



Reasons for a differential impact of policies and interventions on the social gradient of health

A literature review

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On behalf of 'Tackling the Gradient: Applying Public Health Policies to Effectively Reduce Health Inequalities amongst Families and Children, Work Package Three'

Colofon

Title: Reasons for a differential impact of policies and interventions on the social gradient of health

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1. About Gradient

1.1. Background

Reducing health inequalities are currently regarded as one of the most important public health challenges in the EU. However, we do not have sufficient knowledge of which actions are effective to level up the gradient in health inequalities. The gradient in health inequalities is the association between socioeconomic position and health across the whole population. In whatever way health is measured, there tends to be a gradient on which the most socially and economically advantaged group have better health and well-being, and lower rates of illness and death than disadvantaged groups. In western societies, the shape of the gradient tends to be relatively smooth with mortality and morbidity increasing, and self-reported health and well-being decreasing steadily as social disadvantage increases. Over time, the gradient as a whole tends to shift upwards because overall the health of most groups is improving. However, the degree and rate of improvement tend to be greater in higher social groupings, meaning that relative differences, and therefore the degree of inequities and inequalities, also tend to increase (2).

GRADIENT is a research project which has received funding from the EU's Seventh Framework Programme, and is led by EuroHealthNet¹. The Gradient (March 2009 – 2012) aims to address the gap in knowledge to tackle the gradient, to ensure that political momentum is maintained and that operational strategies can be developed to make progress on this issue (3). The focus of the research project will be on families and children given that inequalities during childhood have long-lasting negative impacts on health and well-being, even if people manage to move up to higher socio-economic groups by adulthood (4).

The Gradient project (3) strives to:

- Develop a consensus-based European Framework to monitor and evaluate public health policies and their impact on the gradients that exists in the social determinants that generate health inequalities.
- Investigate if and why children and families from different socio-economic groups respond and act differently to public health policy interventions
- Identify protective factors for the health of children and young people and their families focusing on social relations and social networks, in order to explore alternative policy options that moderate social inequities in health.
- Analyse and compare the impact of general policies for families and children with the impact of policies targeted at 'at risk' families and children.
- Formulate policy recommendations at European, national, regional and local level and disseminate the findings across the European Union.

For explanation of terms, see the glossary in appendix 1.

¹ See 2.1 Partners WP3.

1.2. Work Package 3

The Netherlands Institute for Health Promotion and Disease Prevention (NIGZ) is responsible for the coordination of Work Package three (WP3) of the GRADIENT project. Over three years WP3 will focus on research regarding the unintended differential impact of public health policies among children and families with various socio-economic backgrounds. Public health policies that aim to influence the health gradient², health determinants³ and health are often more successful amongst families and children from higher than amongst those from lower socio-economic groups. In order to ensure that public health policies lead to a decrease, and not to an increase in health inequalities, or, in other words, lead to a flatter, rather than to a steeper health gradient, we have to understand whether, how and why children and families from disadvantaged groups respond differently to public health measures and to what extent public health policies that specifically target at-risk families are successful in reaching them. To get a clear understanding of this, the next objectives are formulated.

1.3. Steps within WP 3

1. Undertake a literature review regarding the underlying psycho-social, cultural and economic reasons for a differential impact of public health policies in different segments of the population in order to determine the 'state of the art' knowledge in this field.
2. To investigate if and why children and families from different socio-economic groups respond and act differently to public health policy interventions.

1.4. Deliverables WP3

D3.1: A review paper and article

D3.2: An overview of existing general public health policies in participating countries aimed at children and families, sorted by effectiveness on tackling the gradient.

D3.3: Report on the analysis of differential uptake and success factors and barriers for effectiveness

D3.4: A quality framework (structure of criteria and standards) of success factors and barriers for effective uptake of policies by children and families from lower socio-economic groups (to feed back into WP2 Evaluation Framework)

D3.5: Recommendations for local, national and European public Health policies (to feed into final book WP6).

² The association between socioeconomic position and health across the whole population 2.PAHO/WHO. Self-instructional course on social determinants of health (..).

³ A health determinant is a force or element that affects health, either positively or negatively. Health is determined by both intrinsic factors, such as genetics, behaviour, culture, habits and lifestyles, and extrinsic forces such as preventive, curative and promotional aspects of the health sector, as well as elements outside the health sector including economic factors (e.g. trade), social factors (e.g. poverty, culture), environmental factors (e.g. climate change) and technological factors (e.g. information technology) 5.EC Expert Group on Social Determinants and Health Inequalities. Health Inequalities Glossary. Background document.; 2007.

2. Review: introduction

Within the first year of WP3 a literature review is carried out to determine the current state of knowledge on tackling the gradient in health. The main purpose of this literature review is to find an explanation for why people respond differently on (public health) policies and interventions. In other words, what are reasons for people to, for example respond positively on an invitation for a vaccination, or a health screening. Why do some people use financial incentives such as discounts on a membership of a fitness centre and other people don't?

The information out of the review will be tested in practice. The found reasons out of the literature search are used as input for focus group discussions with policy makers and policy users, the next step in this Work Package. Finally, based on information out of research, practice and policy we are more capable to answer the question why people respond differently on (public health) policies and interventions. This will give us tools to reduce the steepness of the social gradient in health more successfully.

Out of earlier research it appears that mortality declines with wealth, rank, social status and occupational grade also. The Whitehall study shows that the gradient in health is more than an effect of poverty: among Whitehall civil servants in the UK ill health and mortality are related to occupational grade. None of them were poor (6). For this reason the review will not only focus on economic reasons to respond differently on a policy, but on psycho-social and cultural reasons also.

2.1. Steps within the literature review

The steps described below are aimed at causes or reasons of the differential impact of (public health) policies. The first step is to investigate the current knowledge on this subject. These steps will lead towards hypotheses of causes and reasons of the differential impact of (public health) policies and interventions:

1. Mapping the current knowledge and information on differential impact of policies and interventions on health across different SES groups and age groups of children (and their families).
2. Exploring the causes of differential impact of existing of policies and interventions on health aimed at children (and their families).
3. Analyse and sort the differential impact of policies and interventions on health by effectiveness on determinants of health across different SES groups and age groups of children (and their families).

Outcomes of the review

A review paper and article, including:

1. Analytical framework⁴: including the different determinants of health and different SES and age groups.
2. Overview of differential effects of policies and interventions on health in the analytical framework on determinants of health across SES groups and age segments of children (and their families).

⁴ This analytical framework is coordinated with WP5 en WP6.

3. Hypotheses for causes of a differential impact of policies and interventions on health a on children (and their families).

These results are the input for the panel discussions (focus groups) that take place in the second part of WP3 about reasons for the (differential) effects.

The objectives implicate certain choices. These choices are explained in paragraph 2.4. The definitions used in the review are described in the glossary in appendix 1.

2.2. Partners WP3

The review will be undertaken and guided by WP3 partners The Netherlands Institute for Health Promotion and Disease Prevention (NIGZ) (lead), the EuroHealthNet (Belgium), Universidad de la Laguna (Spain), National Institute of Public Health Czech Republic and The Karolinska Institute (Sweden).

EuroHealthNet (Belgium), leads the GRADIENT project and is partner in WP3.

EuroHealthNet is a non profit organization that aims to contribute to a healthier Europe with greater equity in health between and within European countries. This is achieved by networking and cooperation among relevant and publicly accountable national, regional and local public health and health promotion agencies in EU member states. Currently EuroHealthNet comprises 33 mainly national agencies in 29 European countries. The office operates in four priority areas: Networking, communications, policy development, and research projects.

Personnel:

Caroline Costongs – Project Manager

Aagje Ieven – Project Coordinator

Website: www.eurohealthnet.com

The Netherlands Institute for Health Promotion (NIGZ) is WP leader of WP3.

The Netherlands Institute for Health Promotion (NIGZ) develops programmes in support of healthy behaviour and healthy environments. It especially assists local authorities, local health promoting institutions and companies in developing, implementing and assessing health policies. It also give practical support to health professionals through information, training, educational methodologies and materials, counselling and coaching. NIGZ seeks partnerships with other organisations at the local, regional, national and international level. Advocacy for health in the political arena is considered an integral part of the strategy.

Personnel:

Janine Vervoordeldonk – WP Leader, Research Manager

Jan Jansen - advisor

Sarah Pos- research coordinator

Annemiek Dorgelo- researcher

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Partners in the work package are:

National Institute of Public Health, Czech Republic

The National Institute of Public Health was established in 1925. The main activities of NIPH comprise science and research, reference and methodological consultancy, expert opinions, systematic monitoring of environmental health in the Czech Republic and preparation of legislation in the field of health protection. In the field of health promotion and disease prevention, NIPH concentrates on the most important health problems – epidemiological surveillance of severe infections and promotion of a healthy life style (prevention of cardiovascular diseases and tumors, healthy nutrition, drug abuse prevention). The Institute plays an active role in pre- and postgraduate training of physicians and other health care professionals.

Personnel:

Vladimir Kebza – Research Manager

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University of La Laguna, Spain

University of La Laguna is located in Tenerife, the biggest Island of the Canary Islands Archipelago. It offers about 55 different graduate studies as well as many postgraduate courses including Master and Ph degree. It has about 24000 alumni, 1839 lectures (including all categories) and 819 administrative personal and has a long experience in dealing with international programmes with students from EU and non-EU citizens as well as from South America and Africa. As an academic Institution it has a wide experience in participation in many researches projects at national and international level.

Personnel:

Sara Darias-Curvo (PHD) – Researcher

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The Karolinska Institute, Sweden

The Karolinska Institute runs both research and interventions within the area of equity in health, e.g. epidemiological studies, policy research, for example evaluation, and intervention studies. Several of the Institutes researchers do interdisciplinary studies of social differentials and trends over time in health, health care utilisation, social and economic consequences of disease and the impact of policy on health in specific groups in different contexts, using qualitative and quantitative methods.

The aim is to facilitate equity-oriented health policy making. Some project members (Marttila,

Burström) already participate in international projects funded by the EU (Tackling health inequalities in Europe - Eurothine) and other research agencies (Pathways to social inequalities in different welfare states; Resilience to the health effects of poverty, funded by British ESRC).

Personnel:

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3. Methods

3.1. Strategy

The Netherlands Institute for Health Promotion (NIGZ) and The Netherlands Organisation for Health Research and Development, ZonMw, together developed an approach integrating information from research, practice and policy in a systematic and transparent way in order to determine the current knowledge for decision support or knowledge support in the field of health promotion. This systematic approach is applicable for WP3: findings out of the literature (research) will be discussed with the target group, project leaders (practice) and policy makers (policy). This report only comprises the research part (literature review), the next step of WP3 will be the input out of policy and practice.

3.2. Sources of research

This literature review not only comprises a search within scientific sources but other sources also, including electronic databases, bibliographies of articles, grey literature sources, and key experts and organisations. The combination of sources is a considered choice. The expectation was not to find many scientific information on this subject. Besides the fact that the researchers did not expect to find all the literature available. With the combination of sources the researchers tried to increase the inclusion of as many relevant available information as possible.

NIGZ was responsible for the search in the scientific databases. All WP-members where responsible for the search in their own language and the grey literature search in their own country.

The sources used are shown in the text box below.

Scientific literature:

Google Scholar, PubMed, Cochrane Library, CINAHL, ASSIA, PsychInfo, Web of Knowledge, Sociological abstracts, Current Contents Medizin, MEDPILOT, Scirus, Bundesgesundheitsblatt, Deutsches Ärzteblatt, Das Gesundheitswesen.

Grey online Literature sources:

- Google
- FHI/Folkhälsoinstitutet - The Swedish National Institute of Public Health
- Ungdomsstyrelsen - The Swedish National Board for Youth affairs
- BRÅ/Brottsförebyggande rådet - The Swedish National Council for Crime Prevention
- Skolverket - The Swedish National Agency for Education
- <http://www.pnsd.msc.es/Categoria2/publica/otras.htm> - In this web site we can find some recommendations about substances abuse.
- <http://www.educacion.es/observatoriodeinfancia/contexto/index.html>- website of the Spanish Observatory of children
- <http://www.educacion.es/observatoriodeinfancia/grupos/index.html>- with specific focus in matters as immigrant children, adoption, violence against children, etc.
- DREES website- French website
- Plattform Gesundheitsförderung bei sozial Benachteiligten- platform health promotion for socially disadvantaged persons

Consultation with experts in this area:

- B. Burstorn, Karolinska Institute, Sweden.
- V. Kebza, National Institute of Public Health, Czech Republic
- Experts from the Robert-Koch Institute in Berlin

Search terms

Several search strategies were piloted and investigated. Relevant literature regarding effects of existing (health) policies are identified from scientific resources, grey literature sources and experts.

