs), but also those that need to be actively nurtured or secured, such as stakeholder engagement (see quote 3, Figure 3) or the advancement of sustainable career paths (see quote 4, Figure 3).

Possible opportunities to establish policies and legal frameworks for HIA

The respondents mainly focused on (i) strengthening the laws and policy frameworks, (ii) reforming/improving the HIA guidance documents, and (iii) institutionalizing HIA through government capacity or activities where dialogue is already in place.

Most respondents emphasized the need to integrate specific health considerations into laws and policy frameworks, with some even calling for more than consideration, but also for monitoring. Conceding that HIA is currently more focused on voluntary than mandatory HIA, the inclusion of a human or population health consideration in the regulatory standards of the various sectors, in the terms of reference documents of lenders, and more specifically into existing and popular EIA and SEA laws and policies were seen as major incentives (see quote 5, Figure 3). Beyond introducing a health element into laws and policy frameworks, some respondents stressed the importance of requiring health surveillance and evaluation. The potential of such proactive approaches was emphasized, for example, by recalling the recent COVID-19 pandemic situation (see quote 6, Figure 3).

In order to establish policies and legal frameworks that include HIA, respondents also saw the need to adjust HIA guidance documents to better clarify what HIA is (see quote 7, Figure 3), who does it and how. Clarifying how HIA activates and is implemented was a topic that preoccupied all groups of respondents across a wide variety of aspects: functional aspects defining what work is involved, what is the pricing; organizational aspects defining who is the right person to be delivering an HIA or how long it takes; and also quality aspects to define how well practitioners do it.

More than three-quarters of respondents realized that it is not enough to develop requirements and adjust guidelines, but that HIA must also be institutionalised. For this, they identified opportunities in government capacity development (see quote 8, Figure 3)

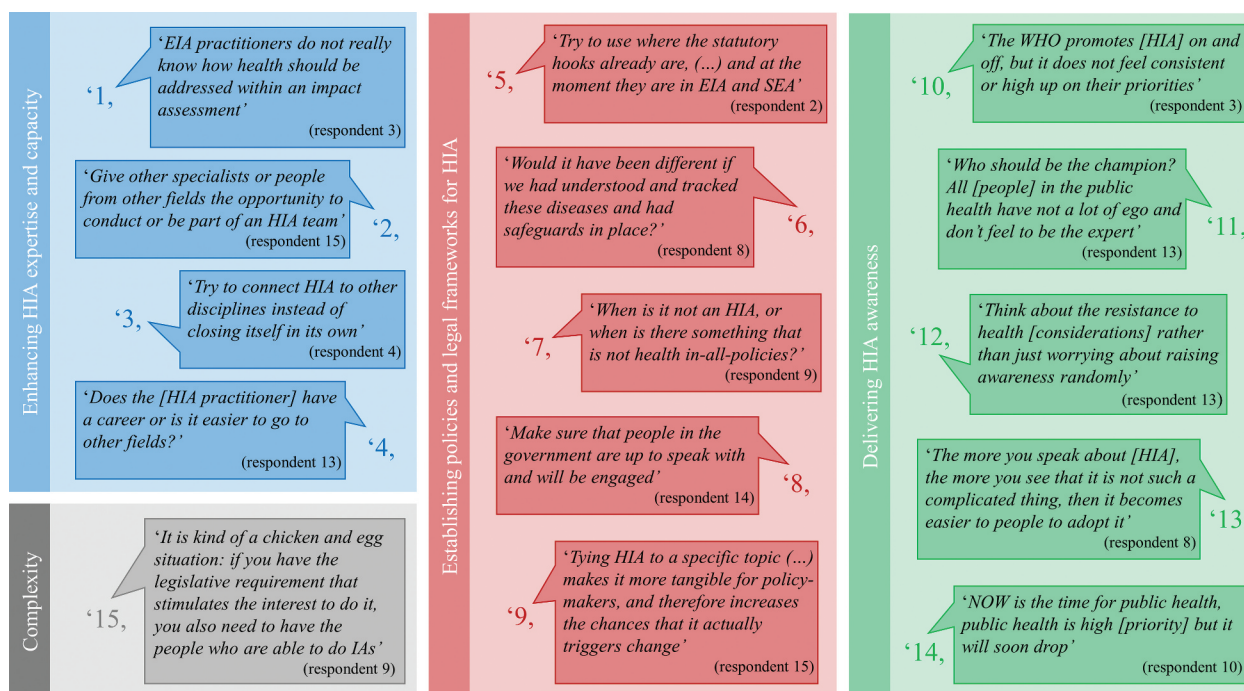


Figure 3. Quotation boxes.

and in activities where policy dialogue is already activated (see quote 9, [Figure 3](#)). Capacity referred to in this context were dedicated HIA officers within the government, and their HIA knowledge: their opportunity to think about it and understand its value. Ongoing projects and existing topics were identified mainly in the energy sector (wind, solar, hydro, mining and petrochemical sectors) and the very topical issues of climate change and Covid-19, but also in the transport sector, planning applications, and health sector-specific proposals and planning activities.

Possible opportunities to deliver HIA awareness

To deliver HIA awareness, respondents (i) identified various potential advocates of HIA, (ii) discussed different strategies to promote HIA practice, (iii) the use of appropriate communication tools and channels, (iv) and the timely consideration of socio-economic contexts.

Respondents considered a wide variety of potential advocates to promote HIA practice: local stakeholders being informed or even involved in some HIA activities; authorities and international institutions such as lending agencies, development agencies and more specifically the WHO; and lobbying groups such as professional associations or dedicated HIA champions. Uncertainty was, however, expressed around the role of the WHO (see quote 10, [Figure 3](#)), and around the willingness of HIA champions to take the lead (see quote 11, [Figure 3](#)).

