

Bibliometric study regarding links between health determinants and sustainable development

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Abstract

There are several models of health determinants that have a major impact in determining health policies at local, national and global. Sustainable development is more urgent attention of policy makers because of climate change. This paper explores the links between the health determinants and sustainable development. Were analyzed 61 articles (or summaries thereof), resulting in PubMed database search. Even if stronger link between health inequalities and sustainable development, the findings indicate several linkages and ways to influence the determinants of health in order to ensure sustainable development.

Key words

sustainable development, health determinant, health policy, food security

INTRODUCTION

In 1997 D.Ruwaard defined health determinant as "factor or any condition that has an effect on health or in quantitative terms has a measurable effect on health" (cited by Marcu A and all., 2002, p.5).

Current literature describes several models of the determinants of health. Should not be forgotten that the evolution patterns of health determinants is dependent on advance knowledge of disease etiology and pathophysiology.

Prior to 1970 it was generally accepted that health was determined by the amount of medical services for the treatment of diseases, known medical model of health determinants. Lalonde Report, published in 1974 by the Canadian Ministry of Health, found that morbidity and mortality data that approximately 50% of Canadian deaths could have been avoided and are related to behaviors such as smoking, alcohol consumption, diet, sedentary and accidents. The epidemiological determinants of health emerged in the 70s, called Dever model includes four factors: human biology, environmental factors, behavior and health system (Enăchescu, 1998, p.8)

The model of determinants of health (Dahlgren & Whitehead, 1991), is used for setting policies in the European Union because it believes that decisions at EU level can and should have a significant impact on these determinants. For example, decisions that are consistent with the internal market can support or

undermine national public health objectives, while funding from EU funds and programs can be implemented in a number of areas to strengthen national efforts to reduce health inequities.

In 2005, WHO established a Commission for the Social Determinants of Health in order to achieve a joint effort of scientists and practitioners to provide evidence of policies that can improve health by focusing on the social conditions in which people live and work. Results of this committee include developing conceptual framework for action on the determinants of health - WHO CSDH, 2008. The low level of health can not be explained solely by pathogens and genes, but most diseases are rooted in social factors, ie how we grow, we work and live. While they are related to individual behaviors, such as smoking or alcohol consumption are also included social and economic conditions in which people live and major influencing their health. These are the so-called social determinants of health (SDH), which are defined as structural determinants and conditions of daily life responsible for a large part of health inequities between and within countries.

Social determinants include the distribution of resources, income, goods and services and the circumstances of their lives, including their access to quality care at an affordable price, schools and education, conditions of work and leisure, housing and environmental condition. The more these factors unevenly distributed within or between different population groups, the lower is the overall level of health and wellbeing and health inequalities are greatest (. Rohregger B, 2011).

“Development is defined sustainable when it meets the needs of the present without compromising the ability of future generations to meet their own needs” (Frazzoli C, Petrini C, Mantovani A., 2009). Sustainable development involves the economy, living space, energy supply, urban infrastructure, food production systems, environmental conservation. These are goods that we value. But their value because they are the basis for the survival and health of populations (McMichael AJ, Butler CD., 2006).

The practice of public health must take into account beyond health and disease models, including physical and social determinants of health and to integrate sustainable development challenges (Labonté R., 1993). Correlations between public health and sustainable development are in “six interacting environmental spheres: a viable natural environment, a sustainable economic environment, a sufficient economy, an equitable social environment, a convivial community, and a livable built environment. (Labonté R., 1993).

MATERIAL AND METHODS

The paper aim is to identify links between determinants of health and sustainable development, based on articles published and indexed in the database PubMed.com (<http://www.ncbi.nlm.nih.gov/pubmed>). It was applied to search for articles according to syntax: Search: health AND determinants AND sustainable AND development. The search result has been finding a number of 72 articles. Data about the articles found were included in a database in Excel, for each articles were included the following records: journal, article title, authors, scale study (international, national, sub) continent (continent) referred to the study, studied area (were established following areas: policy and health systems, infectious diseases, non-communicable diseases, nutrition, environmental health, women and child health, accidents / disasters, oral health, if the article has a summary, if available (free) full article in English, if it contains links between areas studied (determinants of health and sustainability). Of the 72 articles in the search results a total of 61 were summary, based on which we could establish the extent of the study, and the study continents. Thus, 45 articles related to international studies (comprising several countries), 6 studies were national and 10 articles related sub-issues (municipalities or counties). Specifying continent where the study was performed was found in 44 articles, the remaining articles (17) were related to health policy issues applicable on all continents. The most common continent of Europe has been reviewed studies (20 studies), followed by Africa (9) Asia (7), North America (5) South America (4) Australia and Oceania (2).

For each article I have established one or more areas studied that have identified in the summary and, if there is, article. Field studied in each article shown in the following table (Table 1).

Have been identified links between health determinants and sustainable development in the case of 20 articles / abstracts analyzed, in the remaining 41 were not identified links. Error factors resulting from the search were related to various terms such as "sustainable development of control programs", "sustainable retinopathy screening", "sustainable vector control and disease", "development of sustainable healthcare Policies" etc.

Table 1

The areas for analyzed articles

Areas	Policies and health systems	Communicable diseases	Non-Communicable diseases	Food	Environmental health	health of women and children	Injuries/Disasters	Oral Health
Number of articles	41	7	10	15	22	4	3	2

RESULTS AND DISCUSSIONS

Articles analysis reveals a link between inequalities in health and sustainable development, sustainable development would reduce health inequities. In the context of climate change, it is important to simultaneously practical approach inequities in health and sustainable development (Bowen KJ and all, 2012). Moreover, adaptation to climate change requires sustained action to reduce the health inequities through interventions on social determinants of health (Friel S and all, 2011).

