

Bjarne Bruun Jensen, Wolfgang Dür, and Goof Buijs

Introduction

The chapter addresses the health of children and young people in the school setting with a special focus on experiences from Health Promoting Schools (HPS) and selected health promotion projects in schools. On the basis of brief definitions of the salutogenic orientation and the health promoting school model, comparisons will be conducted with regard to key concepts and principles of the two approaches to children's health.

A brief literature overview on the use of salutogenic concepts in relation to schools and health promoting schools is presented and discussed. One focus of interest is to compare the usage of salutogenic concepts to the usage of overlapping concepts, such as self-efficacy, resilience and health literacy, and to briefly explore the distribution of the use of salutogenic concepts in the different European countries. Next, the main findings indicating links between schools and young people's sense of coherence are presented.

A number of projects using the HPS approach are described as examples of major interventions in the field and the evidence on health and behavioural outcomes is summarized. The focus is on models and components with a clear overlap to the salutogenic orientation.

The main conclusion is that the salutogenic orientation has the potential to enlighten and stimulate the HPS development with an overall philosophy, and that intervention

studies based on the HPS approach have the potential to enrich the intervention dimension of a salutogenic approach in schools. The chapter ends with recommendations for the further development of the salutogenic orientation viewed from a school health promotion perspective. Overall key conclusions from the chapter include:

- The key concepts of salutogenesis are not explicitly used in the field of HPS although a number of concepts are closely related to the salutogenic orientation, such as empowerment, action competence, democracy, equity, participation and multidimensional notion of health.
- HPS and health promotion projects in schools will benefit from a more coherent and systematic theoretical and philosophical basis—and salutogenesis has a potential to fill out parts of this gap.
- Findings and observations from the field of school health promotion have the potential to improve and strengthen the intervention and practice base of salutogenesis in relation to the school setting.

Salutogenesis and the Sense of Coherence

In this section, we briefly present how salutogenesis and the salutogenic orientation might be used as an umbrella and as a philosophical underpinning of the HPS movement. First, we introduce our understanding of the salutogenic orientation within the context of health promoting schools. Next, we present the relevant key concepts for HPS, including the whole school approach to health, a multidimensional health concept and participation and democracy as basic principles for a health promoting school.

In this chapter, we understand salutogenesis as an overarching *theory*, leading to a salutogenic *orientation*. Key to this is the concept sense of coherence, which is an

B.B. Jensen (✉)
Health Promotion Research, Steno Diabetes Center, Gentofte, Denmark
e-mail: bjbj@steno.dk

W. Dür
Faculty of Social Sciences, University of Vienna, Vienna, Austria
e-mail: wolfgang.duer@univie.ac.at

G. Buijs
Schools for Health in Europe Network, Utrecht, The Netherlands
e-mail: g.buijs@cboimpact.nl

“orientation to life”, helping the person to live and cope with life and facilitating the development of the person toward health. According to Antonovsky (1987, 1996), the salutogenic orientation can be described by the following three components:

1. To focus on all people in the system (and not only on people at risk)
2. To address and promote ‘salutary’ factors (and not only remove risks)
3. To focus on the whole person (and not only on a specific disease)

Further, Antonovsky (1987) defined the core notion of sense of coherence by the following three dimensions:

1. **Meaningfulness:** a belief that things in life are interesting, motivating and a source of satisfaction (motivational).
2. **Comprehensibility:** a belief that the challenge is understood and that you can understand events in your life (cognitive).
3. **Manageability:** a belief that resources to act are available and that things are manageable and within your control (behavioural).

Finally, these components and dimensions are united in the concept of generalized resistance resources, which are all the resources that help a person (or a collective) to avoid or tackle a range of psychosocial stressors.

During the presentation of the scope and context of HPS, we draw on—and refer to—these key concepts and dimensions of salutogenesis when relevant.

A Health Promoting School

In this section, we use the overall definition of a Health Promoting School (HPS) that was used in the recent Cochrane review (Langford et al., 2014). According to this review, a HPS embraces the following three areas:

1. *Formal health curriculum:* Health education topics are given specific time allocation within the formal school curriculum in order to help students develop the knowledge, attitudes, skills and competencies needed for healthy choices.
2. *Ethos and environment of the school:* Health and well-being of students and staff are promoted through the ‘hidden’ or ‘informal’ curriculum, which encompasses the values and attitudes promoted within the school, and the physical and social environment and setting of the school.

3. *Engagement with families or communities or both:* Schools seek to engage with families, outside agencies and the wider community in recognition of the importance of these other spheres of influence on children’s attitudes and behaviours.

In addition to this, the Cochrane review also presents a so-called logic model—or a programme theory (Pawson & Tilley, 1997)—to illustrate the mechanisms for how a HPS might influence health and educational outcomes (Fig. 22.1).