Most literature found is based on the search terms ‘effect or impact or evaluation, and (health) policy, and/or health differences or health inequalities or health deprivation. A list of all search terms can be found in appendix 2.

Inclusion and exclusion criteria

Given the broad perspective of the literature review, inclusion and exclusion criteria are formulated for the identification of relevant literature.

The objectives mentioned before (2.1) implicate certain choices.

- In this review not only public health policies are included. If other policies like education policies and policies on housing are excluded, interesting evaluation studies on the differential impact on health and health gradient may be excluded. On the other hand the review will be to extensive if all policies are included. Therefore at least one health policy *and* possibly also general policies with an impact on health per age segment are included. Also the project group decided to include at least one policy/intervention from the age segment 0-5 years.
- The objectives implicate that not only policies will be included. Interventions with a differential impact on health are also included. Interventions and policies are related. Policies do often lead to certain interventions. In most of the cases the effects of these interventions are measured and not the policies. Therefore interventions as a result of certain policies are included too.
- In this literature search evidence from Europe is considered the most relevant. When little literature is available North America and Oceania are included also (Western countries).
- The literature search will focus on children and families. Children are included when they live at home and are dependent of their parents. Because of the known effect of interventions aimed at pregnant woman of this age segment will also be included.
- As described before, the first phase of the literature search was focused on the differential impact and uptake of (health) policies. Only policies and interventions are included if they have a described effect or impact on the social gradient of health. This implicates there has to be an effect on health and the described effect influence the inequality in health between different SES groups.
- In case little literature is available, literature on effects or differential impact of policies and interventions on health determinants, related to lower SES and deprived groups are also included. Based on theories effects of determinants on health inequalities can be reasoned as possible intermediate effects of policies and interventions and might have an impact on the health gradient on the long term (see table 2). It might provide relevant leads for reasons why people respond differently to policies and interventions and it can deliver input for further research. In relation to the objectives of this research literature on economical determinants, psycho-social determinants and cultural determinants where the most important. Literature on environmental factors were also included if it was related to the health gradient.

Inclusion criteria:

Literature that:

1. Discusses reasons of differential impact of (health) policies on (determinants of) the social health gradient,

Or

2. Focuses on effects of (health) policies on (determinants of) the social health gradient,

And

3. Focuses on children and their families including pregnant women,

And

4. Is written and documented,

And

5. Includes evaluations of policies and interventions

And

6. Is from Europe, Oceania and North America.

Exclusion criteria:

Literature that:

1. Was published before 2000,

2. Is a proposal for legislation,

3. Doesn't describe results of process- or effect evaluations of interventions or policies.

These criteria are applied in the first phase of the including/excluding process. Two researchers applied the criteria independently. The first search is done by different WP-members. Based on the criteria in the first phase, literature is selected in probable includes and possible includes. A researcher of NIGZ finally selected and divided the relevant information based on title and summary's amongst the WP-members. When there was a disagreement in exclusion of inclusion of literature a third person was consulted.

Included literature

The WP3-members included in total 61 interventions and policies in the online analyse tool. After a check by a second researcher (and if was necessary a third) in total 9 scientific reviews, 34 (scientific) studies and 13 other type of sources (grey etc.) are included. Approximately 27 relevant sources are from Europe: 5 UK, 3 German, 4 French, 12 Dutch, 1 Norwegian, 1 Swedish and 1 Czech Republic studies/reviews. Besides that approximately 11 US sources and 1 Canadian source has been found.

3.3. Analyses

For the analyses NIGZ developed an online analyse tool. This tool was based on the GRADIENT Policy (Analyse) Grid developed together with the other work packages in the GRADIENT-project (see appendix 3). With the online tool all WP3-members were able to do analyse work in a consistent way. All the literature found was analysed on reference, type of instrument, intervention or policy level, aim of policy, target group, methods of evaluation, intended and unintended differential impact/effect on determinant of health, success factors/barriers and level of evidence. Contextual factors like concept of health were also included.

First analyses

Unfortunately in most of the cases there was no information available on methods of evaluation, success factors/barriers, methods of evaluations and/or concepts of health. First analyses shows that the included information on effects of policies and interventions on health inequalities and the health gradient are in 23 cases based on randomized clinical controlled trials of low quality or insufficient size, or other similar research (quasi-experimental) and or non-comparative studies (remeasurement in a single group) or in 4 cases based on expert opinion (n=4). In most cases (n=26) however, the level of evidence of the information is not known or the information is derived from grey literature (table 1).

The findings can be divided in two different levels of evidence.

1. *Literature on policies and interventions with an impact of effect on the social gradient of health.* This is literature on policies and interventions with a described effect or impact on the social gradient of health. This implicates the impact or effect on the gradient has to be described, there has to be an effect on health and the described effect influence the inequality in health between different SES groups.
2. *Literature on policies and interventions with an impact of effect on determinants of health inequalities.* This is literature which describe effects on (determinants) of health inequalities and is based on theories (e.g. Albeda model, ASE model) that these determinants can affect the social gradient of health on the long term.

The first level is literature with evidence out of studies, which deliver information on the differential impact on the social health gradient and might give reasons for a differential impact. The second level of findings are based on theories and might provide relevant leads for reasons why people respond differently to policies and interventions and can deliver input (in combination with the first step) for the next step in this work package, the focus group discussions.

In the presentation of the results these two levels are leading. In chapter 4 results on policies and interventions tackling the gradient are presented. Chapter 5 will present theories on determinants tackling health inequalities and the social gradient of health and policies and interventions which show effects on these determinants of health inequalities.

Table 1

Overall aim of the policy or intervention (or the relevant information).			
<i>Number of interventions and policies: 61</i>			
Reducing health inequalities		18.0%	11
Improving health of risk groups		29.5%	18
Improving health of deprived groups		24.6%	15
Tackling health inequalities		14.8%	9
Tackling the health gradient		11.5%	7
Other... (improving health of whole population, research and not intervention of policies)		42.6%	26

Table 2

<i>Number of interventions and policies: 61</i>			
**** Based on at least one review of A1-level, or at least two independent studies carried out on A-level.		9.8%	6
*** Based on one study of A2-level, or at least two independently carried out studies of level B		3.3%	2
** Based on one study of level b, or c		37.7%	23
* Published opinion of experts or opinion from, for example, focus group discussions		6.6%	4
Other... (not known, or grey literature)		42.6%	26

Level of evidence for articles about effectiveness of interventions (or in this case policies):

A1 Systematic reviews of at least two studies of A2 level, where the results of the primary studies are consistent;

A2 Randomized clinical controlled trials of good quality and size (randomized, double blind, controlled);

B Randomized clinical controlled trials of low quality or insufficient size, or other similar research (quasi-experimental)

C Non-comparative study (remeasurement in a single group);

D Expert opinion, for example out of focus group discussions

4. Results: policies affecting the Social gradient of Health

4.1. Introduction

The main purpose of this literature review is to map the current knowledge and information about the impact of policies and interventions on the social gradient of health and to find reasons for a differential impact of policies and interventions on health across different SES groups and age groups of children (and their families). Based on this knowledge and information the purpose is to find an explanation for why people respond differently to policies and interventions. In this chapter policies with an effect or an impact on the health gradient are described. Based on this knowledge factors are identified which may be reasons for a differential impact.

As expected, it appeared to be a tough job to find literature about interventions and policies with an impact or effect on the social gradient in health. In six references policies with an effect on the social health gradient are described: five European and one American. The text box below gives an overview of the origin of these references, the type of references and the level of evidence. The evidence levels of five references is ranked **: the references are based on randomized clinical controlled trials of low quality or insufficient size, or other similar research (quasi-experimental) and/or non-comparative study (remeasurement in a single group) and/or expert opinion, for example out of focus group discussions.

Four European references are reviews based on more than two studies, however the compared studies in these reviews are not all randomized clinical controlled trials of low quality or insufficient size, or other similar research (quasi-experimental). Non-comparative study (remeasurement in a single group) and expert opinion, for example out of focus group discussions, are also included. This is the reasons the level of evidence for five policies is ranked with ** by the researchers. One European policy (KOPS) used control schools and therefore is ranked with ***.

Policy	Evaluation	Level of evidence
<i>European policie tackling the gradients</i>		
Tackling Health Inequalities in the UK (1)	Review	**
Gruppen- und Individualprophylaxe policy [policy on dental oral group and individual prophylaxis in Germany] (7)	Review	**
Kiel Obesity Prevention Study (8)	Study	***
La Protection Maternelle et Infantile and the French health and social policy programme (9)	Review	**
The UK national policy (10)	Review	**
<i>USA Policy tackling the gradient</i>		
Women-Infants-Children (WIC) Policy (11)	Study	**

Of the six policies, the most recent literature source is the Marmot review (1). In the review lessons are drawn from recent policy experiences in the UK related to health inequalities and the social

gradient of health. Because the document is the most recent and highly relevant this chapter starts with a short description of this review and it's results. This description is followed by a short description of other European policies and policies in North America and it's effects on the social health gradient.

4.2. European Policies affecting the social health gradient

Tackling Health Inequalities in the UK

The major task of the Marmot review (1) was to assemble the evidence and advise on the development of a health inequalities strategy in England. The evidence relied heavily on the scientific literature, but this was not the only type of evidence what was considered. Also they engaged widely with stakeholders and attempted to learn from their insights and experience (1).

The Government of the UK developed a national health inequalities strategy, Tackling Health Inequalities: a programme for action with twin aims: to deliver a national health inequalities target by 2010 (reducing inequalities in infant mortality and life expectancy at birth) and to support a long-term sustainable reduction in health inequalities. This strategy is based on the findings of the earlier Black report and Acheson recommendations (1) related to health services:

- To assess the impact on health inequality of all policies
- To give priority to women of child-bearing age, expectant mothers and young children
- To reduce the gap in living standards between the worst-off and the average.

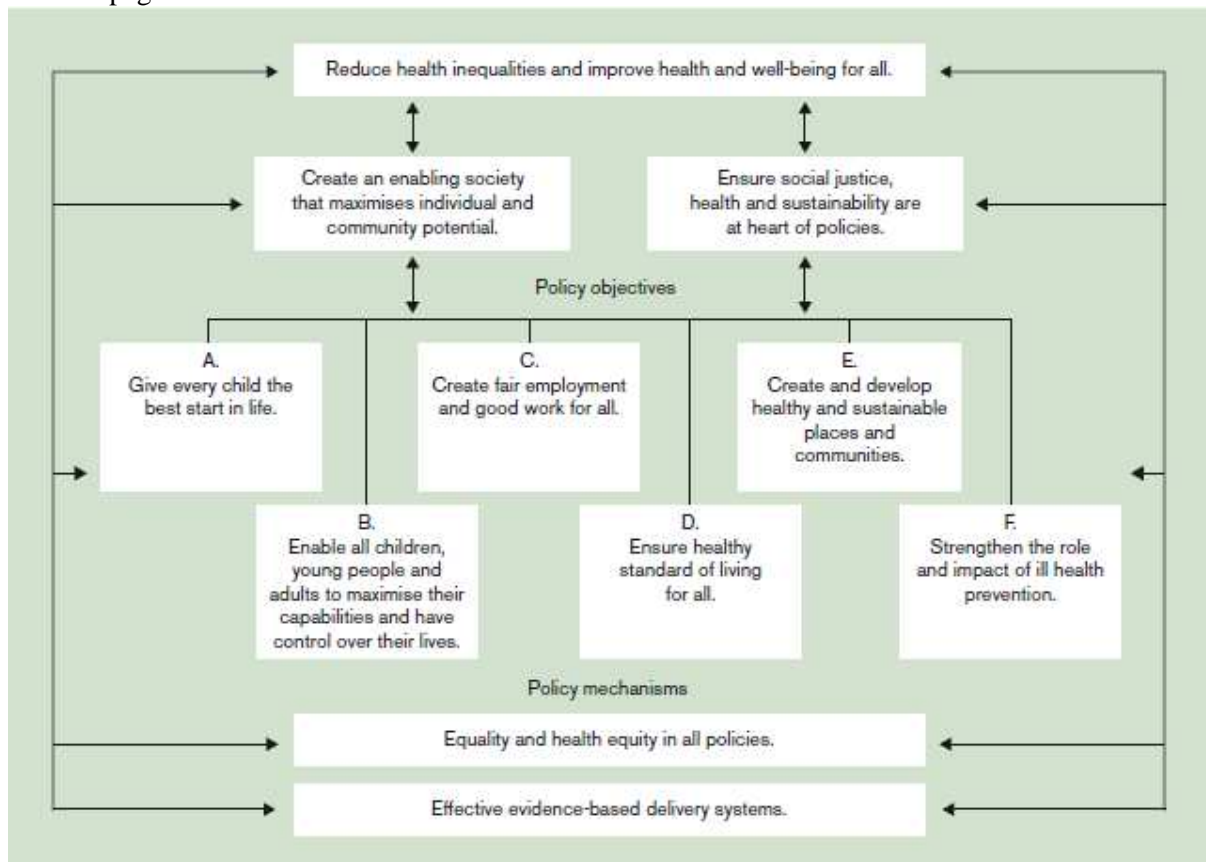
In the frame below lessons drawn of policies experiences in the UK are presented.

