

# Educating Public Health Professionals for an Unknown Future: Insights from a New Bachelor Programme Linking Health Promotion and Sustainable Development

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## **Abstract**

*This paper aims to provide a description of the new bachelor programme “Health Promotion through Sustainable Development”, which started in autumn 2016 at the University of Gävle, Faculty of Health and Working Life. The programme was built integrating public health and biology through a thread of health promotion and sustainable development across the three years of study. In the era of sustainable development and more complex health threats, future public health professionals need to be equipped with the right knowledge and skills that will enable them to promote a sustainable population health.*

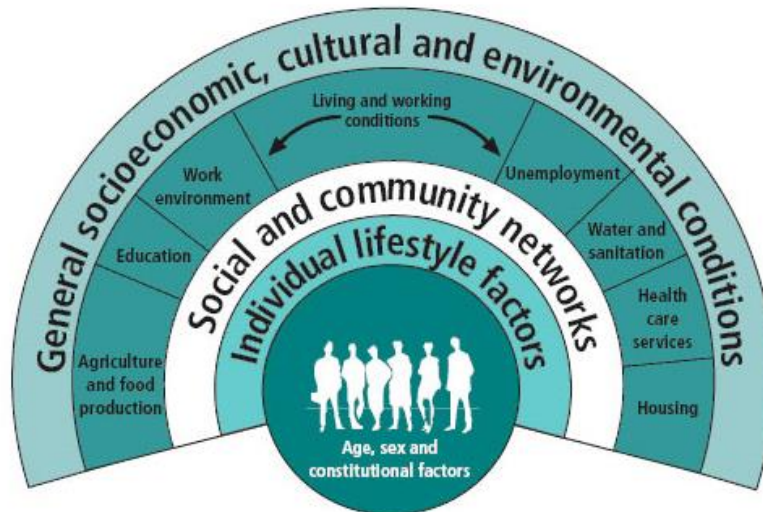
## **Keywords**

*public health, health promotion, biology, sustainable development, University of Gävle*

## **1. Background**

From its beginnings, public health as a discipline was focused on preventing epidemics as well as the spread of diseases (especially infectious diseases). Its priorities were centred in the biologic mechanisms of disease to improve the health of the population (Affi & Breslow, 1994; Hamlin & Sheards, 1998). However, after the publication of the Black Report in the United Kingdom in the 1980s (Gray, 1982), the study of health determinants gained pace with an argument that factors (upstream factors, e.g., social, economic and environmental) other than just biological ones contributed to patterns of disease globally, even in developed countries (Gray, 1982). Contributing to that debate, Dahlgren

and Whitehead (1991) proposed a model for determinants of health known as the Social Model of Health (Figure 1).



**Figure 1. Determinants of Health (Dahlgren & Whitehead, 1991)**

According to Dahlgren and Whitehead, different layers of determinants influence health within the so-called social ecological theory for health (1991). They argued that there was a relationship between the individuals, their environment and disease, with individuals at the centre (with a set of fixed genes) surrounded by other influences on health that could be modified (modifiable determinants). In the model, the first layer included personal behaviour and ways of living that could promote or damage health. The second layer entailed social and community influences, which could provide mutual support for members of the community in unfavourable conditions. A third and final layer included structural factors such as housing, working conditions, access to services and provision of essential facilities (Dahlgren & Whitehead, 1991).

Linked to health determinants, the United Nations launched the Millennium Development Goals in 2000 with the aim for them to be achieved in 2015 by all signature countries (United Nations, 2015b). These goals served as an agenda for all countries around the world to improve population health through actions that combined social, environmental and economic policies. As the millennium development goals unfolded, the world community was already debating a much greater issue regarding sustainable development. Under the mandate of the UN, in 1987 the Brundtland Commission (WCED, 1987) introduced the concept of sustainable development, emphasising the relationship between development, and the environment. The report, entitled *Our Common Future*, argued that for development to be sustainable, environmental, social and economic sustainability aspects needed to be included and health was mentioned as a part of the social sustainability pillar. Furthermore, the report

noted that for development to be sustainable it needed to meet essential human needs including sanitation and health care (WCED, 1987).

In recent years, scholars within the discipline of public health have come to recognise that public health and sustainable development are intrinsically connected (Adshead et al., 2006; Sveke et al., 2013). Further, there is agreement that achieving sustainable development will depend on a healthy population, thus public health needs to be considered as a significant outcome of sustainable development as well as a precondition to it (Sveke et al., 2013). Furthermore, arguments are made that both sustainable development and public health are rooted in a long-term vision that advocates inter-sectorial collaboration as well as integration of environmental, social and economic factors into decision and policy making (Public health agency of Canada, 2006).