To pass on the message of HIA awareness, three main strategies were deemed potentially useful: making use of financial incentives, making HIA a benchmark, or encouraging better dialogue between all impact assessment disciplines (e.g. human right social, health and environment; or practitioners, private and public sectors; or experts and juniors). The financial incentives cited by the respondents included liability incentives such as the polluter-pay principle, or direct funds to organize training courses on HIA and invite participants to join. However, caution has been expressed about the sporadic nature of these opportunities when the money goes. Making HIA a benchmark by using it as a way of promoting competition with other regional governments or as a warranty for industries' reputation and their shareholders was mentioned as another strategy to nurture HIA awareness and understanding. To support this, respondents mentioned the need for advocacy actions such as movements and protests by the civil society, but also the necessity of developing greater political acumen of HIA practitioners (see quote 12, [Figure 3](#)). As further strategy to deliver HIA awareness, many respondents saw a great opportunity by concretely bringing relevant players together. A call for IAIA sessions, avenues, forums or working groups has been

made in several interviews. This to 'foster interdisciplinary connection to other fields' (respondent 4), 'to have difficult conversations and integrate considerations of most vulnerable people' (respondent 8), and 'to network, mentor people and sustain career paths' (respondent 13).

Communicating on HIA with appropriate communication tools was discussed as another way to deliver HIA awareness. Giving more visibility to HIA works by making them public' was indicated by two-thirds of the respondents (see quote 13, [Figure 3](#)). The communication tools and channels mentioned ranged from case studies, policy briefs, web pages, videos, to social media, with social media mentioned only once.

Finally, respondents noted how socio-economic contexts can be sources of opportunity (see quote 14, [Figure 3](#)). Windows of opportunities were indicated across all respondent groups: from pandemic emergencies, disasters and climate changes, to increases in communicable diseases and cultural shifts related to equity, well-being and political considerations.

Complexity of opportunities

Complex linkages between themes were observed across the interviews, both in terms of interrelation and comparison.

A strong interrelation was observed between themes, with respondents jumping back and forth between them or some specifically pointing out linkages (see quote 15, [Figure 3](#)).

Practitioners also compared themes with each other, expressing different views depending on their experience and interests. Respondent 15 considered, for example, that 'if (he) had to promote one opportunity it would be the capacity building and technical expertise, because this is where you create awareness (...) that, in the long term, results in policy change' (respondent 15), while respondent 2 considered, on the contrary, that 'training programs will happen if there is the requirement'.

Analytical questionnaire building

Exploring the potential of the identified opportunities highlighted three key features for their possible exploitation: their degrees of relevance, applicability, and adherence. The integration of these variables into survey items is presented in the joint display in [Appendix 2](#).

Relevance: The strong interrelation between the possible opportunities identified in the qualitative study, augmented by the different perceptions of HIA practitioners, demonstrated that no theme should be eliminated or given less relevance at this stage of the study. However, in seeking the most appropriate course of action in the current context, it appeared

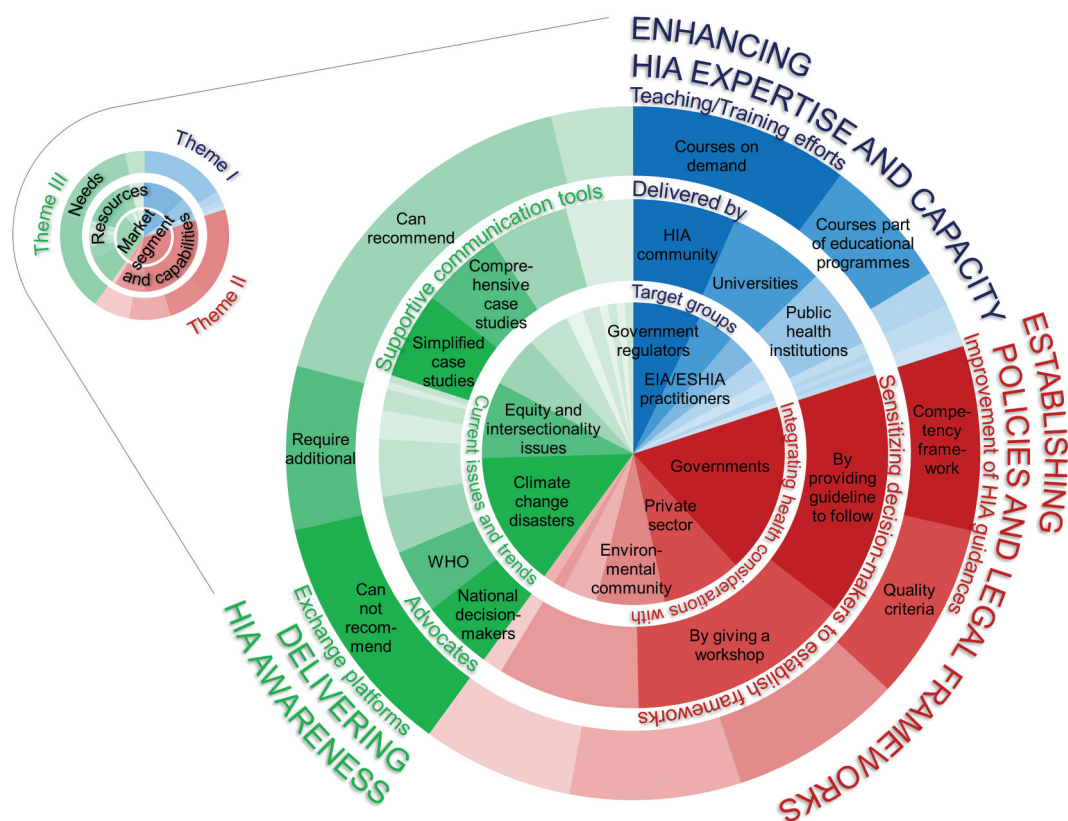


Figure 4. Identified key levers of current possible opportunities that promote and expand HIA practice.

necessary to clarify the degree of relevance of certain items in order to prioritize possible exploitation efforts.