From recent policy experience the authors draw the next lessons (1):

- *Policies to tackle health inequalities must focus on the wider determinants of health: inequalities in early child development and education, employment and working conditions, housing and neighbourhood conditions, standards of living, and, more generally, the freedom to participate equally in the benefits of society.*
- *Policies, delivery systems and targets should tackle inequalities along the whole social gradient, rather than focus on specific segments of it: the emphasis has been either on downstream actions that affect only a small proportion of individuals, or on approaches that have a socially neutral impact at best*
- *Policies need to be cross-cutting at national and local level and spread over the usual organisational boundaries at all levels: too often action has been limited by organisational boundaries and silos*
- *Policies need to have longer time horizons and sufficient funding for those time periods.*
- *Policies need scale and intensity. Small-scale isolated projects cannot make sufficient impact, however effective they may be at a small scale.*
- *Strategies to reduce health inequalities should draw on the overlaps and synergies between different policy areas and not be developed in isolation.*
- *Strategies intervening in just one part of the social determinants will be insufficient to make the necessary difference to patterns of inequality. The scale of the challenge is significant.*
- *The experience so far suggests that the solutions to the above points are not straightforward for the disparate regions, cities, towns and villages across England.*
- *Geographic delineations of specific 'priority areas' have unintended consequences.*
- *Partnership working across a disparate and complex system involving separate organisations and often outside the experience of some of the key actors.*
- *Finally, while they separate national and local in the analysis of the issues, it is important that an integrated approach at national ad local level is adopted if synergy is to be achieved to secure the maximum impact.*

The authors state that to reduce the steepness of the social gradient in health, actions must be universal, but with a scale and intensity, that is proportionate to the level of disadvantage. Greater intensity of action is likely to be needed for those with greater social and economic disadvantage. However, focusing solely on the most disadvantaged will not reduce the health gradient, and will only

tackle a small part of the problem. If the conditions in which people are born, grow, live, work and age are favourable, and more equitable distributed, then they will have more control over their lives in ways that will influence their own health and health behaviours and those of their families. Based on these findings Marmot grouped his recommendations on six policy objectives. See the framework on the next page.



Out of The Marmot review. February 2010 (1)

The UK National Health Service Policy

Adler and Newman (10) discuss the provision of universal coverage in England in a paper. Universal coverage did not reduce inequalities in health. In England SES disparities in health widened after the establishment of the National Health Service (10).

La Protection Maternelle et Infantile and the French health and social policy programme

In a review of Schneider (9) findings are interpreted on the change of preterm birth rate in France: the programme 'La Protection Maternelle et Infantile.' The policy programme comprises a set of measures which aims to protect pregnant women, mothers and children until school age (i.e. diagnostic procedures, preparation of birth). The health and social policy programme to avoid preterm birth comprises free access to preventive examinations, information supply, training of health professionals, lifestyle counselling and financial support.

An effect or impact of the policies on the social gradient is described in context of the French programmes. The preterm birth rate in France has decreased since the beginning of the 1970s until the end of the 1980s. After 1988 the rate raised again especially due to a shift in the age structure of pregnant women and an increase of twin pregnancies. The social gradient in the frequency distribution of preterm births in the population has decreased but financial distress has still impact on the medical supply and has negative effects on the result of pregnancies. The care for women receiving financial

support from the government is clearly worse in relation to the average number of medical examines during pregnancy. Those women are more often hospitalised and have a higher risk of preterm birth in comparison with all pregnant women.

Gruppen- und Individualprophylaxe policy [policy on dental oral group and individual prophylaxis in Germany]

Dental oral group prophylaxis is conducted for all children in kindergarten and school in Germany. Dental oral individual prophylaxis takes place in cabinets of dentists. It concerns oral health, fluoridation and sealing of teeth.

The authors discuss the impact of changes in DMF-T (measurement of dental health; Decayed-Missed-Filling-Teeth) indicators found in different studies on oral health of the German population on social status and social stratum: As a consequence of the intervention especially DMF-T of German 12-14 year old children improved significantly between 1989 and 2005. Differences between social strata were remarkably reduced. Nevertheless the gradient between social strata persists. An interesting shift in dental health of children can be considered for the two parts of Germany. Dental health of 13-14 year old East German children was better than that of West Germans of the same age in 1991 and differences between social strata in this age group were smaller than in West Germany. Only several years later DMF-T of West German children was better than that of East German children of the same age group(7). The information on this study doesn't give reasons for these changes.

Kiel Obesity Prevention Study (KOPS)

KOPS started 1996 and runs until 2009 with a phase of reviewing after 8 years. The intervention was carried out between 1996 and 2001 yearly in 2-4 primary schools in 1st class. Schools were randomised into intervention and non-intervention schools. In this first 4year outcome-study, 1764 children aged 10 years were assessed in 32 primary schools. The prevalence, incidence, and remission of overweight were the main outcome measures. Within KOPS, family interventions were conducted in relation to nutritional status. Between 1996 and 2001 4997 5-7 year old children in Kiel were included in a study during school enrolment examination. A total of 1764 children aged 10 years could be re-examined 4 years later. Six nutrition units followed by 20-min running games were performed at school during the first year.

In children from families of high socio-economic status, the intervention had a significant effect on prevalence (odds ratio OR 0.35, $p=0.031$) and incidence of overweight (OR 0.26, $p=0.030$). Remission of overweight was most pronounced in children of normal-weight mothers (OR 5.43, $p=0.022$). There was no effect on obesity. Results showed that the middle BMI in children from lower SES groups increased. The programme influences the health of lower SES groups negatively. There is a need for social stratification of prevention measures respectively societal approaches (8). Causes of widening the gradient are not available from this study.

4.3. Policies in North America affecting the social health gradient

Women-Infants-Children (WIC) Policy

WIC provides Federal grants to States in the USA for supplemental foods, health care referrals, and nutrition education for low-income pregnant, breastfeeding, and non-breastfeeding postpartum women, and to infants and children up to age five who are found to be at nutritional risk. 'A multinomial logistic regression of trichotomized birth-weight categories was conducted on 'The

National Maternal and Infant Health Survey data' for 3 categories (normal, low, and heavy birth-weight) in relation to income, education, occupational grade, state-level income inequality, and length of participation in Women-Infants-Children (WIC).

'The National Maternal and Infant Health Survey data' were associated with the length of participation in Women-Infants-Children (WIC) for pregnant mothers. A socioeconomic gradient for low birth-weight was found out for an adjusted household income measure (11). WIC participation is associated with improved birth outcomes (12). The positive impacts of WIC are larger among subsets of even more disadvantaged women, such as those who received public assistance last year, single high school dropouts, and teen mothers {#70}.

4.4. Conclusions: policies and interventions affecting the gradient

The current knowledge and information about the impact of policies and interventions on the social gradient in health is limited. In only six references (1, 7-11) the impact of policies or interventions on the social gradient in health are described: five European and one American. The level of evidence of the findings is for five of the six references at best ranked at **, which means the references are based on randomized clinical controlled trials of low quality or insufficient size, or other similar research (quasi-experimental) and/or non-comparative studies (remeasurement in a single group) and/or expert opinion. Only one source is ranked at ***, due to the use of a control group.

Effective policies aiming across different SES groups and age groups of children

Five policies found are policies related to improvement of health services and one is related to a lifestyle programme. Policies outside the area of public health and welfare with a described effect on the social gradient in health were not found within this literature research.

Three of the five policies found describe measures specific for early childhood tackling the social gradient in health. The Marmot review describe policy measures along the life course. The authors of the review state it is important to give every child the best start in life (1). The German 'Gruppen- und Individual prophylaxe policy' and the French policies 'La protection maternelle et infantile and the French health and social policy programme' contribute effectively to the best start in life by reducing the social gradient in health for an early age group, respectively kindergarten and children aged -9mths until 5 yrs. The USA policy also contributes to the best start in live and aims to improve health of deprived groups as well: the USA policy aims on mothers in a deprived situation with children in the age of-9mths until 5 yrs and shows an impact on the social gradient in health.

However four mentioned policies have a positive effect on the social gradient in health one policy and one programme have an adverse effect. Implementation of the National Health Services in the UK widened SES disparities in health (10). This intervention is not specific aimed on children.

Also the Kiel Obesity Prevention study widened the social gradient in health by improving the BMI of higher SES children and increasing the BMI of lower SES children. This last intervention is aimed on children in the age of 5-13 years (8).

Although the findings are limited in size and in evidence level, the information available can give some leads for effective policies on the social gradient in health and for reasons for a differential impact of policies and interventions on health across different SES groups and age groups of children (and their families).

Leads for reasons for a differential impact on tackling the social gradient of health

The effective German and French policies are universal policies. The USA policy is targeted on deprived groups and is also effective on tackling the social gradient in health for early childhood. Both universal and targeted policies seems to be able to tackle the social gradient in health. However, the evidence out of literature is too limited to see if a targeted USA policy can also be effective on the social gradient in health in Europe. The health systems between the European countries and USA differ and may influence the impact. Out of Work Package five of the GRADIENT-project (comparative policy analyses by Elisabeth Fosse) it appears that politics matters in tackling the gradient in health.

The UK policy and the German KOPS is also universal, but widens the gradient in health. Other factors than scale seems also to be important. In the found references several factors of policies are mentioned which may influence the social gradient in health. Although these factors were not always described directly as reasons or causes for a differential impact, there seems some agreement between the authors on factors which may affect the gradient in health. These factors are:

- universal, but with a greater scale, length and intensity of action for deprived groups
- intersectoral approach,
- no specific priority areas
- integrated approach on national and local level
- focus on combination of social determinants
- disease, toxic exposure and injury.
- long term federal grants and sufficient funding
- financial distress
- poor medical care
- geography

These factors might be reasons for a differential impact of policies tackling the social gradient in health, but the available evidence is too limited to draw further conclusions. Theories and models tackling health inequalities may provide relevant other or consistent leads to reasons for a differential impact of policies and interventions on the social gradient in health. The authors of the Marmot review (1) state to reduce the steepness of the social gradient in health, actions must be universal, but with a scale and intensity, that is proportionate to the level of disadvantage. Thus, tackling health inequality can be seen as an important determinant of the social gradient in health. That's why in the next chapter theories and models on health inequalities are used to find more evidence on reasons for a differential impact.

5. Reasons for a differential impact on health inequalities

5.1. Introduction

In this chapter interventions and policies are described with an effect or impact on determinants of health inequalities based on theoretical models. These results can provide more leads and input for further research (focus group discussions) on a. underlying psycho-social, cultural and economic reasons for a differential impact of public health policies in different segments of the population and b. if and why children and families from different socio-economic groups respond and act differently to public health policy interventions

The theoretical models used are the ASE model and the Albeda model. These models provide two different angles to explain the differential impact of policies and interventions: the individual perspective (ASE model) and the intervention and policy perspective (Albeda model). Individuals of different groups can respond unintended differently on interventions and policies and cause a differential impact. On the other hand policies and interventions may have an unintended impact on health, health inequalities or health gradient. Within this literature research the researchers focused more on unintended reasons for a differential impact of policies and interventions than on unintended individual reasons (individual behaviour). Nevertheless, results on individual reasons in combination with health behaviour models can help us explain the differential impact of interventions and policies across different SES groups and age groups of children (and their families).

In the next paragraph the ASE model is explained and is used to describe the differential impact of policies and interventions on the individual level. In paragraph 5.3 the Albeda model is explained and is used to describe the unintended differential impact or effect of policies and interventions on health inequalities.

