

Health Impact Assessment: Need and Future Scope in India

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Introduction

Health impact assessment (HIA) involves “a combination of procedures, methods, and tools that systematically judges the potential, sometimes unintended, effects of a policy, plan, program, or project on the health of a population, including the distribution of those effects within the population, and identifies appropriate actions to manage those effects.”⁽¹⁾

This article has been written with the objectives to identify the principles and steps of conduction of HIA and also to emphasize the need and future scope of HIA in India.

Need of HIA in the current scenario

In today’s world of development, there are number of major projects being carried out that have a direct or indirect impact on health. Economic sectors such as agriculture, transport, and housing have a major impact on health. Agriculture being a major occupation in India, HIA can have an important role to play. Pesticides and fertilizers rampantly used to increase the crop yield may need to be used judiciously to protect farmers and consumers from their health hazards. Similarly, transport is a major factor in causing injuries, noise pollution, and air pollution. Rapid urbanization in the country, with the mushrooming of major construction projects, has major impact on health. Mining industry is yet another industry that affects the lives of thousands

of individuals directly or indirectly; health impact due to this industry needs to be assessed for safeguarding the interests of numerous individuals. Hence, urgent attention of policy makers stakeholders, and the community is required to reduce this impact.

The health-related impact could be present during various phases of conduction of these projects, which needs to be looked upon ideally before the beginning of these projects. In developing countries like ours, although EIA has already been made mandatory, it is often observed that health component associated with the project gets neglected. Thus, strategic environmental assessment that provides an important opportunity to protect and improve people’s health within a clearly defined context following the principles of HIA is recommended.

The purpose of HIA is to identify the most critical environment and social determinants of health that may be affected by a project and provide information in order to prioritize prevention and control strategies. It also addresses health issues that may influence the overall existing objectives. This may involve both direct and indirect effects. Direct effects on the health of a population can be observed, for example, through exposure to pollutants (including noise) that may be released in air, water and soil as a result of project activities, whereas indirect effects can be observed through a proposal’s influence on the determinants of the health; for example, the effects on the accessibility to basic amenities required in day-to-day life.

HIA should identify and assess both the potential positive and negative health impacts of a proposal. The aim of assessment is to enhance the potential positive effects while mitigating the negative effects to the extent possible.

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Evolution of HIA

HIA was initially developed by WHO in 1980s in response to the need to control vector-borne diseases resulting from water projects without using chemicals. In 1998, first conference on HIA was held in UK while in the same year WHO adopted Merseyside guidance on HIA.⁽²⁾ A number of countries in developed world carried out HIA during this period. In 2003,⁽³⁾ the WHO European Healthy Cities Network launched Phase IV of the network, in which 50 cities across Europe were committed to introduce and develop HIA. WHO established the guidelines and tools to carry out HIA.⁽⁴⁾ The WHO Regional Office for Europe promoted the use of HIA across Europe through various projects and activities with the support of World Bank. In India, however, there are very few examples where HIA has been carried out as a standalone process. Few of them, like vector-borne diseases in Sardar Sarovar Water Resources Development Project (Gujarat), Konkan Railway Project and Bargi Dam Project (Madhya Pradesh), have been carried out in the past.⁽⁵⁾ A cross-sectional survey that was conducted using a structured questionnaire to assess the specific components of HIA in Bangladesh, Bhutan, India, Indonesia, Maldives, Myanmar, Nepal, Sri Lanka, and Thailand revealed that five of the nine countries – namely India, Indonesia, Myanmar, Sri Lanka, and Thailand met some criteria to develop HIA.⁽⁶⁾ Thus, there is a need to build up good examples to carry out a successful HIA in future and to ensure adequate capacity building for carrying HIA.

Principles of HIA

HIA should follow some basic principles^(4,7) as listed below:

Democracy

Emphasizing the rights of the people to participate in a transparent process concerning decisions that affect their lives.

Equity

Equity means that HIA examines the impact within the population in terms of gender, age, ethnic background and socioeconomic status and identifies vulnerable groups.

Sustainable development

So that short-term and long-term, direct and indirect impacts are taken into consideration, and development effectiveness is not undermined by unintended ill health effects for its beneficiaries.