Health promotion in a school setting is a broad and innovative concept that is rooted in the Ottawa Charter (WHO, 1986). The principles and action areas in the Ottawa Charter such as building healthy policy, creating supportive environments and empowerment of individuals, relate clearly to the salutogenic orientation (Eriksson & Lindström, 2008).

Based on these principles, there is a clear distinction between HPS and the more traditional health education in schools, which is mainly focused on presenting health knowledge (often exclusively related to risk factors) to pupils. A HPS is based on a so-called *Whole School Approach* where health education and teaching are combined with development of school policies, the physical and social school environment and the surrounding community, including parents and health services. Furthermore, the focus is on promoting health rather than preventing a specific disease.

This approach combines a commitment to improving the health and well-being of children and young people and to making schools a better place to learn and work. Furthermore, it also encompasses the health and well-being of school staff. Therefore, health promotion in schools needs to be linked to the core task of a school (which is education) and to its inherent values, such as inclusion, democracy, participation and influence, critical health literacy and action competence in relation to health.

A HPS approach demands an intersectoral strategy. The “Odense statement”, resulting from the 4th European conference on health promoting schools, calls for strengthening links between the education and health sector and all stakeholders (<http://school-forhealth.ru/upload/The%20Odense%20Statement.pdf>). Furthermore, it focuses on taking a lead in school development and school improvement through a health promoting school approach.

Similarly, the Global School Health Statement from the first “Global School Health Symposium” in Pattaya in 2013 calls for a dialogue to better understand education, and more specifically, that the health sector seeks integration within the educational system (<http://www.wholechildeducation.org/about/globalschoolhealthstatement>). The statement also recommends focusing on the growth and development of the