5.2. Reasons for a differential impact: the individual level

The ASE model is a theory to explain health behaviour (13). The model can be considered as an integration of ideas of Ajzen's Theory of Planned Behaviour, Bandura's Social Cognitive Theory, Prochaska's Transtheoretical Model, the Health Belief Model, and Goal setting theories. It is suitable for explaining relations between factors and helps us to categorise and explain the reasons for the different individual responses on interventions of policies across different SES groups and age groups of children (and their families). In this paragraph the results found are described per factor of this model.

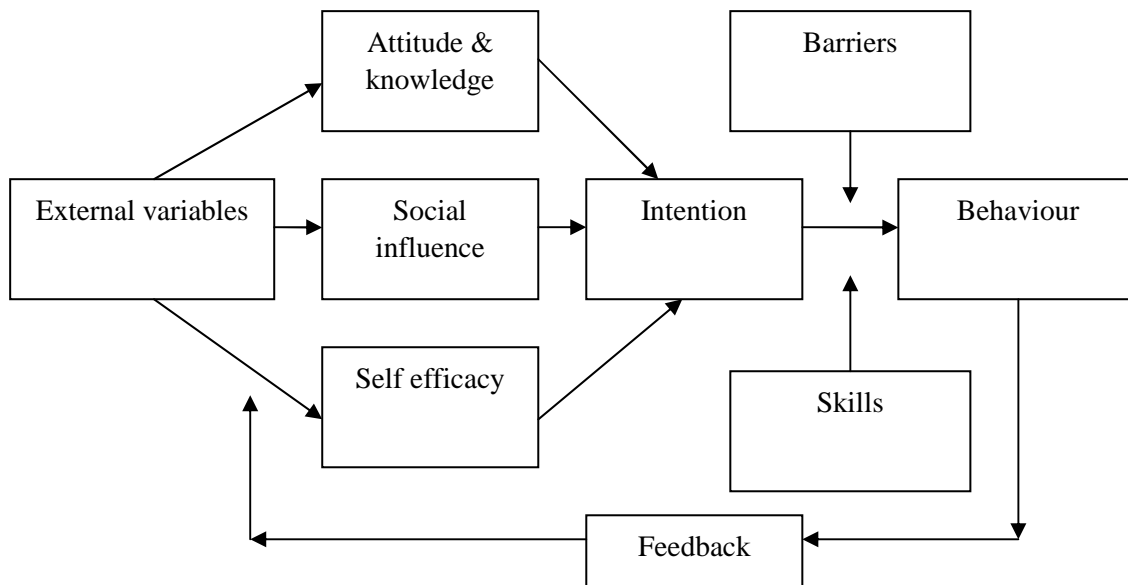


Figure 1: ASE-model, de Vries, 1998

The articles that are found describe the findings from different researches on the effects of socio economic position and health behaviour. In other words, the reasons why interventions and policies do or don't have an effect in different SES groups. Those findings are described and are linked to the determinants of the ASE model.

The level of evidence varies between large research programs and for example focus group discussions.

Participation in screening and vaccination

Research of Crockett, Wilkinson & Marteau (14) on participation in screening for possible diseases shows that participation is the least by those who are most socially deprived. See the next three examples:

'Politiques de sante concernant les deficiences et handicaps d' origine perinatale (Health policies concerning (prevention of) birth deficits (perinatal deficiencies and handicaps)

Pregnant women in France are entitled to certain social benefits. To receive these, they need to declare their pregnancy before the 15th week of pregnancy (amenorrhoea). Women who declare their pregnancy after the legal deadline (and thus do not receive benefits) more often live alone, are of lower SES (measured by employment category of themselves/partner if present) and are more often non-EU nationals. Less than the recommended amount of prenatal visits correlates to lower level of schooling, not having a profession/having a partner without profession, being a housewife, being younger than 20 or having been pregnant before. Not knowing whether a test was done is related to the woman's schooling level as well as to the SES, assessed by level of highest profession in the family. Woman with another ethnic background, lower SES level and education level more often didn't receive the same amount of prenatal exams. Often they did not know if they had a certain prenatal exam (15).

Calendrier vaccinal` (child vaccination calendar) of the Conseil Superieur d'hygiene publique de France (CSHPF)

Child vaccinations against tuberculosis, diphtheria, tetanus, and poliomyelitis are mandatory before entry into collective childcare or school. Vaccinations against pertusis (coqueluche/kinkhoest), measles (rougeole/mazelen), mumps (oreillons/ bof), rubella (rubeole/rode hond), haemophilus influenzae B and hepatitis B, are not mandatory but strongly recommended by the policy.

Confounders in this study may be the lacking of a control group and only adolescents who could present their health check results were considered.

The study first tested general immunization levels in the 3rd year of secondary school (14-15 yrs) tracing back immunization levels at different ages before that - indicating the differences between `zones d'education prioritaires (ZEP - low income areas where schools get extra funding - questionnaires were done in schools) and other areas, as well as differentiating according to family SES (by highest occupation).

87 % of the adolescents did get the first 4 injections. The extra injection was more frequently received in non-ZEP (higher income) areas than in ZEP-areas (low income) but there was no significant difference according to father's profession. However, at the limits of statistical significance, it does seem that children of `cadres` are at the lowest level of having had their `rappel`, followed by non-skilled workers. Looking at the first four injections, there is a lower vaccination level in ZEP zones and amongst children of `cadres` 4. Coverage varies with SES depending on age, the vaccine and tolerance of it (16).

Early diagnostic tests for children in the German school security code

The early diagnostic tests U1-U9 for children from birth up to 6 years are fixed in the German Social Security Code. They belong to the provisions of statutory health insurance and are for free. The first two tests are routinely carried out in the hospital of birth. Test U3-U9 are mostly carried out by paediatricians.

The early diagnostic tests U3-U9 are highly accepted within the whole population. (The tests U1+U2 were excluded from data collection). Use is over 90% in the first two life years until U7, it decreases slightly afterwards and falls to 86% for the use of U9. Significant differences regarding participation can be found especially between East and West Germany, social strata and migration status. Participation in U6-U9 is in West Germany higher than in East Germany. Families with a high social status have constantly high participation rates from 92-97% until U8 and of 89,6% in U9 whereas participation of families with a low social status decreases from 90,7% in U3 to 79,1% in U9. Use in families with a middle social status is similar as use in families with a high social status. Differences are even bigger regarding migration status. Only 81,3% of children from migrant families participate in U3. Only 67,9% of them participate in U9. 81% of all children participating in the survey participated in all early diagnostic tests, 16% of them partially and 3% did not participate at all. On the whole, children from families with a low social status and children from migrant families participated less regularly in U3-U9 (17).

The lower participation in screening and vaccination is a consistent finding across different screening programmes and healthcare systems. One of the explanations for this difference is a lack of material resources, such as transport costs to the health screening centre. However, the difference remain if in statistical analyses the lack of such resources is controlled for. For that reason the researchers tried to find other explanations.

Time orientation

Psychological characteristics, among other factors, contribute to explaining differences in participation in screening also. An example of psychological characteristic might be time orientation. Psychologists suggest that people use information within the timeframe an event occurs. Individuals have preferences for a present or a future time orientation. Those who have a future orientation think more about the future and are more aware of the effects of current actions on future outcomes, compared to

those who have a lower future orientation. People who are more orientated on the present, think more about immediate outcomes of their behaviour.

Socially deprived people are more present orientated, which is associated with low participation in screening: they tend to focus more on the immediate harms than on benefits in the future. For example breast screening with mammography has a number of substantial possible immediate harms. In 2001 five percent of mammography screens in the US gave false positive results leading to further testing, which can be unpleasant.

In this context the development from the historical public health approach in screening to the informed choice approach in screening is interesting. In the historical approach only the benefits of participation have been emphasized. Nowadays the policy is moving towards an informed choice approach in which both benefits and harms of participation are included. The study of Crocket et al.(14) showed however that giving information about harms of screening can reduce the participation of the socially deprived. This can be related to the different time orientation of the socially deprived and thus be a factor why this group respond differently to policies and interventions. According to this study, the attitude towards time is different in SES groups and this can have an impact on participation in screening.

Attitude to health (services)

Recent research in the UK, the North West Project (18), shows that individuals living in a deprived area like North West region do not see the national health service (NHS) as a primary source of help when it comes to lifestyle issues. Instead, 64% believe that it is their own responsibility to look after their health if they get ill. The individuals who did see their general practitioner mainly made an appointment for an illness certification for benefit claims and mainly for their children, rather than being prompted by their own health needs. There seems a lack of awareness that the NHS can play a role in tackling lifestyle health issues at an early stage. However, when asked what was important for the respondents, the value of family was significantly ranked above health in order of importance. The respondents recognise their responsibility to take care of their health, but would not approach the NHS for guidance. Instead 54% turn to family to look after them when they are ill.

Out of the North West Project (18) it appears that besides the lack of awareness of the role the NHS can play in lifestyle issues, and the preference of family helping out, the respondents think they are significantly healthier than they are. For example, 26% were clinically obese (BMI > 30) yet only 7% recognized they had overweight and 81% of those questioned said that watching TV was the most common social activity (versus 33% go to the park and 7% play a sport/use gym) (18). This low health awareness may explain why people with lower social economic status respond differently to interventions and policies.

The North West Project made another important factor clear, social influence. Community and lifestyle references play a significant role in shaping of self perception. The people who were questioned, made observations relating to their health based on the people and lifestyles around them. For example 56% of smokers believe their health is about the same as others in the local area (18). Social influence plays a role in participation and shaping self perception. A supporting environment may influence the reaction to interventions and policies.

The North West Project (18) showed a few key barriers for health and a healthy lifestyle. Lacking money (54%), laziness (52%) and genetics (20%) were most frequently cited as the top three barriers to having a healthy lifestyle.

Health is recognised by the respondents as a key driver to live longer. Of those questioned 17% realise that they need to be healthier and 21% know they need to eat more healthier in order to live to the age they aspire to. However, of the respondents who smoke heavily 40% said that they do not worry about

their health at the present time and 46% of the clinically obese patients are not currently trying to lose weight.

Use of folic acid

In a Dutch study among pregnant women (19) the researchers investigated the differences in folic acid use between individuals with a low socioeconomic status and a high socioeconomic status. The most obvious difference between the two groups was the fact that low SES women took less value in prevention and preventive behaviour. These women reported they are less motivated to act in a preventive way because they have heard of people who lived healthy but nevertheless got sick.

The attitude to their own health and lifestyle of the socially deprived and how they (want to) deal with health problems seems to be different compared to groups with a higher social economic status. This may be another reason for why socially deprived respond differently to policies and interventions.

Participation in sports of adolescent girls

A study of Casey, Eime, Payne & Harvey (20) showed the importance of social influence in participating in sports for adolescent girls. The method used in the study was a focus group discussion. The participants primarily reported health benefits and social benefits as important outcomes of participation in sport and physical activity.

A factor discussed by most participants was the need for sports and physical activity to be fun. Fun was often associated with being able to participate with their friends. Another positive influence was that the activities were supported by families and teachers through role modelling and positive feedback. Support by parents through for example driving the child to the sports activities appears also to be an important factor.

Reported barriers for sports participation are: peers tease, play too rough and are too competitive; boys exclude girls from sports/activities.

Smoking behaviour

In a review study on smoking behaviour (21) the researchers concluded that low SES people have less self efficacy on quitting smoking. Besides that the respondents reported they had little willpower caused by their lower life standard. For example, when there isn't enough stability, people can't quit smoking. Empowerment can be an important tool to give this target group more control over their lives and their health behaviour. This lower perception of self efficacy may influence the way low SES people act to interventions and policy on smoking.

Conclusions: individual level

In this paragraph psychological determinants have been presented which can explain the difference between low ses and high ses groups in health behaviour. The attitude of low ses groups towards health is different than in high ses groups. The low ses group is more orientated on the present time, they think less about how their behaviour influences their health on the long run. They also wouldn't ask for help on tackling health problems.

The research also showed that low ses groups took less value in preventive behaviour. This was partly a result of lack of knowledge on the influence of behaviour on health. Knowledge can also be a key factor in the awareness of their behaviour. The low ses groups in one project, thought they were healthier than they really are. They had a low health awareness.

Another important factor that influenced low ses people in their health behaviour was the social influence. This is also an important factor among young people. Other factors that were mentioned

were, lack of money, laziness and genetics. Another study on smoking behaviour showed that low ses people didn't had enough willpower to quit smoking. This was caused by their lower life standard. These influencing factors may lead to a differential impact of policies and interventions on the health gradient or health inequalities.