Ethical use of evidence

Emphasizing a rigorous use of quantitative and qualitative evidence, based on various scientific

disciplines to ensure as comprehensive an assessment as possible.

The critical aspect of HIA is determined by the time of conducting the assessment.⁽⁸⁾ Different types of HIA are given in Table 1.

HIA Types on the Basis of the Time of Conduction

Concurrent HIA

Concurrent HIA assesses the impact of health in parallel with implementation of a policy.

Prospective HIA

Aims to consider the effects on health that may be expected as a result of implementation.

Retrospective HIA

This type of HIA considers the consequences for health as a result of project already implemented.⁽⁷⁾

Steps of Conducting HIA

Step 1: Screening

It involves an initial assessment of the potential health impacts of a project, the number and range of people likely to be affected. An important decision that needs to be taken at the end of screening is whether HIA is appropriate or not. The people involved during this step are various decision makers, community leaders, and community representatives. The end point of screening should include brief summary of the project along with its potential impacts on health to be followed by recommendations discussed during the screening process.

Step 2: Scoping

During this step, the main aim is to set the boundaries and terms of reference for the HIA. These include geographical extent along with local communities to be considered. The important decision would be regarding the potential impact that would be assessed

Table 1: Types of HIA

Desk based	Rapid	Comprehensive
2-6 weeks for one person full time	6-12 weeks for one person full time	6-12 months for one person full time
Provides broad overview of health impact	Provides more detailed overview	Provides comprehensive assessment of impacts
Analysis of existing and accessible data	Involves collecting and analyzing existing data	Involves collecting and analyzing existing data from multiple sources
Used where time and resources are limited	Used where time and resources are limited	Requires significant time and resources

and regarding stakeholders that would be needed for consultation during the process. Methodology and timelines for various activities that need to be carried out will be decided during this step. The scoping step normally involves senior project staff, health or HIA specialists (whether consultants or in-house), and key stakeholders such as representatives of local communities, local government, and health/public health services.

Step 3: Community profiling and baseline information

The next step is carrying out a baseline survey and establishing a community outline with a particular focus on the existing trends in health problems and basic services available for the people of the community. The other information that needs to be collected is in terms of knowledge, practices, and attitudes of community along with various social problems prevalent. The information is either collected by fieldwork, local surveys, or with the help of focus groups and discussions with key informants such as community health and development workers and local health/public health officials. This step is essential as profiles of affected communities and populations generate a clearer picture concerning the community or population likely to be affected. It also helps in identification of potentially vulnerable groups likely to be more affected by potential health impacts than others.

Step 4: Stakeholder and community involvement

Stakeholders are those individuals and groups that are affected by, or express an interest in the project. Stakeholder and community involvement is concerned with developing a two-way dialogue and information/knowledge exchange between the HIA specialist, project team, key stakeholders, and local communities.

Step 5: Gathering of evidence

This step involves gathering of evidence required to assess the potential health impacts of a proposed project. This can be established by means of systematic online research through open access journal articles, review reports, HIA of similar projects elsewhere, local and national government reports.

Step 6: Analysis of health impact

It involves systematic determination of the extent and timing of potential impacts that are likely to occur during the project. The impact needs to be considered at all levels and at different phases of the project by assessing the range, nature, and magnitude of impacts. Assessment of the impact is done with the help of health impact analysis table or matrix. Analysis of health impact involves expert judgement based on a consideration of the evidence gathered and its applicability to the local context and the specific project. Assessments are, however, mostly based on a subjective judgement.

Step 7: Development of mitigation and enhancement measures

After assessment, effort should be made toward initial recommendations to mitigate negative and maximize positive impacts of the project. It should be done in consultation with affected communities, nongovernmental organizations, local government, and local health and social care agencies. Hierarchy of mitigation measures that can be followed to reduce the negative impact includes avoiding the factor in the design of the project in a manner to rule out negative impact. Next measure that can be utilized is to reduce the effect both at the project as well as at the community level. If negative impact cannot be corrected by the above methods, then it should be compensated by an appropriate positive measure.⁽⁷⁾ In the similar manner, positive effects need to be enhanced for affected community as a whole. Affirmative action should be taken to ensure that the disadvantaged get the maximum benefit from the project. Another way can be as simple as addition to the basic design to promote health and imparting health education among the community to reap maximum benefits.^(7,8)

Step 8: Reporting

There is no set format for the structure and content of an HIA report.