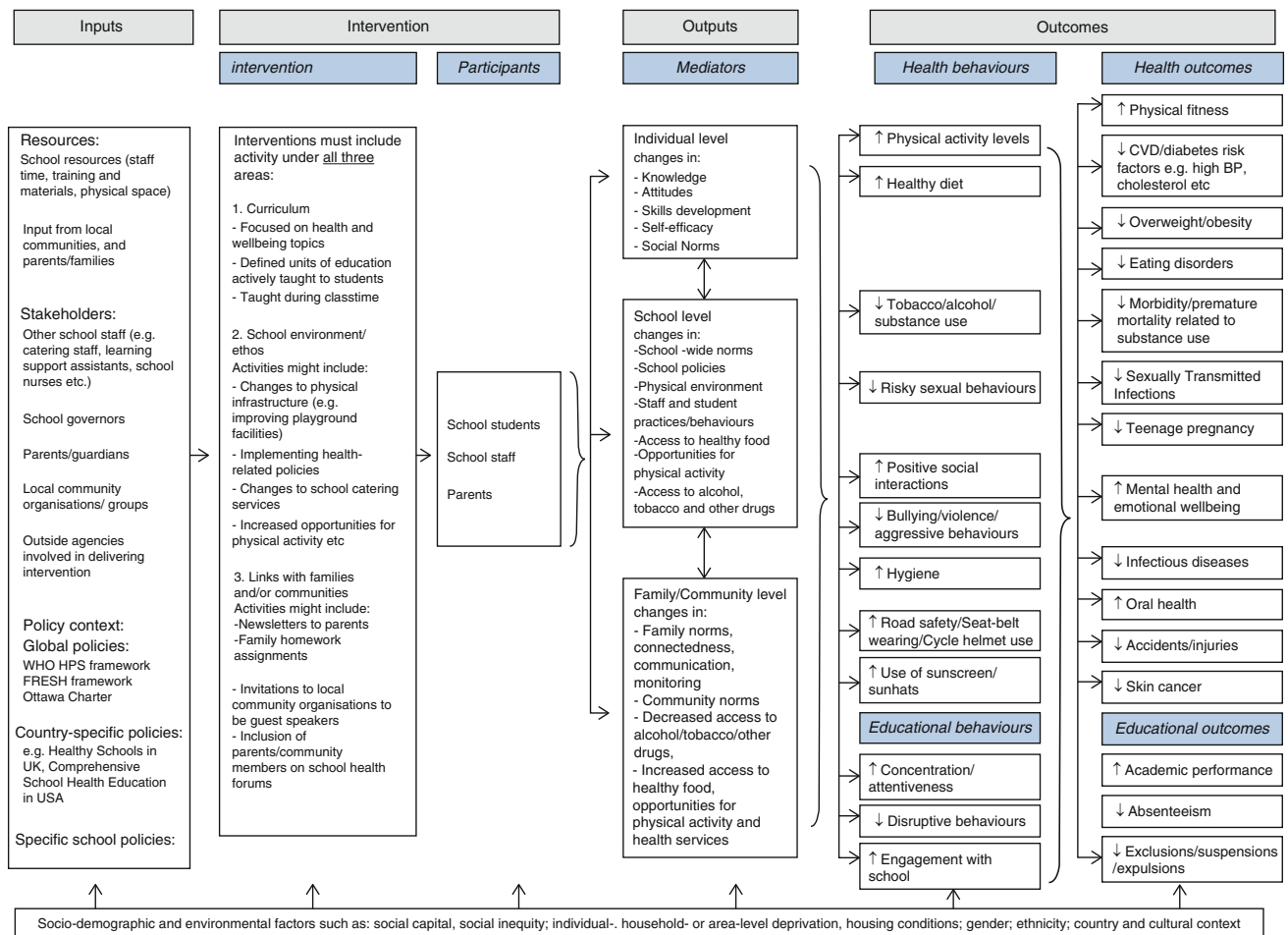


Fig. 22.1 Logic model for impact of HPS on health and learning outcomes

whole child rather than directing attention and resources only toward specific diseases or behaviours. Disease intervention is of course important but needs to be embedded in an overall health and development, or salutogenic framework, refocusing attention on a setting-based approach.

Finally, the Health 2020 policy that was adopted in 2012 by all WHO European member states declares that integrative policies should be developed that engage all sectors in our societies in addressing the determinants of health. Health 2020 also puts a strong emphasis on reducing health inequalities. Children from poorer backgrounds are more likely to experience poor parenting, receive inadequate support in schools and health services, live in hazardous environments and live shorter and less healthy lives as adults. Education policies and schools can help address these inequalities. The WHO EURO H2020 sectoral brief on ‘education and early development’ (2014) states very clearly how education can make a difference in health. Creating better synergy between health and education sectors implies improving education outcomes to create healthy adults.

On the basis of the concepts and models presented, it is obvious that a HPS approach is closely linked to salutogenesis and its core dimensions. Focus is on the whole school community, the whole child and improving children’s competencies and skills to act to promote their health. The values and principles will be further discussed under the description of the European Health Promoting School initiative later in this chapter making the links to the salutogenic orientation even more explicit.

Salutogenesis and Schools

This section summarizes the literature on salutogenesis and schools—independent of health promotion interventions. In the first part, we present a brief overview on how frequent the salutogenic concepts have been used in the literature related to schools and health promoting schools. Among other things we compare it with the use of overlapping concepts (such as self-efficacy, resilience, etc.) and we also explore the distribution of salutogenic concepts in the different European

countries and various disciplines. Further, we introduce the main findings indicating links between schools and young people's sense of coherence. Although there is only limited research exploring the links between salutogenesis and the application of HPS approaches we present and discuss the findings from these studies.

Lindström and Eriksson (2010) define salutogenesis as an 'umbrella concept', underneath which concepts and theories gather that contribute to our understanding of how health is maintained, strengthened or set at risk. Salutogenesis, therefore, does not only relate to the explicit measurement and the application of sense of coherence, but is a much broader framework, touching on concepts like 'empowerment', 'self-efficacy', 'quality of life', 'resilience', 'well-being', 'action competence' and a number of other concepts. While it is universally agreed that all those constructs relate to salutogenic dimensions and make valuable contributions in describing, explaining, analyzing and promoting health, some researchers also claim that Antonovsky's salutogenic theory is still the best explored and with the broadest evidence base (e.g. Lindström, 2010).

In an often cited quote Antonovsky argues that sense of coherence would build up from experiences in childhood and adolescence and would first gain stability in early adulthood or as he puts it:

The adolescent, at the very best can only have gained a tentative strong sense of coherence, which may be useful for short-range prediction about coping with stressors and health status (Antonovsky, 1987, p. 107).

The notion of sense of coherence as a result of the developmental process during childhood and adolescence indicates that the concept basically is seen as an outcome of individual life experiences, learning processes and environmental influences and not primarily as a resource and determinant of positive health. Clearly, any developmental stage of sense of coherence that a child has reached can also be seen as a resource for coping with the challenges that the child is facing at this stage. But it seems that the time factor in the case of developmental processes is not trivial, since both—the child and the child specific environment—change simultaneously over a period of 20 years and more. Therefore, the level of sense of coherence reached at any time may inevitably lack behind the levels of experienced challenges, as long as the developmental process has not come to a certain point of preliminary optimum.

The mechanisms described in salutogenesis to translate growing challenges into a growing sense of coherence, although with a time lag and only under the condition of coping success, are the generalized action and resistance resources. As they grow and convey positive coping experiences, children develop a generalized feeling of comprehensibility and manageability of demands, and a sense of

meaningfulness regarding life as such and the mastering of challenges. Seen from this perspective, childhood and adolescence are seen as crucial life phases, crucial for the development of the personal sense of coherence optimum and the individual health biography.

This is the point where Health Promoting Schools could re-orient its services. If sense of coherence really is the basic mental fundament that supports all other life skills, then HPS and education as a whole should primarily provide opportunities for acquiring generalized resistance resources. This is slightly different from the current orientation towards well-being that many HPS schools have declared to be their guiding philosophy.