Multisectoral approach and more disease prevention can result in immediate benefit to the determinants of health and sustainable development, in addition growing levels of schooling and productivity and reducing inequities (Nakagawa J et all, 2013). Global action for sustainable development, including poverty eradication to determine - one of the determinants of health - was underlined by United Nations Conference on Sustainable Development, Rio +20 (Buss PM and all, 2012). Health, quality of life and sustainable development are closely linked, it is important to involve professionals in urban planning that takes into account health determinants “the physical and social environment in which people live and the nature of their lifestyles” (Capolongo S and all, 2011).

It is known that changing the type of physical activity, nutrition and consumption of alcohol and tobacco increases the burden of non-communicable diseases in low and medium income countries. It is important to assure adequate disaster response and disaster prevention to reduce the risk in the context of vulnerability, climate change and sustainable development (Iain B., 2010).

Food safety contributes for health of population and sustainable development. Action is needed in the food chain (to prevent chemical and microbiological contamination of food by HACCP implementation, development of new toxicological measurements etc.) As a precondition for avoiding future social costs, food is a consumer product with greater impact in the population

(Frazzoli C, Petrini C, Mantovani A., 2009). In the food safety, an important component is the elimination of hunger, especially “hidden hunger” – chronic micronutrient deficiency, in the most sustainable manner for the environment. Attention should be paid to factors that contribute to long-term food insecurity and hunger hidden (Burchi F, Fanzo J, E. Frison, 2011).

Health care, especially medical facilities are large consumers of energy (heat, electricity) in providing medical services to the population. Performance and energy efficiency of medical units should be weighed against ethical standards as a precondition to decrease carbon emissions in the health system (Verderber S, Fauerbach J, Walter B., 2008).

Climate change and globalization have led to the spread of infectious diseases: “tuberculosis, malaria, cholera and dengue fever, have proven unexpectedly problematic, because of increased antimicrobial resistance, new ecological niches, weak public health services and activation of infectious agents (e.g. tuberculosis) in people whose immune system is weakened by AIDS” (McMichael AJ, Butler CD., 2006), decrease in life expectancy in poorer regions of the world, increasing health inequities is therefore considered the current validity of the principles of the Ottawa Charter for Health Promotion. “Linkages between the health sector and civil society, including those struggling to promote development, human rights, human security and environmental protection, should be strengthened.” (McMichael AJ, Butler CD., 2006, p.22).

Medical education should strongly consider both health determinants and sustainable development, and the terms like "Primary Prevention", "Health Promotion", "Health Protection", "Health Determinants" should be re-defined and the new ones such as "Quality of Life" and "Sustainable Future" (Bencko V, Hnilicová H, Klein O, 2005).

Very helpful in influencing both health determinants and sustainable development policies at the local level is the health impact assessment (HIA). A study in London on the development of urban transport strategy shows that rapid HIA recommendations were taken into account in the planning process. The authors conclude that the application of HIA led to adaptation policies and improve health issues “HIA is an effective method both for bringing about significant change in policy proposals and in increasing policy makers' understanding of determinants of health and hence in changing attitudes of policy makers” (Mindell J, Sheridan L, Joffe M, Samson-Barry H, Atkinson S., 2004). The historical development of the application of HIA and environmental assessments led to the development of a public health model that takes into

account the determinants of health, including toxic risks, infectious and social impact of projects. “Sustainable development with its social objectives of empowerment, participation, equity, poverty alleviation, social cohesion, population stability and institutional development is an appropriate framework for conducting health impact assessments.” (Banken R., 1999).

Communities with a high incidence of infectious diseases “under pressure from a barrage of endemic diseases” are those where quality of life achieved with difficulty. Strategies for prevention and control of infectious diseases must consider “knowledge base, beliefs, perceptions and practices of the population by incorporating active community participation in preventive and intervention practices” (Wijeyaratne PM, Arsenault LK, Murphy CJ., 1994).

Since 1990, the world has developed the current "healthy cities" or "healthy communities" as a way to integrate and focus health policy public health center (Labonté R., 1993).

CONCLUSIONS

There is a strong and direct link between health inequities and sustainable development. Reducing health inequities through action multi ensure sustainable development in the communities.

Disaster prevention and appropriate response to disasters reduce health risks. Given the increasing occurrence of disasters due to climate change , it is necessary training of medical personnel and the population for this type of situation

Food security contributes to health through proper nutritional support , and through food chain contamination is prevented adequate food and is considered sustainable

Green energy used by health care facilities can contribute to sustainable development and consequently decrease the carbon footprint of social activities. Links and joint action between the health system and civil society organizations influence major social determinants of health.

Medical education must adapt and improve their content according to the identified interdependencies between social determinants of health and health.

Health impact assessment and healthy cities & healthy communities are practical interventions that influence policy decisions applicable at local level (below national) in improvement health determinants and beyond in influence on sustainable development. Keypoints of conclusions are presented in Box 1.

Box 1 – Links between health determinants and sustainable development: keypoints

- there is a strong link between health inequities and sustainable development,
- multi-sectorial interventions,
- disasters: prevention and response,
- food security,
- green energy for health care units,
- must be developed shared actions between health sector and civil society organizations,
- health education,
- health impact assessment,
- healthy cities & healthy communities.

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