Departing from the framework developed by Dahlgren and Whitehead (1991), as well as eco-system theories and the principle of sustainable development, Barton and Grant developed a health map for the local human habitat (2006). The health map provided a dynamic tool with focus on collaboration across practitioners in professions such as city planners, public health workers, service providers, ecologists, urban designers and transportation, air quality and community workers (Barton & Grant, 2006). The different facets of a human settlement are reflected in a series of spheres, which move through social, economic and environmental variables. The settlement is set within its bioregion and the global ecosystem on which it ultimately depends. Broader cultural, economic and political forces, which impact on well-being, are represented. Thus, all the elements of the original Dahlgren and Whitehead diagram (1991) of the determinants of health are included, spread out to reflect the ecosystem of the local human habitat development as well economic development.

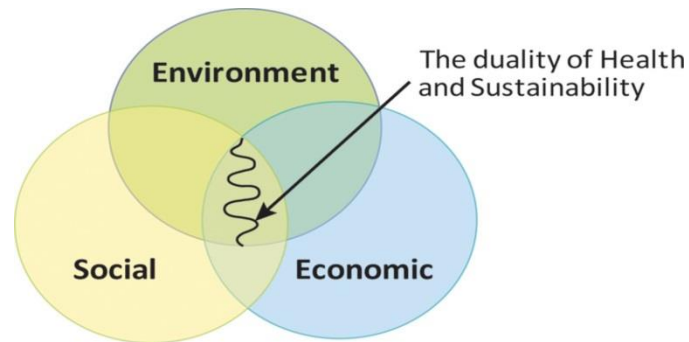
The creators of the health map also suggested that the urban development process, particularly the design and planning of settlements, resided in one sphere—the built environment. Therefore, planners could see their place in determining health (in direct terms) as they had the ability to affect the quality of that environment (e.g., housing) (Barton et al., 1995; Barton & Grant, 2006). Furthermore, the health map can be used to analyse the knock-on effects, which are often much more significant in terms of health, as well as to help researchers in other areas, but specifically in public health, to distinguish the above-mentioned processes and their contribution to sustainability and health impact assessment (Figure 2).



**Figure 2. The Health Map (Barton & Grant, 2006)**

Within the public health discipline there is also the growing realisation that health promotion is the appropriate tool for improvement of health through sustainable development (Pedersen et al., 2015). For instance, some scholars argue that health promotion and sustainable development interact in that health shapes sustainability and vice versa—sustainability shapes health—and to avoid unintended, negative effects, and strategies directed towards sustainable development must be correlated with strategies for health promotion (Kjærgård et al., 2014; Pedersen et al., 2015). Grounded in the Ottawa Charter (WHO, 1986), health promotion sees health as an expanded paradigm of not just absence of disease. Thus, health promotion implies a shift from an understanding of health as absence of disease (the bio-medical approach) to a socio-ecological understanding of health that focuses on strength, resilience and assets for health (Kjærgård et al., 2014; Pedersen et al., 2015).

In recent years, a model of duality has been proposed to understand the intrinsic relationship between health promotion and sustainable development. The duality entails that health both creates conditions and is conditioned by sustainability understood as economic, social and environmental sustainability (Kjærgård et al., 2014; Pedersen et al., 2015) whilst, on the other hand, sustainability creates and is conditioned by human health. For that, three groups of factors are considered in the duality between health promotion and sustainable development: (a) habitable environments and social systems based on participatory processes that enable or constrain both health promotion and sustainable development; (b) resilient ecosystems and viable economic systems that enable or constrain both sustainable growth and health promotion; and (c) supportive socio-economic systems that enable or constrain both health promotion and sustainable development (Pedersen et al., 2015) (Figure 3).



**Figure 3. The Duality of Health and Sustainability Model (Kjærgård et al., 2014)**

Furthermore, the duality model is perceived as an approach that enables the understanding of health problems as a common social responsibility that goes beyond one individual, which is the underlying thought behind the recent Sustainable Development Goals (SDGs) defined by the United Nations in their 2030 Agenda (UN, 2015a).

In Sweden, but also in Scandinavia generally, no other educational public health programme has attempted to link public health/health promotion and sustainable development throughout the three years of a bachelor programme. To our knowledge, in Sweden there are only single courses addressing the relation between public health/health promotion and sustainable development, embedded within a variety of bachelor programmes in public health. Therefore, the objective of the present paper is to describe the new bachelor programme “Health Promotion through Sustainable Development” which started in the autumn of 2016 at the University of Gävle, Faculty of Health and Working Life.

## **2. The programme “Health Promotion through Sustainable Development”**

The new bachelor programme integrating health promotion and sustainable development had three main points of departure. Firstly, the Brundtland Commission’s recommendation (WCED, 1987) that “Sustainable development that meets the needs of the present generations without compromising the ability of future generations to meet their own needs”; secondly, the “Health Map” developed by Barton and Grant (2006) described above; and thirdly, the duality between health promotion and sustainability described previously (Kjærgård et al., 2014; Pedersen et al., 2015). The programme is built integrating public health and biology through the thread “health promotion and sustainable development” across the three years of study. The full description of the programme layout (across academic terms and years 1 to 3) is presented in Table 1.