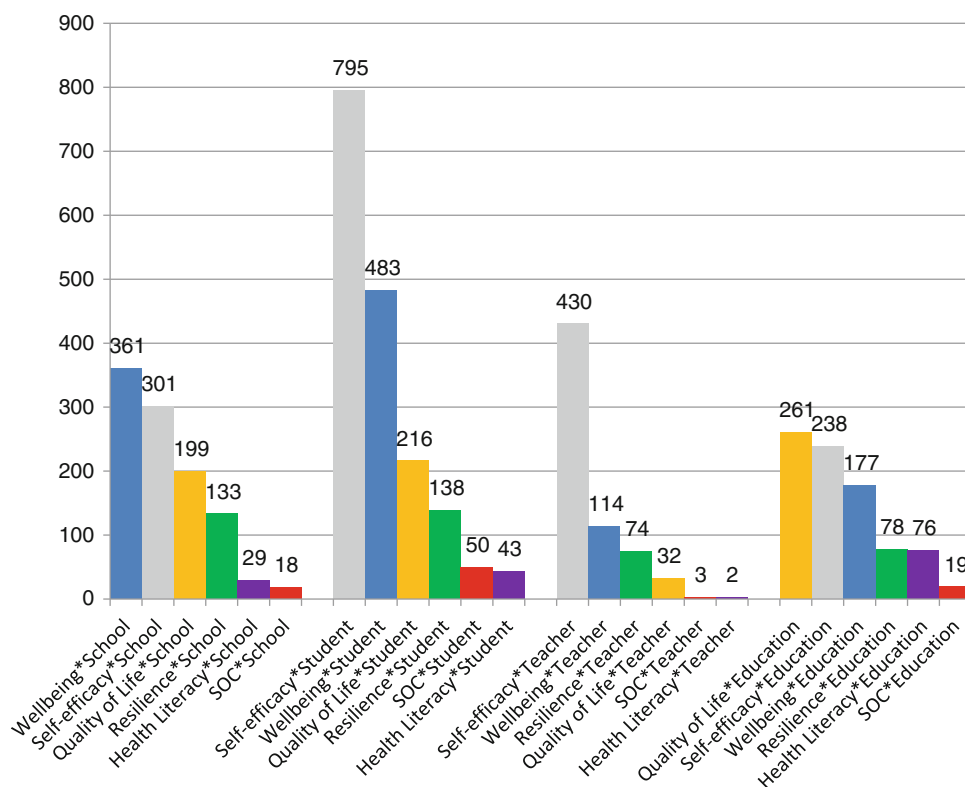
It must be mentioned that there is still some ambiguity regarding the stability of sense of coherence over time in young as well as among adult populations. Currently, there are only a few longitudinal studies that indicate such stability. However, the methodologies and results of these studies are subject to a number of limitations such as the selection of target populations, the definition of follow-up periods, the use of different sense of coherence-questionnaires and the fact that most of these studies have been conducted in Scandinavian countries.

To get an idea about the popularity of salutogenesis in the literature on schools and HPS we conducted a brief literature search in the Scopus database (in November 2014) looking for studies that prominently focus on sense of coherence and salutogenesis. For the purpose of comparison, we selected five additional popular concepts from the 'salutogenic umbrella' (Lindström & Eriksson, 2010): 'well-being', 'quality of life', 'resilience', 'health literacy' and 'self-efficacy'.

The search was conducted as a simple title search of all the above mentioned terms (and commonly known synonyms) in combination with the following keywords: 'school', 'student', 'teacher' and 'education', which operationalized the relevant context for our purpose. Studies with more than one keyword in the title were counted for each; hence, the numbers cannot be added up. We do not claim completeness for our research strategy, but argue that the restriction to the title is a valid indicator for the use of the concepts in the actual study.

From Fig. 22.2 it can be concluded that generally sense of coherence is rarely used in studies related to the school setting. Only 90 publications were identified with sense of coherence in the title, but 1.764 for self-efficacy, 1.135 for well-being, 708 for quality of life and 423 for resilience. More than half of the sense of coherence publications explicitly deal with the health of students, only three publications were directed to the health of teachers. A huge amount of publications investigates the relation between sense of coherence and the school or education in a broader sense.

Fig. 22.2 Number of studies that use sense of coherence, well-being, self-efficacy, resilience and health literacy in a school setting (student, teacher, school and education). Studies are counted for each keyword



That might as well include publications with a focus on students’ and/or teachers’ health.

An analysis of the scientific disciplines that deal with sense of coherence in these studies also revealed that the role of the concept is much less important in social science studies than in medicine or psychology. For sense of coherence, we found that most of these studies have a medical (32 %) or psychological (26 %) focus and less frequently a focus related to the sociological area (15 %). On the other hand, the term well-being is most often used in sociological studies (34 %) and to a lesser extent in medicine (27 %) and psychology (24 %). This seems to indicate that, although Antonovsky was a medical sociologist, the SAL/SOC concept is mainly interpreted and used within the individualistic paradigm.