The determinants that are summarized above can be categorised as barriers for health behaviour. When we look at it the other way around we can talk about the skills people need in health behaviour. Some of the determinants mentioned here could be categorized by the term health literacy. Health Literacy is the ability to make sound health decision in the context of every day life – at home, in the community, at the workplace, the health care system, the market place and the political arena. It is a critical empowerment strategy to increase people's control over their health, their ability to seek out information and their ability to take responsibility.

Health Literacy encompasses four key dimensions:

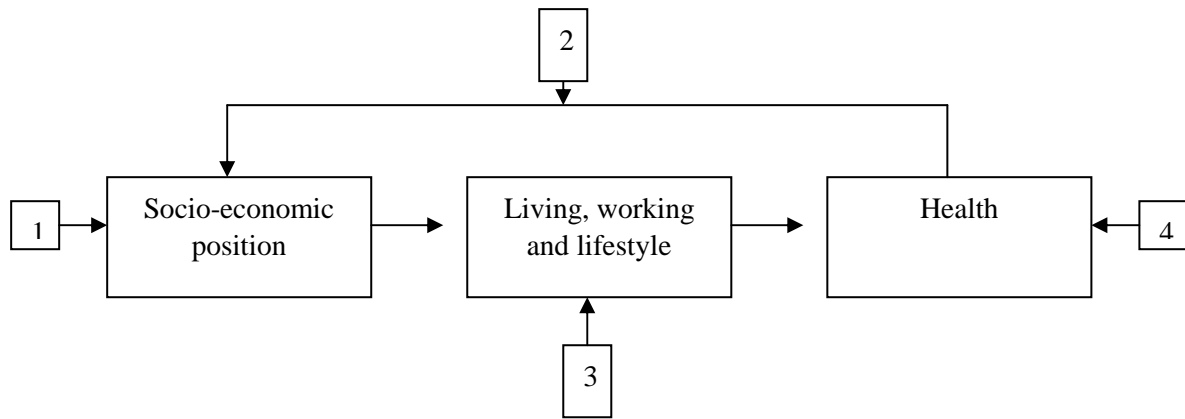
- 1) Basic health knowledge, knowledge and the application of health promoting, health protecting and disease preventing behaviours, as well as self and family care and first aid.
- 2) Competencies to navigate the health systems and act as an adequate partner to professionals.
- 3) Consumer competencies to make health decisions in the selection and use of goods and services and to act upon consumer rights if necessary.
- 4) Informed voting behaviour in the political arena, knowledge of health rights, advocacy for health issues and membership of patients and health organizations (22).

5.3. Reasons for a differential impact: policy and intervention level

In this paragraph reasons for a differential impact on health inequalities are presented on a policy and intervention level. The Albeda model(23) helps to organise the found policies and helps to explain the link between policies, interventions and the contribution to the reduction of health inequalities. The commission Albeda organised the causes of deprived health in a model based on different international theories (e.g. Dahlgren and Whitehead). In this model four different perspectives are leading.

1. reducing differences in social economic position (e.g. income, occupational grade, education)
2. reducing negative effects of health problems on income, occupational grade, education.
3. improving specific determinants of health across lower social economical groups (e.g. living and working conditions)
4. improving the access to health care and effectivity of health care for lower social economical groups.

This model uses the point of view that the influence of the social economical position on health, links indirectly to specific determinants such as work and living conditions. The model below shows the different (in)direct links between the policies and determinants.



1. Policies on income, occupational grade and education can in theory reduce the differences in social economic positions and has- in theory- a positive effect on health and health deprivation via the next mechanism (according Dahlgren and Whitehead) (23):

- An appropriate and finished education means that people develop their knowledge and skills which improves the chances of getting a job. They also develop the ability to deal with a variety of issues, including those in the field of health. An example is that educated people are more likely to choose healthy behaviour than less educated people.
- A paid job means that people have means to have access to proper housing, heating, power supply, etc.
- Training, occupational grade and income have a positive impact on the well-being and social inclusion which is accompanied with health of people.

2. Reducing negative effects of health problems (23)

Health may influence the socio-economic position in positive or negative sense. Health problems in youth may lead to a lower socio-economic position in adulthood than in his or her ability at the beginning.

3. Socio-economic differences in the level of exposure to factors such as an unhealthy lifestyle, poor living conditions (moisture, cold, noise, fumes, unfavourable working conditions) (physical hard work, lack of line capabilities) and difficult social conditions (lack of social support, lack of social cohesion) are partly responsible for the deterioration in the quality of health of people in disadvantaged positions (23). In deprived neighbourhoods, compared to other neighbourhoods, there are less often favourable environmental conditions such as green and security in the area and good and sustainable dwellings. Inhabitants of deprived neighbourhoods tend to a less healthy lifestyle. The school is a good setting for large groups of children and young people when it comes to health promotion and disease prevention. Already at an early age, there are differences in lifestyle to school type: students on which participate in studies with a lower education level behave more unhealthy than pupils who participate in studies with a higher education level (23).

4. The accessibility of care (in financial, geographical and socio-cultural sense) affects the use of care and thus the health of people. Whitehead (1991) defines equal accessibility as "equal access and equal use of care in equal need" (23).

The four different perspectives of the model offer a comprehensive structure and explanation for the link to health inequalities in relation to the other found policies and interventions in this review.

Based on the Albeda model a distinction can be made in the type of policies and interventions found.

These types are:

- Interventions and policies on improvement of the social economic position,
- Interventions and policies on reducing negative effects of health problems,
- Interventions and policies on improvement of living conditions
- Interventions and policies on improvement of the access of health care.
- Mixed type of interventions and policies

Improvement of social economic position (1)

Improvement of social economic position is one of the determinants to reduce health inequalities. See the Albeda model. Social economic position is associated with education and income which results in certain living and working conditions. Better education and income generally are accompanied with better health. Policies aimed at reducing inequalities in education and income have in theory a positive effect on health and deprived health and may reduce the health gradient. In this part of the paragraph six policies and interventions related to education and income are presented.

Educational policies and interventions: pre school and early school education

Dutch 'Preschool and early school education programme'

With the Dutch 'Preschool and early school education programme' the ministries, municipal government, schools and child care aim to prevent/reduce deprivation in linguistic development of children in the age of 2 until 6 years. The education starts in day care or nursery school and ends at primary school. Children with a high risk on linguistic deprivation and/or children which are deprived in linguistic skills are the target group (23). Examples of interventions as a result of this policy are Piramide, Kaleidoscope, Opstap(je).

Piramide aims to stimulate the development of children from 2.5 to 6 years, so that they are able to complete the primary school successfully. *Kaleidoscoop* is an educational program for children from 2.5 to 6 years, based on the American high/Scope-program. *Opstap(je)* focuses on children in the age of 4-6 years in deprived situations. Opstap(je) provides home learning supplies and a special trainer who visits the family ones in two weeks to instruct the parents.

A review of Blok 2003(23) describes that interventions that are related to children centres (e.g. Piramide en Kaleidoscope) do better than home based programmes (e.g. Opstap). A combinations of home based and centre based programmes is also effective. Effects are accomplished on the short term on the cognitive level and when a parenting component is a key component. After the programmes the effect fades out. The continuity and a long period of educational support has no effect on the results.

US federal funding for early childhood interventions

The US federal funding for early childhood intervention provides funding to states to support full- day, high-quality early child education beginning at 6 months of age and continuing until the start in kindergarten and also establish standards for such education. Head Start, the Perry Preschool Project and other existing (state-sponsored) programs could be transitioned into this program. The rationale for this policy is that racial/ethnic and socioeconomic disparities in education are powerful determinants of disparities in health. Educational disparities by social disadvantage, for example, race, ethnicity, and income, emerge prior to kindergarten. Early child education has been shown to

ameliorate school readiness disparities and improve outcomes across the life course. Head Start and the Perry Preschool Project provide suggestive evidence that early educational experiences may confer long-term benefits (10). Thus, early child intervention represents a necessary condition for eliminating disparities in education. Doing so would have far-reaching effects on health disparities according to Fiscella (24).

Educational policies and interventions: school policies and interventions

Dutch policies to reduce early school leaving

There are several Dutch programmes which aim to prevent early school leaving, such as: a covenant with regional organisations to reduce school drop out, programmes to restructure schools, programmes that support pupils who tend to drop out (e.g. mentoring programs or ad hoc training), programs with elements of financial incentives, combinations of mentor programs and financial incentives (23). These programmes are aimed at pupils with a high risk to drop out or pupils who already dropped out. There's little information available on the effects or impact of the Dutch programmes aimed on high risk to drop out or pupils who already dropped. There is one Dutch study found about the effect of the covenant. In order to reduce the number of dropouts in the school year 2006-2007 the Dutch government has offered a financial incentive scheme to 14 out of 39 regions. This scheme provides a reward of 2000 euro per prevented dropout in 2006-07. The target of the scheme was a reduction of the total number of school dropouts by at least 10 percent in one year. There was a modest decline in the probability of dropping out in the 14 covenants regions. However, the decline in the non-covenant regions was equally large. Therefore there was found no significant effect on the probability of dropping out in the post-covenant year. In both regions, the number of dropouts has fallen by 3 percent in the year after the covenant. This nationwide decline can be largely assigned to changes in the student populations among the pre-and post-covenant year.

Prevention of early school leaving on high school

Out of an international effect study of Van der Steeg and Webbink, 2006 (23) appears that interventions aimed at students who has not yet been dropped out has a limited positive impact on the study achievements and subsequent on the labour market position. Causes for the limited impact of several international interventions are derived from twenty American studies. These causes are limited knowledge on the causes of early school leaving (expertise and use of data) and the multiple problems of the pupils (sensitive to diversity) which makes early school leaving inevitable (23).

The empirical international literature shows that dropout can be reduced by positive financial incentives for students, teachers or schools. A couple of intensive and sustained mentoring programs targeted on the social development of students at risk has also proven to be effective. Only one of these interventions is evaluated on health related effects. Big brothers / big sisters is a programme in the United States in which adults volunteer to coach/ play a role model for pupils in the age of 10-16 year from single parent families reduces school drop out, drug and alcohol abuse, aggression and increase the rates of the pupils (23).

Income policies

The US Earned Income Tax Credit

The US Earned Income Tax Credit is an example of a federal policy which has raised the income of working-poor families cutting the stipend level for recipients, while welfare reform in general has pushed in the opposite direction(10). According to Adler and Newman, this policy should at least in theory have traces in health outcome through a redistribution of resources.

A research of Arno e.a. (25) examined whether the earned income tax credit (EITC), an income support programme, also improves health and access to care. They presented preliminary analyses suggesting that such a relationship does exist: 75 percent of the mothers in the target population who were not eligible for the credit, reported that all of their children lacked health insurance coverage. In contrast, among mothers who were eligible for the credit, 54 percent reported all of their children lacked health insurance coverage. Arno e.a. (25) described that studies have demonstrated that among children, health insurance coverage is strongly associated with improved access to primary care and more specifically are more likely to be in fair or poor health. Arno e.a. (25) found a statistically significant inverse association between EITC penetration and infant mortality also: each 10-percentage point increase in EITC penetration (within or between states) is associated with a 23.2 per 100 000 reduction in infant mortality rate (P=0.013). Confounders which have to be taken into account while suggesting a potential EITC influence on infant mortality are state-level poverty and employment rates and the concurrent changes in social welfare programs other than the EITC that varied by state.

Income supplements for single parents in Canada

In Canada single parents who started working fulltime were given income supplements on assistance at home. Out of a randomized clinical trial appeared that the supplements did help to increase employment and income in the experimental group. Of children who are 3-8 years at baseline they reported better health and cognitive functioning. However, if these children were younger at baseline, there are no effects and there were negative effects reported when the children were older at baseline (10).

Reducing negative effects of health problems (2)

The second entrance point to reduce health inequalities is reducing negative effects of health problems. Health related school drop out can lead to an education gap and eventually to early school leaving. This educational gap influences the social economic position and may influence health (see the Albeda model). Health problems are in turn more common among people who already have a relatively low socio-economic position, and these groups are particularly vulnerable when it comes to the negative consequences of health problems. In this part of the paragraph two local policies are presented which aim to reduce negative effects of health problems in high school.