Applicability: Referring back to the Cambridge Dictionary definition of opportunity, the new insights gained from the qualitative analysis showed that HIA practitioners often interpreted the term opportunity as the 'occasion or situation that makes it possible to do something' and less as 'possibility of doing something'. In such cases, it became essential to explore to what extent the prerequisites for ensuring the applicability of these potential opportunities were already in place or not.

Adherence: A further pattern observed along the qualitative findings was the tendency of HIA practitioners to dwell on challenges even though they were asked to adopt a positive perspective moving forward and beyond the already known barriers. Given that such attitudes may prevent opportunities from being exploited, it seemed appropriate to include a third variable to understand the degree to which practitioners would promote the possible opportunities or assess who is best positioned to realize them.

Findings from the questionnaire survey

In total, 25 HIA practitioners with experience in different activity fields and for all parts of the globe completed the survey (Table 2). Figure 4 shows the key levers identified for each opportunity theme along the

dimensions of needs, resources and capacities, and market segments of HIA practice. All statistics are available in the joint display, Appendix 2.

Key levers to enhance HIA expertise and capacity

To enhance HIA expertise and capacity, respondents identified government regulators (36.0% [9/25]) as the group of people currently most in need for HIA education and/or training. The second target group identified was EIA and ESHIA practitioners (20.0% [5/25]), followed by public health specialists (12.0% [3/25]). Only a few respondents prioritized financial institutions (8.0% [2/25]), the private sector or local communities (4.0% each [1/25]).

Most respondents (84.0% [21/25]) were aware of specific HIA teaching and training efforts. Of all HIA teaching and training efforts identified, the most common types of efforts were courses available on demand (51.0% [25/49]) and courses that are part of educational programs (30.6% [15/49]) such as, for example, HIA being part of university Master programs. A few practitioners recognized that programs offered by local authorities (8.2% [4/49]), or self-training possibilities (4.1% [2/49]) through webinars or guidelines were also sources of HIA expertise and capacity enhancement.

When asked to select all groups of persons or organizations best positioned to deliver HIA courses or trainings tailored to the wide diversity of players, respondents ranked themselves first, as HIA

community (32.7% [18/55]), together with universities (30.9% [17/55]). Also often selected were public health institutions (25.5% [14/55]).

Key levers to establish policies and legal frameworks for HIA

Supporting the integration of human/population health considerations into legal or regulatory frameworks was an activity in which the majority of respondents (72.0% [18/25]) reported being already active. This primarily involved engaging with governments (45.5% [15/33]) with, for example, policy dialogue and policy development, and engaging with specific private sector actors (21.2% [7/33]) and environmental stakeholders (18.2% [6/33]) by, for example, delivering courses. Only few activities with financial institutions, international or multilateral institutions and local communities were reported.

Also, most respondents (68.0% [17/25]) reported actively sensitizing decision-makers during the course of an HIA mandate to establish policies or legal frameworks that require and define HIA. To do so, they equally stated that they either provided guidelines to follow (38.7% [12/31]) or offered a workshop (35.5% [11/31]).

To establish policies and legal frameworks that include HIA, respondents expressed the need to improve existing HIA guidance documents created by organizations such as the IFC or IAIA. Competency framework and quality criteria were considered as the most useful aspects to develop.

Key levers to deliver HIA awareness

Respondents identified case studies as a very successful type of communication tool to build awareness and understanding of HIA. Simplified case studies that can be used by different stakeholders, and not necessarily by health specialists, were considered slightly more successful than comprehensive studies. While videos were rated as very successful on average, more than a quarter of the respondents were unaware of their success. Aside from policy briefs, no other communication tools were reported.

When asked who would be the most influential HIA advocates in the next two years, respondents first identified national decision-makers (22.7% [10/44]) and the WHO (20.5% [9/44]), followed by development agencies and professional associations (18.2% each [8/44]). Pressure groups, lending agencies, local communities and public health institutions were also reported.

Interdisciplinary knowledge sharing was considered to be crucial to deliver awareness and understanding of HIA. Less than half of the respondents could recommend existing platforms that successfully encourage interdisciplinary exchanges on HIA (e.g. conferences, forums, webinars, or social media) (42.9% [9/21]). IAIA (32.0% [8/25]) was the most cited platform, followed by the Society of Practitioners of Health Impact Assessment (SOPHIA) (12.0% [3/25]). The majority of respondents could not recommend any platforms (28.6% [6/21]) or reported a need for additional platforms (19.0% [4/21]).