Furthermore, a cross-country comparison indicates that the concept is well adopted in Scandinavian countries, but only peripheral in Anglo-Saxon research. Twenty-five percent of the sense of coherence publications stem from Scandinavian countries and another 13 % from Antonovsky’s ‘homeland’ Israel. The others is dispersed over many countries, each contributing only between 1 and 3 publications. As a contrast, nearly 50 % of publications on the notion of ‘well-being’ were from Anglo-Saxon countries.

The results confirm the hypothesis that salutogenic concepts and language are relatively seldom used in relation to the school context. First of all, based on Antonovsky’s conceptualization of sense of coherence as a developmental

outcome in the phases of childhood and adolescence, it makes sense to use it in psychological, medical and, particularly, in psychiatric studies that aim at understanding processes of individual development.

Secondly, the use of sense of coherence as an outcome variable in social science studies aiming at understanding for instance the impact of the school setting on health seems to depend on certain prerequisites. To a certain degree this is more likely in countries, where the education system is seen and used as the main investment area for the country’s future. In these countries, the system’s outcomes, therefore, are measured and valued by a broad range of indicators, including self and social competencies, and the education and the health sector work in close cooperation. This is the case for example in countries in Scandinavia, where the history and use of salutogenesis has been relatively strong.

Relations Between School, Sense of Coherence and Young People’s Health

In this section, we summarize the limited amount of studies that have analyzed relations between school, sense of coherence and health among children and adolescents. Some studies treat sense of coherence as a determinant (an independent variable), whereas other studies look at sense of coherence as an outcome of for example educational interventions (dependent variable).

Most studies that investigate the relation between adolescence and sense of coherence do not look at specific life experiences of children and adolescents, be it in the family, in the school or in leisure activities. They use the generalized resistance resources in the phase of adolescence as causal determinants for the development of sense of coherence in adulthood. Antonovsky (1987, 1996) defines generalized resistance resources as the biological, material and psychosocial conditions of an individual in its inner and outer environment, for example the health status, cognitive abilities, level of parental support, parents education level and parental socioeconomic status.

Feldt, Kokko, Kinnunen, and Pulkkinen (2005) investigated child-centred parenting, parental socioeconomic status, school success in adolescence and career orientation in adulthood as determinants of adult SOC. They gathered data at ages 14, 27, 36 and 42 and found that only parental child-centredness and career orientation have a direct, as well as an indirect (via education and stability of career line), relationship with adult sense of coherence (Feldt et al., 2005, p. 305). As for the stability of sense of coherence in adulthood, Hakanen, Feldt, and Leskinen (2007, p. 612) found that the stability of sense of coherence after the age of 30 depended strongly on its level, meaning that higher levels are more likely to be stable, and that the starting level of sense of coherence depends on generalized resistance resources in adolescence.

Both studies demonstrate that adolescence and the family as bundles of generalized resistance resources are highly relevant for the development of the sense of coherence, and this seems to be true even more for early adolescence up to age 15 than for later phases. Hokinen et al. (2008) investigated the stability of sense of coherence during adolescence and found that the change in sense of coherence between the age of 15 and 18 years was not significant (Hokinen et al., 2008, p. 89). This suggests that the development of sense of coherence is driven stronger before the age of 15, than afterwards, and also—contrary to assumptions made in the theory—that the stability of sense of coherence did not depend on its initial level.

García-Moya, Rivera, and Moreno (2013) analyzed data from the international HBSC study (Health Behaviour among School-aged Children), a cross-national questionnaire survey conducted every 4 years in 44 countries and regions across Europe and North America (Currie et al., 2010), and showed that a supportive school environment (classmate and teacher support) was directly linked to the level of SOC. School-related stress and sense of coherence also showed a strong correlation, but the direction stayed unclear since the study used self-report data. By relating to

the model of Salutogenesis, García-Moya et al. solved the problem in two directions: they interpret sense of coherence as an outcome of a supportive school environment and as a determinant in relation to the experience of stress. They concluded that:

a supportive school environment also tended to reduce the likelihood of perceiving school demands as stressful, not only by reinforcing sense of coherence, but also through a direct effect on the perception of school-related stress.

In this view, sense of coherence is seen as an internal mediator of internal effects from external environmental factors (negative ones like demands and positive ones like support) by amplifying the positives. Nevertheless, sense of coherence, in particular the components comprehensibility and manageability, and the concept of adaptation in stress theory are so close, that their mutual relation and direction of causes are difficult to solve on the basis of self-reported data.

Also on the basis of HBSC-data, Torsheim, Aaroe, and Wold (2001) found a strong increase in perceived stress between the grades 5 and 9, but only a slight increase in sense of coherence at the same ages. They also use sense of coherence as a determinant and argue that, in the course of the school career, the academic demands increase faster and more threatening implying that adolescents are not able to fully develop an ‘adolescent’ sense of coherence at the same pace. The experience of stress might therefore be viewed as a result of a time lag in the development of SOC. In other words, according to Torsheim et al. (2001), the development of sense of coherence cannot keep up with the various challenges and demands an adolescent is facing in the course of growing up.