Reducing school absence

Policies by municipal health services

'Since 1996, the municipal health service of West-Brabant in the Netherlands carried out an intervention on schools: guidance by a paediatrician for students who tend to drop out because of health problems. The main aim of this intervention is to identify high school students who are often absent because of health problems in an early stage in order to supply compulsory education, advice and assistance if necessary. The second aim is to reduce absence of these students. In the process and impact assessment on the school year 2004-2005 Dijkmans and Augustijn, 2005 (#7) reveal that 95% of the disease-absent students (n = 735) have received advice and assistance by the paediatrician. In many cases, there were health problems, in only 6% of the cases an education official was needed. No long term effects were measured.

Another programme to reduce school absence is an intervention on high schools structurally implemented in the city of Utrecht, by the municipal health service. The aim of this intervention is to

get the students, which are more than average absent due to health problems, in contact with the youth health care in an early stage. This project is part of a set of measures for the prevention of school failure on lower secondary schools. An process and impact assessment by Van Bergen, 2005 {#7} shows that in three years, six hundred students are examined. The objective to set up an early detection and support for risk students is largely met. More than three quarters of the students who needed extra care or guidance received it within two to three months. The absence registration of schools showed that for 73% of the pupils the illness was stopped or reduced in the period after the examination by the JGZ. Long-term effects on the prevention of school failure are not examined (23).

Improving lifestyle, poor living conditions and difficult social conditions (3)

Improving the lifestyle, the living conditions and work environment is in the Albeda model directly related to health. These paragraph presents six policies, targeted on deprived groups, with a described effect on these determinants.

Lifestyle

Health promoting schools

Schools health approach is a common and integrated approach to support schools in the development and implementation of school health policy. The method is a systematic and bottom up approach. Schools can stepwise develop, for example, a health profile of the students, set priorities and select health interventions and include these in the school policy. Within this approach individual and collective prevention and care is linked. Collaboration of relevant local organisations are part of the approach (23).

On international level little is known on the evidence on health inequalities. The way the programme is carried out is diverse and most of the time studies focus primarily on interventions in the school setting. However, there is some evidence on integrated approaches of health at schools. An integrated approach, like Schools health approach, can make a positive contribution to the health and healthy behaviour of students(23).

Dutch policies of the ministries of education (OCW) and ministry of health (VWS)

Interventions within the OCW and VWS activities are Actie Tegengif and Jump- in. Actie tegengif tries to prevent smoking and promotes smoking cessation in youth. Jump- in is an intervention which promotes daily physical activity in deprived neighbourhood. JUMP- in is effective on fysical activity and is targeted on children with a lower socio economical background. Actie tegengif is effective on the number of children who start smoking on the short term(23).

Living and social conditions/Social environment

Parental impact of fruit and vegetable consumption

A longitudinal study in which 896 adolescents from two different Norwegian counties are questioned: (may 2002 and may 2005) fruit and vegetable intakes where assessed with food questionnaires. Socio economic status was based on the parents report of education and income level. According to the study the perceived accessibility of fruit and vegetables in the household has the main impact on the consumption of the adolescents besides income and influences of family and friends(26).

Goede voeding hoeft niet veel te kosten (food budgetting)

‘Goede voeding hoeft niet veel te kosten’ is an element in a Dutch budgeting course and is obligatory to clients in the debt relief. There are two meetings within this programme: one about healthy foods and one about food budgeting (reading food labels and comparing quality and price). The course for people with a lower social economical status has a non seasonal significant negative effect on consumption of saturated fat and fruit juices(27).

Access to healthy food in the USA

In a report of Truehaft and Karpen (28) a summary is given of the current knowledge about food deserts (availability of healthy food) and their impacts on communities in the USA. In a bibliography a total of 132 studies are found: Sixty-one published in peer reviewed journals and primarily conducted by university-based researchers and 71 conducted by practitioners or policy researchers, sometimes in collaboration with academic researchers, and self-published (also known as “grey literature”). The studies include three nationwide analyses of food store availability and neighbourhood, city, county, regional, statewide, and multistate analyses covering 22 states across the country. The evidence is clear that many communities in USA—predominantly low-income, urban communities of color and rural areas—lack adequate access to healthy food, and the evidence also suggests that the lack of access negatively impacts the health of residents and neighbourhoods. In neighbourhoods with more coloured and lower income groups there are less supermarkets and there is a lack of health, high quality foods in the available stores. Besides that there are in areas with low income zip codes 30% more convenient food stores than in middle income zip code areas.

The findings indicate that policy interventions to increase access to healthy food in “food deserts” will help people eat a healthy diet, while contributing to community economic development.

Improvement of the access or effect of health care (4)

The fourth point of entrance to improve health or health inequalities is the access to health care (see Albeda model).

Measures using the association between the log of family income and children’s reported health status show that income gradients in children’s health status are larger in the US than in England. A possible explanation for this findings is that English children have equal access to high quality health care, whereas poor American children receive less and/or lower quality health care (29). Besides that it appears that individuals living in states with a higher ratio of primary-care-physician to population are more likely to report good health than those living in states with a lower ratio (30). In this part of the paragraph four policies, interventions or studies with an impact or effect on the access of health care are described.

Continuous health insurance

The United States Children’s Insurance Program, Medicaid

There is a gradient between greater insurance disruption and less access to care, less utilization, and greater unmet medical need. Increasing numbers of disruption are associated with less routine care and greater unmet medical need(31). Children who are experience short spells of uninsurance (1-4 months) are less likely to have an usual source of care and are more likely to experience delays in needed care than those with continuous private or public insurance. The consequences are much worse if children are uninsured for longer periods because they are less likely to receive preventive care or visit a doctor during the year, which make them more likely to experience delay in receiving medical care and prescriptions than those with continuous coverage.

State Children's Health insurance Programme in California and the Medicaid programme are examples of programmes which both seem to ensure the levels of health care access similar to that obtained by children with year round private coverage (32). These policies for deprived groups improve the access to health care.

Improve access to high quality health care

Federal funding to develop a patient-centred medical home (PCMH) within Federally Qualified Community Health Centers (FQHCs)

The rationale for the US federal funding to develop PCMH within FQHC's is that socially disadvantaged patients face far greater health risks than other groups, but ironically face far less access to high-quality health care. Primary care has been shown to improve population health and reduce disparities. However, primary care delivery and funding have not kept pace with advances in medicine. This gap disproportionately affects socially disadvantaged patients who have greater and more complex health needs. Enhancing primary care within sites serving large numbers of socially disadvantaged patients could substantially improve access to high-quality care for these patients and reduce disparities in outcomes (24)

Fiscella (24) describes that FQHCs currently serve a substantial proportion of socially disadvantaged patients in the United States. One quarter of all patients living in poverty, one in seven of the uninsured, one in nine patients receiving Medicaid, and one in ten minority patients are served. Existing data show that FQHCs reduce disparities in care and outperform other sources of care at lower expense.

Improving the access of primary health care in deprived neighbourhoods.

As a result of a Dutch national policy targeted on integrated health care (2004) primary health care providers, patient organisations and health care insurance organisation signed a petition for improving integrated health care. Improving integrated health care comprises health care centres, suited for deprived neighbourhoods, and attracting health care providers towards deprived neighbourhoods by setting up new health care centres with nurse practitioners or physician assistance who can deliver extra support. To attract or keep general practitioners in the deprived neighbourhoods the involved organisations provided higher wages for working in deprived neighbourhoods and set up a fund to support GP's and other health care providers in deprived neighbourhoods. Besides that they organised financial support for midwives: extra raise with 23% of wages in deprived neighbourhoods since 2008. Little is known on the effects of these means. Only the help of nurse practitioners seems to be effective on the access of health care in deprived neighbourhoods (23).

Ethnic health care advisors

Ethnic health care advisors were introduced in four districts of Amsterdam, The Netherlands. Health care advisors work for all health care and welfare services and their main task is to provide information on health care and welfare to individuals and groups and refer individuals to services. HC advisors reached many inhabitants (n=2224). Half of them were referred to health care or welfare services. In total 576 classes were given. These were mostly attended by Moroccan and Turkish females. Outreach activities, office hours at popular locations, direct contact with a well organized back office and the commitment among professionals seems to be important success characteristics for actually reaching ethnic minorities (33).

Mixed type of instruments

There are two policies found which tackle a combination of determinants of health inequalities.

These are the 'Whole school approach' and the 'Czech National Programme of Health.'

Whole school approach

The whole school approach is a common international approach which combines education with features for example, in the area of care, care, wellness, sports and culture. There is not a standard set of features available for the whole school approach. The programme depends on the local circumstances and needs. In some areas it is therefore more focused on support on deprived neighbourhoods than in other areas, where the emphasis is on improvement of the day care.

Brown (23) points out that universal approaches, like the whole school approach, may be reducing social inequity. Only the right methods to prove this are lacking.

Brown (23) relates a psychotherapeutic theory to health inequality. Security, comfort, status, power, and enjoyment are reasonable things to want. Some of these things have been defined as prerequisites for health. They only become a social problem when people need more than their fair share of these resources. Psychotherapeutic theory suggests that people need more than their fair share of power because they feel powerless. They crave security because they do not feel safe. They need more than their share of status because they do not value themselves and the contributions they are making to society. It therefore may be a lack of emotional and social well-being among the rich that drives social inequity. It is curious that in considering interventions to reduce health problems related to inequity, the focus is always concentrated on the poor. Refocusing attention on the wealthiest social classes potentially could return a significant dividend with respect to improving the health and social well-being of all people across all social classes. This would be achieved by universal approaches to solving social inequity. Systematic reviews of these mental health promotion programs in schools suggest that they work better when they take a universal or whole-school (cross-curricular) approach.

Czech National Programme of Health

The Czech National Programme of Health, included the specific budget of the Czech Ministry of Health (in 90's about 35 million of Czech crowns, last year about only 7 millions) for grant system of health promotion projects. Four different intervention regarding differential impact were carried out:

1. People with regular home versus homeless and 2. healthy eating of Czech majority versus Romany minority population with special emphasis on Romany schoolchildren: resulted both in improvement of nutritional and hygienic habits

3. Cope with stress in complete versus incomplete families (esp. single mothers): 75 incomplete families (mostly single mothers and their child/children) participated in the project. From the data follows that the level of state as well as trait anxiety and the stress level decreased significantly with the number of activities in which subjects participated. Comparison of new participants data with "more advanced" participants data showed that the state anxiety, trait anxiety as well as the stress symptoms level were significantly higher in the group of new participants.

4. Nutritional status of pre-school and school children from Czech and Romany families: using questionnaires, the authors assessed in 98 families to what extent it proved possible to influence attitudes and knowledge. The results can be divided according to three groups of respondents: group 1 - employed families, relatively well off, group 2 - irregular employment, partly depending on social allowances, group 3 - socially least privileged, depending on social allowances.

Group 1 - 65% of the respondents reacted positively to recommended changes. They restricted sweet beverages, smoked meat products, increased the intake of semi-skimmed milk and dairy products etc. Their reaction to further lecture programmes concerned with healthy nutrition was also positive.

Group 2 - a change of attitudes and habits was recorded in 18% of the respondents: mainly restriction of sweet drinks, increased consumption of fresh fruit and vegetables and whole grain cereals.

Group 3 - in this group (17% of respondents) practically no shift towards healthier dietary habits was observed (34).

Conclusions: policy and intervention level

In total twenty policies and/or interventions are found with a described effect on one of the four determinants in the Albeda model, influencing health of deprived groups and health inequalities (10, 23, 24, 28, 33, 35, 36).

In this part of the paragraph general conclusions are drawn, followed by some leads for reasons of the effect or impact according to the researchers.

Policies and interventions influencing social economical status

Six different policies are presented, tackling the lower social economic status of the target groups which affect their health or health inequality between groups. Social economic status can be improved by education and income. The educational policies with a described effect target at three different age groups: pre school and early school (age 6 mnths-6yrs), lower secondary school (age 12-16) and high school (age 17-22). The income policies are targeted on families to improve their financial situation.

Pre school and early school education

Dutch and USA pre school and early school education policies like Piramide, Kaleidoscoop, Opstapje, Head Start and Perry Pre School project are able to improve the educational level of children out of deprived groups. The Dutch programmes are able to improve the cognitive level, language level and social economic behaviour (23) on the short term. The continuity and a long period of educational support has no effect on the results. However, evaluation of American programmes on early child education like Head Start and Perry Preschool Project suggest that children may benefit of the programme across the life course and may reduce disparities in education (10, 24, 35, 36).

Bases on these findings leads for reasons for differences in effect can be found in the fact that interventions related to children's centres do better than home based interventions (23). Combinations of these interventions are also effective on the cognitive level on the short term and when a parenting component is a key component, according to a Dutch review of Blok 2003 (23). Another possible reason is the timing of the education. Early educational experiences may confer long- term benefits (10, 24, 35, 36).