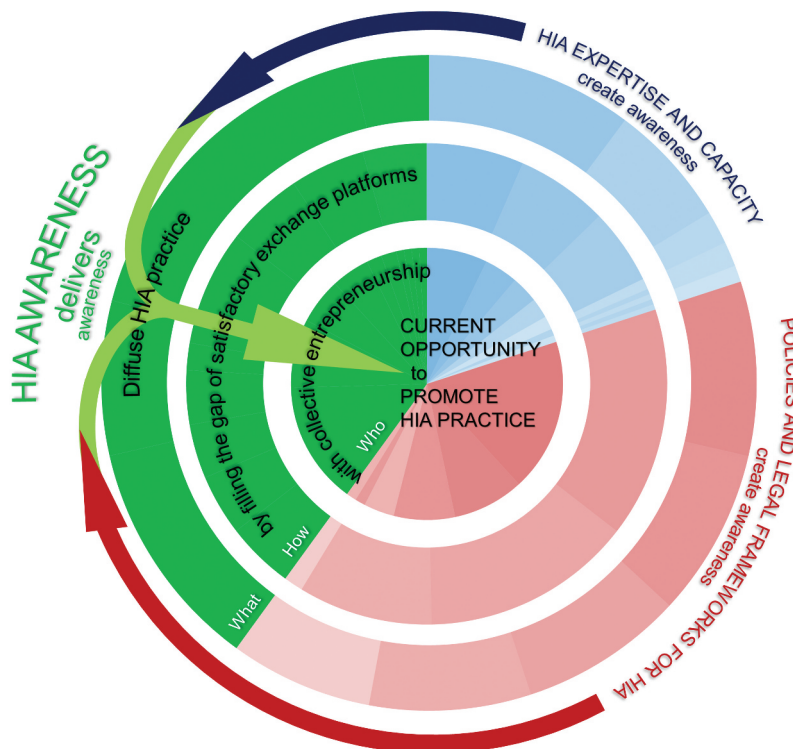


Figure 5. Current opportunity pathway to promote and expand HIA practice.

Pointing out to survey respondents that awareness may depend on time-limited issues or trends like pandemic emergencies or cultural shifts, respectively, they identified climate change disasters (36.4% [16/44]) and equity and intersectionality issues (20.5% [9/44]) as the two topics currently capturing the most attention.

Desire and feasibility

To promote HIA practice, most respondents indicated raising awareness and understanding of HIA, or establishing policies and legal frameworks that regulate the use of HIA as the top priority (40.0% each [8/20]). To enhance HIA expertise and capacity was identified as the top priority by 20% of respondents (4/20). When asked what action they would personally be interested in taking, most practitioners selected to develop a new HIA course (22.7% [10/44]), followed by building a new exchange platform (18.2% [8/44]) and making sure to always publish the results of their projects (15.9% [7/44]). Overall, respondents declared to be interested or motivated to take action (76.2% [16/21]) and identified the evidence-based approach (30.0% [15/50]) and stakeholder engagement (28.0% [14/50]) as the key strengths of HIA.

Discussion

In this paper we explored whether possible opportunities currently relevant for HIA practice have key levers to promote practice in the coming years. By challenging the three main barriers identified by the reference study that provided a snapshot of the current global HIA practice (Winkler et al. 2020), levers were recognized along the dimensions of needs, resources and market segments of HIA practice. Rather than focusing on barriers to HIA practice, as discussed in previous papers (Fehr et al. 2014; Linzalone et al. 2018; Winkler et al. 2020), our study took a positive approach by anchoring on the potential and strengths at hand for HIA practice and its practitioners; this, not only to sustain the currently increasing trend of HIA practice (Winkler et al. 2020), but also to support adoption across the world.

Spotting key levers of HIA practice is not a straightforward process: identified opportunities are strongly interrelated and perceived differently among HIA practitioners. In addition, promoting HIA practice involves a variety of stakeholders with potentially conflicting interests and values. A complete understanding of the practice system is demanded to continuously reshape and refine ideas in response to a context in constant evolution (Short et al. 2010; Dufays and Huybrechts 2014; Vogel 2017). This elevates the investigation of opportunities to promote HIA practice from a complex to a wicked problem (Skaburskis 2008; Lönngren and van Poeck 2021). It requires constant compromises and trade-offs

between their actors to find pragmatic solutions that are neither right nor wrong, but better or worse for a given time (Peters 2017).

To break through the confusion and identify the best opportunities to promote HIA practice (Figure 5), the following chapters disentangle internal and external factors of HIA practice step by step.

Diffusing HIA practice

In this paper, we aimed to recognize what opportunities relevant for HIA practice should currently be prioritized. Raising awareness and understanding of HIA, mainly among government regulators, emerged as central opportunity. Delivering HIA awareness was not only identified as priority by HIA practitioners, it is also where practitioners are interested or motivated to engage in new actions. This is in line with recent calls for strengthening awareness among decision-makers, private consultants and financing institutions (Cave and Birley 2010; Linzalone et al. 2018; Winkler et al. 2020), but also among impact assessors themselves (Fehr et al. 2014) or for specific world regions (Winkler et al. 2013; Gulis 2019). Considering that promotion is the attempt to make a product popular, the attitude of prioritizing awareness seems logical when seeking opportunities to promote HIA practice. However, findings reveal a discordance between practitioners' attitudes (i.e. desires) and behaviours (i.e. actions): if they believe in raising awareness, they react more upon training and establishing legal frameworks. Indeed, as shown by Winkler et al. (2020), various specific training and education courses are already available. In addition, initiatives aiming to promote and institutionalise HIA practice have been issued by various institutions, namely international or multinational agencies (EU 2014; WHO 2017), local authorities (Government of Thailand 2007; Public Health Wales 2017; Public Health England 2017), financing institutions (IFC 2017; ADB 2018; EP Association 2020) and industries (IPIECA 2005; ICMM 2010). While focusing on the strategic divide between requiring to train or training to require, HIA practitioners miss the fact that education and law can create awareness, but do not deliver it (Rothschild 1999). Thus, if HIA frameworks, expertise and capacity remain relevant issues, diffusing HIA practice for effective uptake is an urgent behaviour to adopt for promoting and expanding HIA practice (Krieger et al. 2012; Byambaa et al. 2015).