**Table 1. Layout of the New Bachelor Programme “Health Promotion through Sustainable Development”, University of Gävle, 2016**

Year 1		Year 2		Year 3	
First Term	Second Term	Third Term	Fourth Term	Fifth Term	Sixth Term
Public Health: an introduction 15 credits (Public Health)	Evolution of life 7.5 credits (Biology)  Public health and sustainability (Public Health)	Environment and risks for public health I 7.5 credits (Biology)	Research methods in public health I 15 credits (Public health)	Strategies and methods in public health and sustainable development 30 credits (Public Health)	Research methods in public health II and thesis writing 30 credits (Public Health)
From cell to human being from a health perspective 15 credits (Biology)	15 credits  Ecology and public health 7.5 credits (Biology)	Health-oriented behaviour and sustainable development 15 credits (Public Health)	Nature and public health 15 credits (Biology)		
		Environment and risks for public health II 7.5 credits (Biology)			

The programme comprises 180 credits, European Credit Transfer and Accumulation System (ECTS), with 120 ECTS of public health-related subjects and 60 ECTS of biology topics (see Table 1). The links between health promotion and sustainable development were considered to be the most appropriate thread to integrate the two disciplines. The rationale for this choice was the belief that the concepts and knowledge carried through this thread could be introduced in courses for year one and then consecutively deepened within the second and third years, culminating with a thesis essay in the third and final year. The programme entails inter and intra-disciplinary integration, which is important to achieve given the nature of the two disciplines, natural science (biology) and applied science (public health). Inter-disciplinary integration of almost eighty per cent was achieved (through course contents addressing the interplay between biological mechanisms influencing population health, as well as the reciprocal relationships of genetic, environmental and social factors) and the intra-disciplinary alignment (within the disciplines themselves) was fully achieved (by ensuring that courses kept core areas of the original disciplines).

The intra-disciplinary alignment is of importance to allow graduates of the new programme an opportunity to continue their graduate studies at master's level in the public health sciences and biology disciplines. Although difficult, the goal of inter- and intra-disciplinary alignment was achieved thoroughly by maintaining the most important aspects of the disciplines within the agreed unit courses (see Table 1), with public health as the main discipline (for the bachelor programme exit) and biology as a supporting discipline, meaning that the programme would provide a direct passage to study for a master's degree in public health. Students who desire to take a master's degree in biology will need to take complementary courses before enrolling in a graduate programme in biology.

### **3. Why a Bachelor's Degree in Public Health with an Interdisciplinary Approach to Health Promotion and Sustainable Development?**

The programme aims to teach future students about the connections between health promotion (public health) and sustainable development in a way that enables them to relate their knowledge to the real world (working as advisers and strategists for various types of authorities as well as companies in the public and private sectors). The above-mentioned connections are achieved through the programme's specific learning outcomes spread across the interdisciplinary curriculum, where students are required to learn and, upon completing the programme, be able to: (a) demonstrate the skills and ability to strategically work to promote health and sustainable living within different arenas; (b) demonstrate the skills and ability to strategically work to integrate health promotion with sustainable living within different arenas; and c) investigate, analyse, evaluate and implement health promotion strategies and methods.

Many scholars see the interdisciplinary curriculum as an end result (Relan et al., 1991). For instance, Relan and Kimpston (1991) define curriculum integration as integrated knowledge, a means of conveying knowledge and higher-order thinking skills needed by citizens to understand a complex, interrelated world. Furthermore, curriculum integration is described as the way of knowing and understanding the world that moves beyond traditional, discipline-specific knowledge and skills (Relan et al., 1991). Moreover, other scholars view the interdisciplinary curriculum as a concept that promotes the thinking process and examination of complex issues that connect classroom work with students' daily lives (Hargreaves et al., 2002). In our programme we recognise that future graduates might collaborate with other professionals to achieve healthy, sustainable and resilient cities. Therefore the new programme is designed to address such issues that may affect city dwellers both currently and in the future. Healthy and sustainable cities are expected to promote health through prevention of current and emerging diseases and health-related states (e.g., allergies, mental health problems, drug-resistant pathogens and issues related to exposure to growing climate risks) (Siri, 2016).

Drake and colleagues bring to light the importance of developing interdisciplinary thinking skills as an end in itself, and stress that students need to learn the skill of making connections between subject areas so that they can solve real life problems (Drake et al., 2000). In the new programme,

interdisciplinary knowledge and skills will be provided by connecting aspects of environmental, social and economic sustainability with determinants of health. This interconnection is, as already mentioned, the duality between health promotion and sustainable development.

The new educational programme introduces a new way of thinking not only about public health education but also about research practice, where health is promoted through sustainable development as an attempt to grasp the complexity of our world through holistic solutions. Furthermore, by establishing a bridge between one of the most advanced fields of science and technology, namely biology, and the field of public health, we can create new knowledge and business opportunities and also contribute with professionals that will promote a more sustainable society.

We foresee an emerging market for new public health professionals who will be able to work as managers, planners and decision-makers with solid knowledge on how to use sustainability for optimising and maximising the efficiencies of their services, finding new clienteles, providing services in areas where they really are needed, and raising their competitiveness internationally.

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