Prevention of early school leaving

Prevention of early school leaving is also an important tool in the improvement of social economic position. The effects of this kind of interventions were modest. There was no effect of intervention for the lower secondary school.

Interventions aimed at students in high school who has not yet been dropped out has a limited positive impact on the study achievements and subsequent on the labour market position (23). The empirical international literature shows that dropout can be reduced by positive financial incentives for students, teachers or schools. A couple of intensive and sustained mentoring programs targeted on the social development of students at risk have also proven to be effective.

Bases on these findings leads for reasons for the effect on early school leaving and the labour market position may be financial support, the intensity and sustainability.

Income policies

Targeting at income is also a way to improve the social economic position. The US earned income tax credit policy and the Canadian incentive policy for single parents influence respectively the access to health care and the cognitive level and health. The US income policy had an effect on the number of children who got health insurance and there was an association between this income policy and infant mortality. Health insurance is different for every country. In some countries it is obliged to have an insurance which causes a very different effect. However, a health gradient exists through all countries with different health systems and different types of health insurance(10). The Canadian incentive policy for single parents for assistance at home is only effective for a specific age groups for children (3-8 yrs). For older children even negative effects were reported.

These results suggest that the health system and age group of children may be reasons for different effect of policies.

Reducing negative effects of health problems

Two policy programmes are found which reduce negative effects of health problems. The policies aims to guide students who tend to drop out because of health problems in an early stage. In theory these programmes may affect the educational level and social economic position which result in better living and working conditions and better health on the long term. However, long-term effects on the prevention of school failure are not examined, only for one of the policies positive effects are measured on drop out. The absence registration of schools in Utrecht, The Netherlands, showed that for 73% of the pupils the illness was stopped or reduced in the period after the examination by the JGZ (23). This programme was aimed to tackle the problems in an early stage, which might be a reason for an effect.

Improving lifestyle, living and social conditions

Five policies and interventions are presented which aims to improve lifestyle and/or the living and social conditions. Three policy programmes have a described effect on lifestyle. All found lifestyle programmes are a combination of educational and health policies and are aimed on elementary schools. The other three programmes aims to improve (or provide information on) the access to healthy food and improve the living conditions.

An integrated and common approach for schools, like ‘Schools health approach,’ can make a positive contribution to the health and healthy behaviour of students(23). The Dutch intervention ‘Actie Tegengif’ is also related to schools and is effective on the number of children who starts smoking. One of the school related Dutch programmes is targeted on deprived groups. JUMP- in is effective on physical activity and is targeted on children with a lower socio economical background (23).

On international level little is known on the evidence of these school approached on health inequalities. The way the programmes are carried out is diverse and most of the time studies focus primarily on interventions in the school setting.

The two interventions aimed on improving the living and social conditions are targeted on deprived groups. People of low SES are confronted with all kind of problems. For example having debts and lower access to healthy food. In the USA, in neighbourhoods with more coloured and lower income groups there are less supermarkets and there is a lack of health, high quality foods in the available stores. Besides that there are in areas with low income zip codes 30% more convenient food stores than in middle income zip code areas. Living in a deprived neighbourhood means less availability of healthy food (28). The access to healthy food doesn’t mean only the availability of healthy food and

convenient stores. A Dutch effective programme links a budget course to healthy eating. People within this course showed an improvement in the level of saturated fat and use of fruit juices in their diet. Not only the real accessibility play a role in the lifestyle of people. The Norwegian study showed that the perceived accessibility of fruit and vegetables in the household has the main impact on the consumption of the adolescents besides income and influences of family and friends(26).

Access to health care

Four policies are described with an effect on the access of health care for deprived groups. The access of healthcare is a subject that is very much linked to the countries health system e.g. the health insurance system. Also health policies have to meet the needs for all groups in society to provide equal access to health care. Three policies are found aimed on adapting health care to meet the specific needs of deprived groups. One of these policies is US federal funding for Enough and suitable health care centres in deprived neighbourhood. Existing data show that FQHCs reduce disparities in care and outperform other sources of care at lower expense (24). The help of nurse practitioners seems to be an effective measure to improve the access of health care in deprived neighbourhoods in the Netherlands(23). Outreach activities, office hours at popular locations, direct contact with a well organized back office and the commitment among professionals seems to be important success characteristics for actually reaching ethnic minorities (33).

Mixed type of instruments

One conclusion that certainly can be made is the fact that health behaviour is difficult to influence. To accomplish change, you have to effect a lot of different determinants. Two policies programmes are aimed on a mix of determinants: 'the whole school approach' and 'the Czech National Programme of Health'. The Czech programmes improves health on the long term (34). Qualitive research shows that the whole school approach can be effective on social competencies of children, enforcement of the relation between schools and parents and schools and other organisations on sports, culture and welfare. Refocusing attention on the wealthiest social classes potentially could return a significant dividend with respect to improving the health and social well-being of all people across all social classes (23). This could be achieved by universal approaches to solving social inequity, like the whole school approach.

6. Overall findings: reasons for a differential impact

6.1. Introduction

As shown in chapter 4 the findings on the differential impact of policies or interventions on the social gradient in health are limited in number (n=6), size and evidence level. To have more leads for reasons for a differential impact and a basis for further research in work package three, the researchers divided the evidence found in two levels:

1. Literature on interventions and policies with an impact of effect on the social gradient of health (n=6).
2. Literature on determinants of health inequalities (n=29).
 - a. Individual level (n=9)
 - b. Policy and intervention level n=20)

In this chapter the found reasons for a differential impact are presented on the different evidence levels.

Reasons for a differential Impact on the social gradient of health (1)

Based on the six described policies or programmes (1, 7-11) the next reasons for a differential impact are found:

- universal, but with a greater scale, length and intensity of action for deprived groups
- intersectoral approach,
- no specific priority areas
- integrated approach on national and local level
- focus on combination of social determinants
- disease, toxic exposure and injury.
- long term federal grants and sufficient funding
- financial distress
- poor medical care
- geography

These factors might be reasons for a differential impact of policies tackling the social gradient in health, but the available evidence is too limited to draw further conclusions.

Reasons for a differential impact on health of deprived groups or health inequalities (2)

Theories and models tackling health inequalities provide relevant other or consistent leads to reasons for a differential impact of policies and interventions on the social gradient in health. The authors of the Marmot review (1) state to reduce the steepness of the social gradient in health, actions must be universal, but with a scale and intensity, that is proportionate to the level of disadvantage. Thus, tackling health inequality can be seen as an important determinant of the social gradient in health. That's why theories and models on health inequalities are used to find more evidence on reasons for a differential impact.

Based on the ASE-model and Albeda model 29 policies and interventions are found tackling health inequalities. Based on these policies and interventions the researchers found the next psychosocial, economic and cultural reasons for an differential effect :

Individual level:

Barriers for health behaviour for lower SES groups are (14, 16-22)

- the attitude of low ses groups towards health is different than in high ses groups.
- the low ses group is more orientated on the present time
- low ses groups took less value in preventive behaviour.
- there is a lack of knowledge on the influence of behaviour on health.
- low health awareness.
- social influence.
- lack of money, laziness and genetics.
- less willpower to change behaviour, caused by their lower life standard.
- lower health literacy

Policy and intervention level:

Based on the interventions and policies found (10, 23, 24, 28, 33, 35, 36), factors which may influence the impact on health inequalities across children and families across different SES groups are:

Positive factors

- interventions related to children's centres or combinations of these interventions with home based interventions, when a parenting component is a key component,
- timing of the education. Early educational experiences may confer long- term benefits
- financial support, the intensity and sustainability of the support
- the health system: continues health insurance
- tackle the problems in an early stage
- meet the needs for all groups in society to provide equal access to health care.
- Outreach activities, office hours at popular locations, direct contact with a well organized back office and the commitment among professionals seems to be important success characteristics for actually reaching ethnic minorities
- Aimed on different determinants.
- refocusing attention on the wealthiest social classes
- universal

Barriers

- the age group of children
- living in a deprived neighbourhood
- having depts and lower access to healthy food.
- perceived accessibility to healthy food
- universal

These findings on the different two levels are input for further research within work package 3 of the Gradient-project. These factors are input for discussion in focus groups.

7. Discussion

This literature review on causes of an unintended differential impact of public health policies has been undertaken as step 1 in the work of Workpackage 3 of the EC project Tackling the Gradient: Applying Public Health Policies to Effectively Reduce Health Inequalities amongst Families and Children. Researchers from the Netherlands institute for health promotion (NIGZ) took the lead in this work with contributions of researchers from Sweden, Spain, Czech and Eurohealth net.

With respect to tackling the health gradient, six sources have been found. These results didn't show hard evidence on the health gradient. However, by including also sources focusing on the effects of the determinants of health inequalities, interesting information has been found. These results also didn't gave a lot of hard evidence, but they gave leads for further research in the next stage of the work of Work Package 3.

Through the process it turned out to be difficult to work with the concept of the Health Gradient and to find sufficient scientific sources Besides, the issue of the concept of Health Gradient and inclusion and exclusion criteria, there are some other points for discussions:

- During the research, we could find a lot more interesting policies and interventions on health inequalities, however most of them have not been evaluated (process neither effect). A lot of policies and interventions which are evaluated, are not evaluated on the impact on the Gradient. Mostly they were evaluated on the effect on health inequalities. However, there was a lack of long term evaluations. Besides that the quality of the evidence is limited.
- To select the literature we used an online analyse tool, which was based on the policy grid. Because of this tool, we could involve the other partners in our research on an equal basis. The other side of such a tool is less control on the analyses and the content of the information filtered.
- Also because of the discussion points mentioned above, the quality of the findings was different and sometimes hard to compare.

Overall we have tried to balance between an academic approach and a pragmatic approach. Which led to a review that gave enough information and results to lead us to the next steps in Work Package 3. In the next steps, project leaders and policy makers will be interviewed and focus groups with the target group will be arranged in order to get more in depth information on the success factors and barriers on the uptake and/or impact of various (public health)policies. Results from this review will be very worthwhile input for the interview guide and the focus group discussions and will be taken forward in this next stage. For example, the recommendation, as mentioned in the Marmot report (2010), that to reduce the steepness of the social gradient in health, actions must be universal, but with a scale and intensity, that is proportionate to the level of disadvantage is a lead which is worthwhile to be further investigated through interviews and in focus groups. Information on individual factors for the uptake of policies/interventions could be important input for decisions with respect to scale, intensity etc. of universal policies. Outcomes of the interviews and focus groups in combination with the results from this review will be published at the beginning of January 2011 in a report on the analysis of differential uptake and success factors and barriers for effective uptake.

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Appendix 1: Glossary

Health

Health is a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity.

Health is a resource for everyday life, not the object of living and is a positive concept emphasizing social and personal resources as well as physical capacities.

Reference: Health Promotion Glossary, WHO, 1998; taken from Ottawa Charter for Health Promotion. WHO, Geneva, 1986

Health Determinant

A health determinant is a force or element that affects health, either positively or negatively. Health is determined by both intrinsic forces, such as genetics, behaviour, culture, habits and lifestyles, and extrinsic forces such as preventative, curative and promotional aspects of the health sector, as well as elements outside the health sector including:

- Economic factors, such as trade
- Social factors, such as poverty
- Environmental factors, such as climate change
- Technological factors, such as information technology

Reference: EC Expert Group on Social Determinants and Health Inequalities. Health Inequalities Glossary. Background document, 7 May 2007

Health (or Social) Gradient

The association between socioeconomic position and health across the whole population.

Reference: PAHO/WHO self-instructional course on social determinants of health

In whatever way health is measured, there tends to be a gradient on which the most socially and economically advantaged group have better health and well-being, and lower rates of illness and death than disadvantaged groups. In western societies, the shape of the gradient tends to be relatively smooth with mortality and morbidity increasing, and self-reported health and well-being decreasing steadily as social disadvantage increases. Over time, the gradient as a whole tends to shift upwards because overall the health of most groups is improving. However, the degree and rate of improvement tend to be greater in higher social groupings, meaning that relative differences, and therefore the degree of inequities and inequalities, also tend to increase.

Adapted from NICE – PUBLIC HEALTH GUIDANCE

The gradient strategy involves comprehensive efforts intended to impact on the health of the entire population, including groups in different social strata. Some examples are actions against violence and traffic accidents, the improvement of work conditions and areas (smoking), or the fight to improve environmental conditions. In general, these efforts may be more costly and take longer, making it impossible to monitor health outcomes in the short run.