- The report should include the type of HIA done, giving details of its methodology. Findings of each step and finally including the recommendations along with the measures suggested to reduce/enhance the negative/positive impact, respectively.
- Draft report should be subject to consultation with key stakeholders and key informants, and the feedback incorporated into the final report in a transparent way.
- Written report (a public document) should be provided to decision makers and local communities.

Step 9: Health management plan and follow-up

The health management plan should be based on the impacts identified and the priority attributed by the affected communities. Follow-up activities include monitoring as well as evaluation of both actual and predicted impacts once the project is implemented. Monitoring is important, as it enables assessment of the predictive effectiveness of the HIA. In addition, ongoing long-term monitoring may uncover other impacts that were not anticipated in the HIA. It becomes especially critical in the absence of evaluation of project.

It needs to be emphasized here that though the steps are shown linearly but in reality they are nonlinear and iterative – some elements generally occur throughout the process involved [Figure 1].^(7,8)

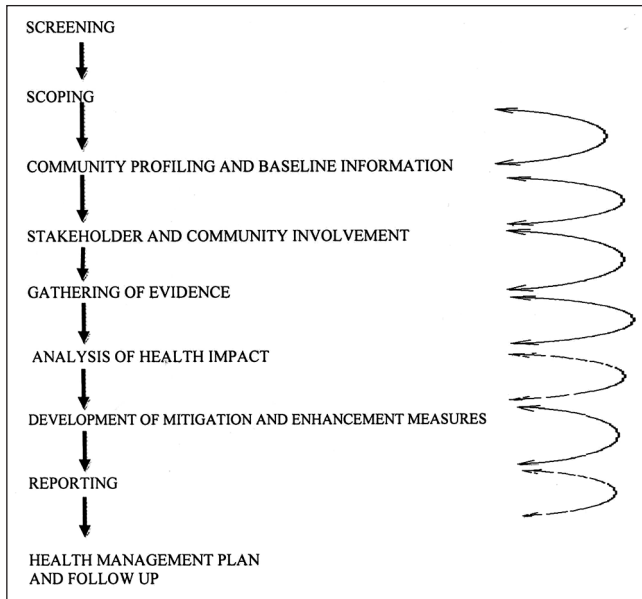


Figure 1: Steps of conduction of HIA

Evaluation of HIA

Evaluation of HIA involves process evaluation and impact evaluation

Process evaluation

Process evaluation^(8,9) evaluates the manner in which assessment was carried out. It evaluates HIA against the terms of reference set during the step of scoping. Various indicators are as follows:

- Identifying key stakeholders and involving them at key stages throughout the process.
- Setting up a reference or steering group to carry out/oversee the work.
- Time spent by individuals on specific stages of the process.
- Minutes of all meetings circulated to stakeholders.
- Evidence of identification of best available evidence, and how it was collated.
- Involvement of community in the process; who, how often, and community perceptions of being involved.
- Staff available for the HIA; experience, training required, turnover.
- Assessment of timescales being met; if not, why not?
- Recommendations delivered to decision makers in appropriate format at the appropriate time.

Impact evaluation

Impact evaluation evaluates the changes that took place as a result of HIA.

Impact should be evaluated at 12-18 months after its completion.

Various impact indicators are as follows:^(8,9)

- Evidence of effective partnership working.
- Community development; for example, local representatives developed, community organizations supported.
- Empowerment of local people, skills, and confidence developed.
- Health issues more prominent on local agenda.
- Improved knowledge of the causes of ill health (social model of health) by nonhealth participants.
- Decision makers considered recommendations from the HIA.
- Recommendations (which ones) adopted by decision makers and changes made in the proposal.
- Changes in proposal were implemented (may require longer-term monitoring through follow-up).

After learning about the steps regarding conduction of HIA, it is important to know about the various barriers to the process of HIA that may occur.