Filling the gaps

Potential to exploit the identified opportunities was recognized in the strengths of HIA practice, namely endorsing broad stakeholder engagement and showcasing the evidence gained through HIA practice. This confirms the values presented in the updated IAIA HIA

International Best Practice Principles (Winkler et al. 2021), as well as the point made by a recent perspective paper highlighting the benefits of case studies to entice stakeholders in areas where legal frameworks are limited (de Souza Hacon et al. 2018). Knowing where potential lies is golden information for practitioners with limited capacity (Kearney 2004; Harris-Roxas and Harris 2007). Unfortunately, our study shows a paucity of satisfactory resources to support both stakeholder engagement and the diffusion of HIA evidence. Indeed, the need for more exchange expressed across the qualitative discussions suggested a lack of suitable exchange platforms and was confirmed by the survey with a minority of HIA practitioners recommending the existing ones. This places HIA practice in a paradoxical situation. While public participation and stakeholder involvement are central elements of HIA practice (Harris-Roxas and Harris 2007; Winkler et al. 2021), the HIA community itself is not being exemplary in its exchanges (Kearney 2004) of perspectives, experiences and information. Tackling interdisciplinary and multisectoral collaborations in a more holistic manner is a well-known and recurrent issue for the HIA community (Nowacki 2018; Dietler et al. 2019) and also one of the keys (SDG 17) of the 2030 Agenda for Sustainable Development (UN 2015; Gulis 2019; Green et al. 2020). But as Sarasvathy et al. (2005) already pointed out many years ago, it is not always enough to wait for opportunities to arise. Sometimes they may have to be created or adapted to fill the gaps and get seized. Thus, refining or even creating satisfactory exchange platforms appears not only as a necessity, but also as a safeguard to avoid setbacks, maintain the confidence of its protagonists, reach a wider audience and, ultimately, sustain HIA practice.

Collective entrepreneurship

In seeking to identify which ambassadors are in the best position to seize potential opportunities, our study identified HIA practitioners not simply for their expertise in the field but for their willingness and commitment. With three-quarters of survey respondents expressing interest or motivation to take new actions for promoting HIA practice, practitioners confirm their leadership capacity to diffuse HIA practice and fill the gaps they pointed out. Moreover, reporting being best positioned to engage or already engaged in many promoting activities, HIA practitioners also hold themselves accountable. This observation supports the view that it is at the community level of HIA practitioners and their associations to initiate solutions to societal needs (Shaw and Carter 2007; Dufays and Huybrechts 2014). Therefore, HIA practitioners, together with associations such as the IAIA, need to more actively position HIA practice and provide the

platforms for their stakeholders to connect, communicate and exchange (Harris-Roxas et al. 2012; Haigh et al. 2015).

When investigating the possible opportunities for promoting HIA practice, national decision-makers and environmental stakeholders were systematically targeted. This is reflected in efforts over the last years to foster political dialogue (Winkler et al. 2020; Thondoo and Gupta 2020), strengthen legal frameworks (Government of Thailand 2007; Public Health Wales 2017) and include health in environmental guidances (Nowacki 2018; Cave et al. 2021) as in all policies (Rogerson et al. 2020; Green et al. 2021). Another significant actor – the WHO – was specifically identified as currently being one of the most influential advocates for conveying the message of awareness and understanding of HIA. However, no activities to embed WHO were reported during our study, which may explain the lack of support decried in the literature (Winkler et al. 2013, 2020). Stakeholders inclined to pull the market for HIA are thus embedded, while those able to push it, such as the WHO, are apparently overlooked. Considering that power lies in an elaborate network of stakeholders where all parties have a role to play (Corner and Ho 2010), not coordinating the vast system of influence of HIA practice is a missed opportunity. This is why HIA practitioners should not only pursue the promotion of practice on their own or pass the responsibility to another person or group of people. By collective entrepreneurship, HIA practitioners should take the lead in engaging multiple actors, including WHO.

Strengths and limitations

The mixed-methods research approach made it possible to draw on the strengths of both qualitative and quantitative methods. The qualitative method allowed for a deep understanding of HIA practitioners' ideas and the quantitative approach allowed for a broad recognition of the levers translating potential ideas into concrete opportunities. It is important to note that respondents were exclusively HIA practitioners, and were contacted mainly through IAIA channels. The specificity and small sample size of this audience segment may be a source of bias and is considered the main limitations of this study. For example, through representativeness bias and sampling bias by not reaching other HIA stakeholders, or self-selection bias by including willing and motivated practitioners, but also confirmation bias by favoring HIA practice over other impact assessment practices. However, considering the necessity to first clarify the core patterns of the practice, and in view of the even distribution of respondents' activities in all parts of the world, this study still provides a valuable glimpse on the current opportunities for promoting HIA practice.

Conclusions

Developing an HIA open knowledge exchange platform to learn, connect and impact appears as an urgent strategy to pursue. By engaging all community members (users, practitioners and advocates) in shared leadership roles, an open platform would fill the gap between knowledge, attitude and practice by informing, valuing and sustaining the efforts already invested in HIA practice. A smart platform must draw attention and interest to the benefits that HIA practice brings to society, at any time and all over the world. HIA practice embodies highly credible values that must absolutely be communicated to create a strong brand and generate social value. This is not a matter of branding from a commercial marketing perspective, but of capturing the value of a social enterprise. Macro social marketing, an approach used to develop activities aimed at changing institutional norms for the benefit of individuals and society, appears to be an appropriate concept to launch this effort. This is a call to action and participatory leadership to all those working in the HIA discipline to strengthen its popularity and improve its internal and external appeal and reach.

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ORCID

Mirko S. Winkler  <http://orcid.org/0000-0001-7387-3863>

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Appendix 1. Step-by-step methodology

Qualitative study

The first part of the study consisted of semi-structured interviews.

Data collection

The target population was self-identified HIA practitioners having been involved in conducting or implementing HIAs.