To summarize, studies with a developmental psychology approach tend to use sense of coherence as an outcome of developmental processes, but predominantly look into the family as the primarily relevant setting for children and adolescents. Studies in the area of the school setting, on the other hand, tend to use sense of coherence as a determinant and therefore fail to investigate the school as a highly relevant social system for the development of a strong, protective SOC.

Therefore, the scarce research results do not allow for a final conclusion of the role of sense of coherence in childhood and adolescence. This is where we see the most urgent need for research; intervention studies in the school setting that are able to clarify pathways leading to high or low sense of coherence levels, and that provide indications and guidelines for changes in the school setting in order to optimize the development of students’ SOC. The national and international networks of HPS provide perfect platforms for natural experiments for this purpose.

Health Promoting Schools and a Salutogenic Orientation

As stated in section “Salutogenesis and the Sense of Coherence” on key concepts there are many similarities between the HPS approach and the salutogenic orientation. In this section, a few major interventions related to the HPS approach are presented and discussed with a specific focus on the salutogenic orientation.

The European Network of Health Promoting Schools, now called the Schools for Health in Europe (SHE) network, is structured around its 45 member states in the European region (<http://www.schools-for-health.eu>). In 2013, a survey was conducted among the national coordinators of the SHE network in Europe to gain an overview of current health promoting school policies in the then 43 member countries. Nearly two in three countries (62 %) have a formal health promoting school policy, in most cases as part of their education policies, followed by inclusion in their public health policies, or a combination of education and health policies.

Based on the 2013 survey, a minimum of 34,000 schools in the European region are registered as health promoting schools. These include preschools, primary schools, secondary schools and other school types. It must be kept in mind that the diversity of the different education systems among countries in the European region is huge. There are differences in starting age and programme duration, different models for compulsory education, educational standards and goals; and also each country has its own standards and indicators for being a health promoting school. Despite this diversity, all SHE member countries share principles and core values concerning health promoting schools.

SHE has had a strong link to research, which among others has led to the development of new concepts and models of health promotion in schools—concepts, which are closely related to the salutogenic orientation.

In the SHE network a ‘health promoting school’ is defined as “*a school that implements a structured and systematic plan for the health and well-being of all pupils and of teaching and non-teaching staff*”. This is characterized as a ‘whole school approach’ which consists of the following six components:

- Healthy school policies are clearly defined documents or in accepted practice that are designed to promote health and well-being.
- School physical environment includes the buildings, grounds and school surroundings.
- School social environment relates to the quality of the relationships among and between school community members.

- Individual health skills and action competencies can be promoted through the curriculum such as through school health education and through activities that develop knowledge and skills which enables students to build competencies and take action related to health, well-being and educational attainment.
- Community links between the school and the students’ families and the school and key groups/individuals in the surrounding community.
- Health services are the local and regional school health services or school-linked services that are responsible for the students’ health care and health promotion by providing direct student services.

The whole school approach used in the SHE network therefore rests on a number of core values (equity, sustainability, inclusion, empowerment and action competence and democracy) and a set of pillars (whole school approach to health, participation, school quality, evidence base, involvement of schools and communities).

The ‘Whole School, Whole Community, Whole Child’ Model

Another recent example of an intervention and a conceptual development in this area is the ‘Whole School, Whole Community, Whole Child’ model (<http://www.ascd.org/programs/learning-and-health/wsc-model.aspx>). In the late 1980s, the coordinated school health (CSH) model was introduced by the American CDC (Center of Disease Control). This model demonstrated how a comprehensive approach to school health could be shaped. The CSH model was widely accepted and supported by many health and education organizations. But it can also be argued that educators viewed the model as primarily a health initiative focusing on health outcomes only. Therefore, the acceptance across the education sector at the school level was somehow limited.

In 2014, ASCD (Association for Supervision and Curriculum Development), a leading worldwide education development organization together with CDC developed a new model for school health that combines the CSH model with the ‘whole child initiative’ from ASCD to strengthen a collaborative approach to learning and health. Their ‘Whole School Whole Community Whole Child’ model (Fig. 22.3) demonstrates how education and health together support the development of children—cognitive, physical, social and emotional. It is described as an ecological model, integrating the current whole school approach with a whole child approach to education (<http://www.ascd.org/whole-child.aspx>) and the influences of the local community.

Fig. 22.3 The ‘Whole School Whole Community Whole Child’ model, developed by CDC and ASCD



Shape Up as a Salutogenic Health Promotion Project

Another intervention founded on the principles of pupil participation and a whole school approach is the EU-funded SHAPE UP project, focusing on overweight and obesity in children and young people (Simovska & Jensen, 2010). Although the fundamental premise of Shape Up was that healthier eating and regular physical activity are keys to preventing childhood obesity and promoting the health and well-being of children and young people, the project was built on a salutogenic approach.