Barrier to HIA is the resistance that occurs during the process of HIA that may be attributed to a number of factors. Important ones along with possible solutions are being listed in the table below [Table 2].

Examples of HIA Carried Globally

In the Republic of Slovenia, an HIA with proper methodology was carried out in 2001.⁽¹⁰⁾ HIA was conducted in response to proposed agricultural and food policy. Key determinants of health that were studied included changes in income, employment, housing, and issues of social capital in rural areas along with changes in the rural landscape and cultural impacts. Environmental issues such as farm intensification leading to soil and water pollution and many others were also studied. This was the first time HIA was carried out in agricultural field. During the process, the importance of intersectoral coordination was learnt. The importance of timing to conduct assessment was also realized; as too early assessment or too late assessment

Table 2: Barriers in health impact assessment and its solutions

Barrier	Solutions
No funding	Funding sources to be used creatively Need successful case study
Not enough evidence to demonstrate health impact	Disparate, single-issue focused evidence exists in public health literature, especially built environment-related health. Role of HIA is to pull this together
Considered as time consuming and costly by policy makers	In the long run, if proper executed HIA is cost effective
Inadequate and inaccurate reporting of HIA	Independent agencies for proper evaluation

both can be detrimental to the overall impact including the health impact.

A 2007 study identified 27 HIAs conducted in the United States between 1999 and 2007⁽¹¹⁾ on topics ranging from land use and transportation projects to living wage legislation. Since then, the use of HIAs has increased dramatically, with a total of 119 HIAs (79 completed and 40 in-progress) in the United States as of 2010, according to the information collected by the Centers for Disease Control and Prevention, Johns Hopkins University and the Health Impact Project, a joint effort of the Robert Wood Johnson Foundation, and the Pew Charitable Trust. As a result of these HIAs various important decisions were taken, which otherwise could have caused serious health issues; for example The Northeast National Petroleum Reserve Oil and Gas Leasing Program carried out in Alaska led to the withdrawal of leasing some of the land which would have adversely affected the health of native population. This was followed by institution of new pollution monitoring and controls. Similar progress was observed in European region as well. Another important aspect that occurred as a result of HIA was increased community participation due to greater involvement of local people.⁽¹¹⁾

On the other hand, scenario is quite different in developing country like ours where very few HIAs have been carried out as standalone projects.

Effect of Integrating HIA with Other Impact Assessments

HIA may be integrated with EIA and social impact assessment.^(7,12) There are both benefits as well as pitfalls of integration. While on one hand we are able to achieve a more holistic and comprehensive impact assessment which is not only cost effective but also is less time consuming as compared with the individual assessments. However, during the process, domination of the EIA or social impact assessment at the expense of the HIA has been commonly observed. Poor communication, information sharing, and partnership working between the various impact assessment teams leading to a poorly integrated report, set of recommendations and final environmental social and health management plan.

Future Actions That Need to be Taken in India

Many of the developmental projects carried out in India are beyond the ambit of health ministry. So, a strong intersectoral coordination between other ministries such as agriculture, transport, and other nonhealth

ministries is essential. For efficient conduction of HIA in the country, a strong political commitment in the form of country-level public policy, which will play a crucial role, is required for proper allocation of resources in terms of manpower, time, and finance. In addition, a well-planned strategy is required for introducing and integrating HIA into basic management system. The above actions can be accomplished only if clear understanding of HIA is being created by means of appropriate capacity building and development of adequate skills to undertake HIA. It may be well emphasized that HIA should be included as a part of postgraduate curriculum in community medicine in all the medical colleges. Expertise of these public health specialists can be used by the various stakeholders in the projects and add to the capacity building for conducting HIA. In addition, strict legislative action needs to be implemented by the Ministry of Health and Family Welfare, Government of India (GOI) to make HIA a mandatory procedure in future for all upcoming major projects along similar lines as that of EIA, which has been made mandatory by GOI.

In the end, it may be concluded that there is an urgent need to set up good examples of conducting HIA for various projects related to different issues present in the environment, as HIA not only helps in providing better quality services catering to the needs of the people but also strengthens the principle of democracy by allowing greater involvement of people who are likely to be affected the most by the project.

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