An invitation e-mail – including a link to a short (3 min.) introductory video – was sent to approximately 180 potential study respondents with a request for an interview of approximately 10 minutes. An announcement was also published on the International Association for Impact Assessment (IAIA) connect portal. Upon replies to request, interviews were scheduled at a mutually convenient time and conducted in English using Zoom. To ensure an adequate sample, participants continued to be invited until interviews were obtained from respondents located in different continents, with experiences and perspectives from different countries.

The design of the interview guide was built on the findings of the reference study that provided a snapshot of the current global HIA practice (Winkler et al. 2020). Informed by the objective of the study – to investigate opportunities that will further promote the HIA practice in the next couple of years – the questions specifically challenged the three main barriers identified by this research. A reflexive post-interview discussion with the first respondent allowed to check the appropriateness of the questions and to refine the interview technique before proceeding with the rest of the interviews.

The online interviews were conducted from January to March 2022. The interviews started with the recording of the audio consent and continued according to the following interview guide:

- (1) How does your work relate to HIA?
- (2) Where do you see concrete opportunities to enhance the technical HIA expertise and capacity?
- (3) Where do you see concrete opportunities to establish policies and legal frameworks requiring and defining HIA?
- (4) Where do you see concrete opportunities to raise awareness and understanding of HIA, especially by decision-makers and public health specialists?

Follow-up questions were asked individually, depending on the topics addressed by each respondent.

Data management and analysis

The data were analyzed following the seven-step framework method described by Gale et al. (2013), a type of thematic analysis that allows for a mix of deductive and inductive approaches:

- (1) The audio recordings were listened, re-listened, and transcribed.
- (2) To become familiar with the data collected, transcripts were gathered in a matrix with each column representing an interview question. Colour labels were applied to highlight key words and quotations of particular interest for the research study.
- (3) Through screening of the labels and a combination of deductive and inductive approaches, recurring topics were then mapped into a coding scheme.
- (4) The coding scheme was then applied to the transcribed interviews using the OpenCode 4.03 software (ICT Services and Systems Development and Department of Epidemiology and Global Health 2015). This consisted of importing the transcripts into the OpenCode 4.03 software and systematically assigning the defined codes, line by line. This allowed for refinement of the set of codes and validation of the final analytical framework regrouping the various codes into categories.
- (5) After verification of the transcripts and coding by an experienced practitioner in qualitative analysis [AP], the analytical framework was applied to the interviews for a comprehensive data storage prior to analysis.
- (6) Data were then systematically charted into a framework matrix using Microsoft Excel in order to summarize the information by code, with each row representing a code and each column an interview. Memos indicating useful and relevant quotes were added for cross reference. The matrix allowed for the identification of the most recurrent topics.
- (7) The data were compared across themes to consider the patterns and interrelations within and between categories, with the ultimate aim of identifying the range of opportunities that practitioners identified. Details of categories and themes are shown in Table 1. The findings provided the basis for the following research component, i.e. the quantitative study.

Quantitative study

The second part of the study consisted of the development and implementation of a questionnaire survey.

Questionnaire building

The questionnaire tool was developed following a building approach (Fetters et al. 2013) to translate the findings from the qualitative study into survey items. The integration procedure was based on the guidance offered by Creswell and Plano Clark (2017):

(1) The new insights gained from the preliminary qualitative part were examined in light of Vogel's opportunity development concept (Vogel 2017). Assuming that feasibility and desire to exploit opportunities were given, the second research question on the potential for opportunity exploitation was refined as follows:

- What are the opportunities to prioritize? (HIA practice needs);
- How to seize or produce the opportunity? (HIA practice resources and capabilities); and
- Who are the relevant players? (HIA practice market segments).

(2) Categories, codes and quotes from the qualitative study were screened against the specific research questions and grouped into short items.

(3) A joint display matrix was then created to advance the short items in terms of questions, with each row representing a short item, and the columns tracing the analytical assessment resulting in a question, where appropriate.

(4) After quality control by experienced researchers [MSW, AP], the newly developed questionnaire was pre-tested by two HIA practitioners to improve the questions, format and scales [AK, MSW].

Data collection

An online cross-sectional questionnaire survey was conducted based on the newly developed questionnaire.

The target population was the same as for the qualitative part: self-identified HIA practitioners. The inclusion criteria were HIA practitioners defined as having been involved in conducting HIA or implementing the outcomes of HIA. The exclusion criterion was not having been directly involved in the HIA of a policy, plan, program, project or strategy.

The online survey was conducted from November 2022 to January 2023 using SurveyMonkey®. The survey link was disseminated through e-mail (mailing list of the IAIA Health Section) and social media (i.e. IAIA Health Section channel and HIA blog post on LinkedIn®).

Data management and analysis

The collected data were exported to Microsoft Excel for subsequent data cleaning and analysis. A descriptive quantitative analysis was then conducted to examine and possibly group the results into meaningful categories. Since the questions were completed by a variable number of respondents, the nominator (number of responses per response category [x]), denominator (total number of responses received per question [y]) and percentage (% [x/y]) are provided for all results.