The starting point was that promoting healthy diet and physical activity are influenced in more efficient and sustainable ways by addressing their determinants on a school, family, community and broader societal level, rather than solely on an individual behaviour level. Furthermore, health was framed in the project as a positive concept; play and dance instead of physical activity, food, meals and eating instead of nutrition, etc. Therefore, a key to Shape Up was the involvement of children and young people themselves through their schools in investigating the social determinants of health and formulating positive and visionary proposals for action to address them.

Within the SHAPE UP project, the IVAC approach—Investigation, Vision, Action and Change—(Jensen, 1997, 2004) was used as a guiding framework to support children in taking concrete actions to improve the determinants ‘behind’ their health. In practice, this typically meant improving the quality of food on offer in school, enhancing opportunities for physical activity in the school and in community settings, and increasing parents’ understanding of health issues. Because of the relationship between schools and the local promoting group, young people had the capacity to see their ideas turned into action, and the individual development promoted by the programme could be supported by changes in policy and infrastructure at local level.

The Shape Up project did not focus on tackling inequality per se, but the project demonstrates that children and young people are able to initiate processes that improve determinants in their local environment and thereby promote the health of *all* children (including the vulnerable young people).

In another project, the IVAC approach used in the SHAPE UP project was proven effective in an area in Northern Spain (Llargues et al., 2011). The outcomes that were successfully achieved included among others children’s BMI, showed that a participatory and action-oriented

approach, building on a positive health concept, also might lead to successful preventive outcomes.

Relations Between HPS and Young People's Health and Learning

When children grow up, their family and homes are key determinants of their health and well-being. When they enter the education system, their schools, peers and communities in which they live also become important in determining their health. So education is another key determinant to their health. Children starting their education in early life, such as preschool or kindergarten, are more likely to do well at school, get better paid employment and have better health in adulthood. Education is a key tool to help reducing inequality in income in our globalized economy, which is also recognized in the recent publication by economist Thomas Piketty on capital in the twenty-first century.

The 2013 factsheet of the SHE network provides an overview of the evidence of school health promotion (SHE, 2013). Most of the HPS evidence traditionally comes from health topic research (on healthy eating, physical activity and tobacco use), rather than from research looking at whole school approaches or looking at initiatives focusing on health in a more holistic way. The overall conclusion from topic-based research is that programmes that can be classified as a health promoting school or whole school approach deliver most evidence on improving health behaviours. This is especially true for mental health programmes in schools. Successful mental health initiatives are well designed and based on theory and practice, have links between school, community and parents and school environment and focus on relationships among students, teachers and parents (SHE, 2013).

Results are varied and demonstrate improvements in achievement tests, social and emotional skills and decreases in classroom misbehaviour, anxiety and depression. There are also demonstrated benefits concerning reduction of aggressive behaviour, school drop-out rates and building a sense of community in the school. Similar positive links have been showed on other topics with a whole school approach, specifically in the area of promoting healthy eating and physical activity. It is stated that mental health should be a feature of all school health promotion initiatives.

The 2014 Cochrane review on the WHO health promoting school framework, based on cluster randomized control trials, concludes that there is some evidence that school-based interventions building on a HPS framework are effective at improving a number of health outcomes in children and young people. It found evidence of significant, positive effects on body mass index (BMI), physical activity, physical fitness, fruit and vegetable intake, tobacco use and being

bullied. It also stated that currently it has not been demonstrated that the HPS framework can have an impact on other outcomes such as mental health or attainment. The most important limitation of this review is that the many studies that are not designed as randomized control trials were not included.

Other reviews, such as the Stewart-Brown, 2006 review, commissioned by WHO EURO, uses a wider lense to evaluate what worked well and what are prominent features of a whole school approach (Stewart-Brown, 2006). The review was a systematic review of robust, systematic reviews of the impact of school health promotion initiatives on some aspects of health or well-being and did therefore not only include randomized controlled trials. It concludes that the school health promotion programmes that were effective in changing young people's health or health-related behaviour were more likely to be complex, multifactorial and involve activity in more than one domain (curriculum, school environment and community).

A paper from the International Union for Health Promotion and Education (IUHPE) shows that activities in schools on improving health and well-being are a product of interaction between school management and educational practices (St Leger, Young, & Blanchard, 2010). A supportive educational climate will motivate children and young people to be effective learners and at the same time lead to better health and well-being.

Having said that, it can also be concluded that interventions that take a whole school approach and target all students have a higher impact, everything else being equal. Furthermore, a positive health concept—as explicitly spelled out in SHE and Shape Up—improves the likelihood for improving students' ownership and therefore also for facilitating sustainable healthy changes.