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Appendix 2. Qualitative and quantitative synthesis – Joint-display matrix exploring the key levers of current opportunities to promote and expand HIA practice

Qualitative items	Concept features	Questionnaire items	Quantitative items								
			Answers	Frequency	Percentage (%)						
Introduction											
		1. Are you an HIA practitioner? (single answer; n=28)	Yes No	25 3	89.3 10.7						
		2. How are you involved in HIA practice?(single answer; n=25)	HIA practitioner or consultant Official working on HIA at health authorities Private sector employee Teacher Official commissioner at development financing institutions	16 3 5 1 0	64.0 20.0 12.0 4.0 0.0						
		3. For which part of the world do you currently practice HIA? (single answer; n=25))	For low- and middle-income countries For high-income countries On a global scale	9 8 8	36.0 32.0 32.0						
Difficulty of respondents to move beyond barriers and adopt a positive approach.Tendency to view opportunities from their flip side, i. e. by challenges: what is not done rather than what is or can be done.	How-foster Adherence	4. In your opinion, what are the top two strengths of HIA practice?(two answers; n=50))	Evidence-based approach Stakeholder engagement Interdisciplinarity Identifies project-related health issues Creates well-being Produce tangible results Recommends project modifications Builds partnerships and consensus Highlights the project's benefits Promotes public health objectives in wider decision making	15 14 7 4 2 2 2 2 1 1	30.0 28.0 14.0 8.0 4.0 4.0 4.0 4.0 2.0 2.0						
			Theme I Possible opportunities to enhance technical HIA expertise and capacity								
			Large variety of groups of people targeted for capacity building: public health specialists (to learn about IA), practitioners (to learn about health), government regulators and financing institutions, private sector.								
				What Who- Relevance	5. In your experience, which of the following groups is currently most in need for HIA teaching (awareness raising) and/or training (technical capacity)? (single answer; n=25))	Government regulators EIA and ESHIA practitioners All (public health specialists, EIA and ESHIA practitioners, government regulators, financing institutions, NGOs) Public health specialists Financing institutions Private sector Local communities NGOs Do not know	9 5 4 3 2 1 1 0 0	36.0 20.0 16.0 12.0 8.0 4.0 4.0 0.0 0.0			
			Training and teaching on HIA identified by almost all respondents, comprehensive or specific programs like training the trainers, programs to enhance interdisciplinarity.	How- Applicability	6. Are you aware of any HIA teaching and/or training efforts?(single answer; n=25))	Yes No	21 4	84.0 16.0			
						How Who- Applicability Relevance	7. If yes, which ones do you know? Please indicate title, hosting institution and location.(open question; n=49))	Courses on demand or specific trainings Courses part of educational programs Local authority programs Bookable specific HIA courses Self-trainings Hosting institutions out of HIC Hosting institutions out of LMIC	25 15 4 3 2 42 7	51.0 30.6 8.2 6.1 4.1 85.7 14.3	
				Recognition of wide audience and potential of a broader stakeholder engagement.	Who- Adherence			8. Who (group of persons and/or organization) do you think is best positioned to deliver HIA courses or trainings adapted to the wide diversity of players?(multiple choice; n=55))	HIA community Universities Public health institutions Private consultants Financing institutions EIA institutions In collaboration Depends on target audience	18 17 14 2 1 1 1 1	32.7 30.9 25.5 3.6 1.8 1.8 1.8 1.8

(Continued)

(Continued).

Qualitative items	Concept features	Questionnaire items	Quantitative items							
Theme II Possible opportunities to establish policies and legal frameworks for HIA										
			Answers			Frequency	Percentage (%)			
Integrating specific human/population health considerations in laws and policy frameworks, especially in ESIA guidances, identified as a need.	Who- Applicability Adherence	9. Do you, personally or your institution, have any activities aimed at integrating human/population health considerations into legal or regulatory frameworks?(single answer; n=25)	Yes			18	72.0			
			No			7	28.0			
	How What- Relevance	10. If yes, which ones? (multiple choice; n=33)	Activities with governments			15	45.5			
			Activities with specific private sector			7	21.2			
			Activities with environmental community			6	18.2			
			Activities with financial institutions			3	9.1			
		Activities with international or multilateral institutions			1	3.0				
		Activities with local communities			1	3.0				
Use of activities where dialogue is already in place to institutionalise HIA.	Who How- Applicability Adherence	11. During the course of a project, did you actively sensitize decision-makers to establish policies or legal frameworks that require and define HIA?(single answer; n=25)	Yes			17	68.0			
			No			8	32.0			
	How What- Relevance	12. If yes, how? (multiple choice; n=31))	By providing guidelines to follow			12	38.7			
			By giving a workshop			11	35.5			
		By mentioning it verbally			7	22.6				
		By integrating health in IA even if not required			1	3.2				
Recognition that it is not enough to just have an HIA law, but that clear HIA definition and methodology are required.	What- Relevance	13. What aspects of the HIA guidance documents created by organizations such as IFC, IAIA, etc. do you think would need to be developed to further promote the practice? (rating scale, least to most useful)	Answers	Frequency (%)						
				Not	Slightly	Quite useful	Very	Extremely	N/A	
			weighted average	(w=1)	(w=2)	(w=3)	(w=4)	(w=5)		
			(n=23)	4.00	1 (4.3)	2 (8.7)	3 (13.0)	6 (26.1)	10 (43.5)	1 (4.3)
			(n=23)	3.86	0 (0.0)	4 (17.4)	5 (21.7)	3 (13.0)	10 (43.5)	1 (4.3)
			(n=22)	3.76	1 (4.5)	5 (22.7)	1 (4.5)	5 (22.7)	9 (40.9)	1 (4.5)
		Competency framework (who should be involved)								
		Quality criteria, including a minimum time assessment								
		List of key elements required for the complete execution of an HIA (what should be done)								
		List of health indicators relevant to HIA								
		Clear definition of HIA (when is it HIA, when not)								

(Continued)

(Continued).

Qualitative items	Concept features	Questionnaire items	Quantitative items						
Theme III Possible opportunities to deliver HIA awareness									
			Answers		Frequency	Percentage (%)			
Recognition that communication and dissemination of HIA evidence is critical and needs to be strengthened.	What- Relevance Adherence	14. In your experience, what type of communication tool is most successful in building awareness and understanding about HIA?(rating scale, least to most successful)	weighted average	Not (w=1)	Slightly (w=2)	Quite successful (w=3)	Very (w=4)	Extremely (w=5)	Don't know
		(n=23)	4.05	0 (0.0)	0 (0.0)	6 (26.1)	9 (39.1)	7 (30.4)	1 (4.3)
		Simplified case studies that can be used by different stakeholders, not necessarily for health specialists		0 (0.0)	1 (4.8)	6 (26.1)	8 (38.1)	4 (19.0)	2 (9.5)
		(n=21) Comprehensive case studies	3.79	0 (0.0)	1 (4.8)	6 (26.1)	8 (38.1)	4 (19.0)	2 (9.5)
		(n=23) Video	3.71	0 (0.0)	2 (8.7)	6 (26.1)	4 (17.4)	5 (21.7)	6 (26.1)
		(n=23) Policy briefs	3.15	1 (4.3)	6 (26.1)	5 (21.7)	5 (21.7)	3 (13.0)	3 (13.0)
A wide range of possible advocates has been identified to deliver HIA awareness, from the local communities (by informing or involving them) up to the most global institutions.	Who- Adherence Relevance	15. Which top two advocates do you think will have the most influence over the next two years to get this message of awareness and understanding about HIA across to relevant actors?(two answers; n=44)	Answers			Frequency	Percentage (%)		
		National decision-makers				10	22.7		
		World Health Organization				9	20.5		
		Development agencies				8	18.2		
		Professional associations				8	18.2		
		Pressure groups				4	9.1		
		Lending agencies				3	6.8		
		Local communities				1	2.3		
		Public health institutes				1	2.3		
Encouraging more interdisciplinary dialogues as well as exchanges within the HIA community are identified as main strategy to deliver HIA awareness.	How- Adherence	16. Could you recommend any existing platform that effectively/successfully encourages interdisciplinary exchanges on HIA (conferences, forums, webinars, social media...)?(single answer; n=21)	Yes, I can recommend some existing platform(s)			9	42.9		
		No, I cannot recommend any platform				6	28.6		
		Yes, but I would require additional platform(s)				4	19.0		
		No, I am not aware of any platform				2	9.5		
	What- Applicability	16.1. If yes, please indicate platform title(s) and leading institution(s) you recommend(open question; n=25)	IAIA, global			8	32.0		
		SOPHIA, global				3	12.0		
		HIA Network Asia Pacific				2	8.0		
		HIA Network LinkedIn, global				2	8.0		
		National Collaborating Centre for Healthy Public Policy, Canada				2	8.0		
		Creis, Spain				1	4.0		
		IEMA, UK global				1	4.0		
		EUPHA, Europe				1	4.0		
		Wales HIA Unit, UK				1	4.0		
		Pew Charitable Trusts, US				1	4.0		
		SHIAN, UK				1	4.0		
		ANLA, Columbia				1	4.0		
		IDEA, Columbia				1	4.0		

(Continued)

(Continued).

Qualitative items	Concept features	Questionnaire items	Quantitative items		
Recognition that windows of opportunity may depend on time-limited issues or trends, on the socio-economic context.	What-Relevance	17. In your opinion, what are the top two topics relevant to HIA (or health in other forms of IA) that are currently capturing the most attention?(two answers; n=44)	Disasters due to climate changes	16	36.4
			Equity and intersectionality issues	9	20.5
			Increasing communicable diseases	6	13.6
			Covid-19	5	11.4
			Well-being economies movement (launched by the OECD)	2	4.5
			Urbanization and healthcare service capacity	2	4.5
			Non-communicable diseases	1	2.3
			Cumulative impacts	1	2.3
			Risk	1	2.3
			Participation	1	2.3
Summary					
Themes are strongly interrelated.	What-Relevance Adherence	18. Based on your experience and on the information obtained in the previous three sections of this survey, which opportunities would you prioritize? Those related to theme I, II or III?(single answer; n=20)	Answers	Frequency	Percentage (%)
			Theme III: Opportunities to deliver HIA awareness	8	40.0
			Theme II: Opportunities to establish policies and legal frameworks	8	40.0
Difficulty of respondents to provide concrete opportunities, i.e. actions that can be implemented soon.	Who-Adherence	19. Are you interested or motivated to take any new specific action as a result of this survey?(single answer; n=21)	Yes	16	76.2
			No	5	23.8
	Who-Applicability	20. If yes, which ones?(multiple choice; n=44)	Developing a new HIA course	10	22.7
			Building a new platform for exchanges on HIA or health in other forms of IA	8	18.2
			Making sure to always publish the results of the projects I work in	7	15.9
			Teaching	6	13.6
			Seeking partnerships within a dedicated sector to integrate a health component into their framework	4	9.1
			Working with other communication channels that I am used to	4	9.1
			Setting up a working group to adjust some specific components of the existing HIA framework	3	6.8
			Making sure to specifically sensitize decision-makers during the course of a project	1	2.3
			Setting up a working group on indigenous peoples	1	2.3
			Issuing other forms of publication that I am used to	0	0.0

ANLA, Autoridad Nacional de Licencias Ambientales; Creis, Centro de Recursos de Evaluación de Impacto en Salud; EIA, Environmental Impact Assessment; ESHIA, Environmental Social and Health Impact Assessment; EUPHA, European Public Health Association; HIA, Health Impact Assessment; IA, Impact Assessment; IAIA, International Association for Impact Assessment; IDEA, Instituto De Estudios Ambientales; IEMA, Institute of Environmental Management and Assessment; IFC, International Finance Corporation; LMIC, Low- and Middle-Income Countries; NGO, Non-Governmental Organization; HIC, High-Income Countries; OECD, Organization for Economic Cooperation and Development; SHIAN, Scottish Health and Inequalities Impact Assessment Network; SOPHIA, Society of Practitioners of Health Impact Assessment.