Discussion and Conclusions

One of the very clear observations is that the salutogenic orientation including key concepts such as sense of coherence is rarely used explicitly in the field of school health promotion and HPS. Nevertheless, the different HPS interventions presented in this chapter demonstrate clear and obvious overlaps to the salutogenic orientation. Therefore, we only partly agree with Sagy that only a small number of holistic programmes have been developed all over the world, which are salutogenic oriented (Sagy, 2014). In other words, the HPS movement includes many different examples of interventions which could be labelled salutogenic, although they are described by terms from other scientific directions and areas.

Within the SHE approach and related models, there is a clear focus on *all people* in the 'school system', and the aims

are to improve salutary factors and not only remove risks. Both characteristics are well and explicitly reflected in the ‘whole school approach’ that is underpinning SHE, WSCC, the SHAPE UP project, etc.

Furthermore, all projects described in this section are dealing with the ‘whole child’ instead of only addressing disease and risks dimensions, in other words the focus is on a salutogenic (and not a pathogenic) approach.

Key concepts related to the notion of health are well-being, quality of life, being in control, competence to take action, play and dance (and not ‘physical activity’) as well as food, meals and school canteens (and not nutrition pyramids and fatty acids). This positive way of phrasing health is a precondition for reaching another key principle in the HPS approach: students’ active participation and involvement which creates internationalization and ownership and therefore also the potentials for sustainable healthy change. The principle of participation is therefore also consistent with Antonovsky’s underlining of “*participation in socially valued decision-making*” as a prerequisite for developing strong sense of coherence (Antonovsky, 1996, p. 15).

We therefore agree with Morgan (2014) that we need to strengthen the focus of involving individuals and local communities in the salutogenic practice as “*the more health programmes are developed with and by local people the more likely they are to be successful and sustainable*” (Morgan, 2014, p. 4).

Finally there are also strong overlaps and links between HPS concepts like empowerment, action competence and self-efficacy and the salutogenic concepts sense of coherence and Generalized Resistance Resources. The metaphor suggested by Antonovsky (1996) and further developed by Eriksson and Lindström (2008) on the river of health is a good illustration for visualizing overlaps between these concepts. Where curative medicine is devoted to help people who are drowning and preventive medicine is helping people not to fall into the river, the salutogenic approach and sense of coherence is focusing on enabling people to swim. Empowerment, action competence and similar concepts from the HPS area do have the same potential and roles: to enable people to swim—as single individuals and together.

There is a need for more research which uses a wide range of methods. Also more systems research, which attempts to assess the synergic interactions which can occur the complex reality of a school, is needed. Good practice is also part of the evidence, and the SHE network strongly advocates disseminating good practice studies results. The goal of embedding good practice in education systems is not yet accomplished. The potential of schools in improving health and reducing health inequalities needs to be better utilized and underpinned with research.

From the interventions and cases presented it is clear that there is a substantial link between HPS and whole school

approaches and the salutogenic orientation. Therefore, the emerging evidence for the effects of such approaches could be used to anchor and document the effects of a salutogenic approach in schools. One important focus area for future research could be to clarify the role of sense of coherence in a HPS, which could perhaps be viewed as an intermediary and mediating factor between participatory whole school approaches and behavioural and health outcomes.

What the HPS development is currently lacking is a clear and commonly agreed overall theory, which is where the salutogenic area could help to embed and anchor school health promotion and HPS. On this basis we conclude that salutogenesis can contribute with a theoretical fundament for HPS and related approaches.

On the other hand, the intervention models and the appearing evidence of the effectiveness of a HPS approach described in this chapter can be used to strengthen the action-orientation and intervention dimension of the salutogenic theory. In other words, the HPS might help to operationalize and describe the ‘Salutary factors’ in the salutogenic theory, which can be viewed as the current weakest link in the salutogenic orientation.

Future Challenges

A number of key challenges are important to strengthen the role of the salutogenic orientation in school health promotion.

There is a need to develop, test and implement intervention studies in the school setting that are able to clarify pathways leading to high or low sense of coherence levels, and that provide indications and guidelines for changes in the school setting in order to optimize the development of students’ SOC. The national and international networks of HPS provide perfect platforms for natural experiments for this purpose.

The role of sense of coherence as a possible mediator between a participatory and action-oriented HPS and behavioural and health outcomes need to be explored, mapped out and clarified. In this regard, the sense of coherence can be viewed as a determinant and well as an outcome in the HPS-setting and as a dependent as well as an independent variable in new research designs.

Relations between sense of coherence and typically related HPS intermediaries (e.g. empowerment, health literacy, self-efficacy and action competence) have to be explored and mapped out. The focus should be on theoretical underpinnings, measurements, relations to health outcomes and internal synergies.

Salutogenic approaches and models need to strengthen the community or collective dimensions since no one is in control of her/his own health as a single, isolated individual.

HPS models and concepts like empowerment and action competence do have the potentials to emphasize and strengthen key elements in the intervention part of the salutogenic orientation such as connectedness, collective action and social capital as key social-level generalized resistance resources.

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