Reference: PAHO/WHO self-instructional course on social determinants of health

Social Gradient Gradient in Health Inequalities

Gradient of Risk Health Gradient

Health Inequalities

Health inequalities are measurable differences in health experience and health outcomes between different population groups – according to socioeconomic status, geographical area, age, disability, gender or ethnic group. Inequality is about objective differences between groups and individuals measurable by mortality and morbidity.

Reference: DETERMINE project, 2007; taken from Whitehead M. The concepts and principles of equity and health. Copenhagen, WHO Regional Office for Europe, 1990.

Or/and

Differences in health status or in the distribution of health determinants between different population groups. For example, differences in mobility between elderly people and younger populations or differences in mortality rates between people from different social classes. It is important to distinguish between inequality in health and inequity. Some health inequalities are attributable to biological variations or free choice and others are attributable to the external environment and conditions mainly outside the control of the individuals concerned. In the first case it may be impossible or ethically or ideologically unacceptable to change the health determinants and so the health inequalities are unavoidable. In the second, the uneven distribution may be unnecessary and avoidable as well as unjust and unfair, so that the resulting health inequalities also lead to inequity in health.

Reference: EC Expert Group on Social Determinants and Health Inequalities. Health Inequalities Glossary. Background document, 7 May 2007; taken from HIA Glossary. Accessed at <http://www.who.int/hia/about/glos/en/index.html>

(Public) Health Policy

A formal statement or procedure within institutions (notably government) which defines priorities and the parameters for action in response to health needs, available resources and other political pressures.

Reference: Health Promotion Glossary, WHO, 1998

Or/and

Health policy is often enacted through legislation or other forms of rule-making which define regulations and incentives which enable the provision of health services and programs, and access to those services and programs.

Reference: EC Expert Group on Social Determinants and Health Inequalities. Health Inequalities Glossary. Background document, 7 May 2007; taken from European Observatory on Health Systems and Policies Glossary. Accessed at: <http://www.euro.who.int/observatory/glossary/toppage>

And:

Given the fact that “a high level of health protection” ought to be secured “in all EU policies” (art 152 EC Treaty) and given that the EU’s Health Strategy for 2008-2013, “Together for Health”, aims to strengthen the integration of health concerns (including use of Impact Assessment and evaluation tools) into all policies at Community, Member State and regional levels, we consider as public health policy, any public policy, originating from any level or government or any department of that level of government, which influences (*AIMS TO INFLUENCE*) the population’s health.

In addition, we define a “traditional public health policy” as a health policy originating from the “health department” at the relevant level of government.

Public Health

The science and art of promoting health, preventing disease, and prolonging life through the organized efforts of society.

Reference: Health Promotion Glossary, WHO, 1998; adapted from the “Acheson Report”, London, 1988

Differential impact

Definition will follow on website in glossary

Differential uptake

Definition will follow on website in glossary.

Socio-Economic Group (See also Socio-Economic Status or S.E.S)

Socio-economic status (SES) is a term that describes an individual or family's relative position in society. This relative position is operationally defined by indicators such as educational attainment, occupation, income and house or car ownership. These variables are therefore considered to provide a good indication of the likelihood that they will be exposed to health damaging factors or possess particular health enhancing resources.

Reference: Glossary for the DETERMINE project, 2007; taken from Lynch J and Kaplan G. Socioeconomic position. In: Berkman L and Kawachi I (eds.) *Social Epidemiology*. Oxford University Press, 2000

Description of a person's position in society which uses criteria such as income, level of education achieved, occupation, value of property owned etc.

Reference: EC Expert Group on Social Determinants and Health Inequalities. Health Inequalities Glossary. Background document, 7 May 2007; taken from National Institute of Health and Clinical Excellence. Public Health Electronic Library. Accessed at <http://www.phel.gov.uk/glossary/glossary.asp>

Appendix 2: Search terms

In order to develop consistency in method and search strategy within the GRADIENT, search terms are based on the review of Davies e.a. in WP2 and the work plan of WP4. To identify the differential impact of health policies in several age segments within the population of children (and their families), it is necessary to identify differential effects of policies and interventions on certain SES groups and age groups within a population. Therefore the first phase of the literature search focused on evaluations of the differential effect of policies and interventions. If there was little literature available on the differential effects, studies about effects on determinants of health were searched and sorted by effects on determinants of health across different age and SES groups.

The search terms are described in the table below. Box one describes the more general search terms on policies tackling the health gradient. For each search term from box one, search terms from box two will be added. Further specification and limitation of findings takes place by adding search terms from box three and/or four. The boxes below are just a tool to find the literature in a systematic way. It depends on the language and the findings in which way you have to combine the search terms.

Table 1: search terms

Box 1: consequences	Box 2: health	Box 3: target population	Box 4 : health determinants
Impact, Differential impact	Health gradient, Social gradient	Children and families	Social determinants of health
Effect, Differential effect	Health inequality* Health inequity*	Family, Young families	Reasons, Causes
Effectiveness	(Public)Health policies Health equity polic*	Child: Early childhood, Middle childhood, Adolescence, Young adults, School aged children, young people, infants antenatal, prenatal, postnatal, newborns, toddlers, preschoolers, puberty, pregnant women, pregnancy....	Economical determinants: income, poverty, (un)employment,
Evaluat*	Public health	Socio-economic group, Socio- economic status, S.E.S. Social class, social group, social status, occupational class, educational attainment, parents' education, parents' occupation,	Cultural determinants: customs, traditions, beliefs, religion

Box 1: consequences	Box 2: health	Box 3: target population	Box 4 : health determinants
Uptake Differential uptake	Polic* , Social welfare policy, Welfare state regime		Psycho-social determinants: (social) status, (social) support, (supportive) networks, (social) networks (social) relations* , (social) cohesion, (social) capital (Social) exclusion, (social) isolation, (social) participation, (social) engagement, stigmatization, discrimination, racism, education, training, coping skills job insecurity, psychosocial stress, resilience
			(Environmental determinant:) Environment, Physical environment, Built environment, Green space, Nature, Housing, Neighbourhoods,
Monitoring, Assessment			(Behavioural determinants:) exercise, physical (in)activity, leisure activities, hobbies, recreation, bicycling, cycling, pedestrians, walking sidewalks, sports Food (un)healthy food, 5-a day feeding behaviour, food

Box 1: consequences	Box 2: health	Box 3: target population	Box 4 : health determinants
			habits, food labelling. food preferences. fruit and vegetable consumption, fruits, vegetables, nutrition Alcohol, alcohol abuse, Smoking, smoking cessation

As described before, the first phase of the literature search will focus on the differential impact and uptake of (health) policies. If necessary search terms from box 2, 3 and 4 will be added. In box 4 determinants of health are described. Those terms will be added to the search if required. When there are little evaluation studies available on the differential impact of health policy and interventions, the search will focus on effects of policies and interventions on health determinants. As described in the objectives of WP3 the search can be limited to economical determinants, psycho-social determinants and cultural determinants. If we focus on these terms only, we exclude for example literature about policies concerning improvement of living conditions, accessibility and effectiveness of healthcare. On the other hand the literature search is more limited and probably more realistic in time perspective. The NIGZ project team suggests to decide on this after the first broad search. We will first find out what could be found and then decide where to focus on.

Appendix 3: Gradient analyse grid

An overall framework/grid (draft) is developed with members of the different Work Packages within the GRADIANT (see Appendix 2). The framework gives insight in the (possible) differential uptake and (possible) effect of different types of (health) policies aimed at different age segments of children and their families, within the societal context. The societal context shows possible trends, news, demography, economy, culture (eg. concepts of health), politics (eg. welfare state type) which may effect the uptake and impact of (health) policies.

Every Work Package within the GRADIANT will focus on a different part of the framework (Gradient Policy Grid). Work Package 3 focuses on the differential impact/outcome of (health) policies with respect to the health gradient. When possible the effects will be sorted by determinants of health. The framework of WP3 will show which (type of) policies have positive or negative effects on the health gradient. It also shows the policies which are effective on certain age segments and SES groups. Where possible, further relevant information about the societal context will be taken into account (see Gradient Policy Grid). We expect this combination of information- type of policies, positive/negative effects, age segments- will lead us to a selection of health policies with a differential impact and hypothesis for the causes of the differential impact. The type of policies with effects across the life course are selected to discuss in focusgroups, the next fase of this review. If further selection is necessary experts are consulted. When possible, results from WP2 (indicators for evaluation) are used to select the effective policies for further discussion.

Appendix 4: Online analyse tool

“GRADIENT-project WP3”

1	Reference Please fill in te literature reference; authors, title, source, place, organisation, date, (e-link and access date)	Open vraag (groot)
----------	--	-----------------------

2	Reference type	Multi-level vraag
----------	----------------	----------------------

- Systematic review
- Review
 - Grey literature
 - Scientific resource
- Study
 - Grey literature
 - Scientific resource
- Published expert opinion
- Other...

3	How relevant is this policy or intervention (or source) considering the differential impact on the health gradient across different SES groups and age groups of children (and their families)? Please use the slider to specify how relevant the policy or intervention is in your opinion. On the left means it is total irrelevant, on the right is total relevant.	Slidervraag
----------	---	-------------

- irrelevant
- relevant

4	Name of policy or intervention/title of relevant source	Open vraag (groot)
----------	---	-----------------------

5	Describe the intervention or policy (or the relevant information) in a few sentences.	Open vraag (groot)
----------	---	-----------------------

6

What is the aim of the intervention or policy (or other instruments)?
Think of the overall aim of the policy or intervention (or the relevant information).

Vinkvraag
(multi
response)

Minimaal aantal vinkjes: 1

- Reducing health inequalities
- Improving health of risk groups
- Improving health of deprived groups
- Tackling health inequalities
- Tackling the health gradient
- Other...

7

What is the target population?

Multi-level
vraag

- Children
 - 9 mth -0 yrs (pregnancy)
 - 0-5 yrs (early childhood)
 - 6-11 yrs (middle childhood)
 - 12-18 yrs (adolescence)
 - 19-29 yrs (young adulthood)
 - Other..

- Families
- Family member(s)
- Schools
- Leisure activities
- General population
- Other...

8

What type of instrument is used?

Multi-level
vraag

- Policy
 - Improvement of socio economic position
 - Education
 - Income
 - Working class
 - Other...

-
- Improvement of participation in society
 - Financial support for preliminary schools
 - Financial support for sport- and leisure activities
 - Other...
 -
 - Improvement of living conditions
 - Improvement of acces of health care
 - Improvement of effect of health care
 - Intervention
 - Improving education
 - Improving of income
 - Improving lifestyle
 - Improving of living conditions
 - Improving participation in society
 - Improving access to health care
 - Improving effectiveness of health care
 - Other...
 - Other...
 -

9

Which type of policy or intervention is used?

Multi-level
vraag

- Health/non-health
 - Health policy or intervention
 - Other policy or intervention
 -
- Universal/targeted
 - Universal
 - Targeted
- Direct/indirect
 - Directly aimed at children
 - Directly aimed on families as a whole
 - Indirectly via family members
 - Indirectly via school
 - Indirectly via leisure activities
 - Other...
 -
- Other...
 -

10

What is the policy or intervention level?

Vraag
(single
response)

- EU
- National [>> 11. Which country carried out this policy or...]
- Regional
- Local
- Other...

11

Which country carried out this policy or intervention ?

Vinkvraag
(multi
response)

Minimaal aantal vinkjes: 1

Vraagvoorwaarde actief

Vraag 10.0

(What is the policy or intervention level?)

Antwoord WEL gegeven: **National**.

Indien niet voldaan spring naar: 0. Volgende vraag

- Sweden
- Spain
- Germany
- France
- Czech Republic
- The Netherlands
- UK
- USA
- Canada
- Australia
- Other..

12

In which way is the policy or intervention implemented?

Vraag
(single
response)

- Upstream (bottum up)
- Midstream
- Downstream (bottum down)
- Other..

13

What is the method of evaluation?

Describe in a few sentences in which way the policy or intervention is

Open
vraag

14

What is the impact/outcome of the policy?

Multi-level
vraag

- Immediate: health literacy, social support, law, rules, finances
 - Health literacy
 - Social support
 - Law/rules
 - Finance
- Intermediate: effect on health indicators
 - Economical indicators
 - Poverty
 - Income
 - (Un)employment
 - Other...
 - Cultural indicators
 - Customs
 - Traditions
 - Beliefs
 - Religion
 - Other...
 - Psycho-social indicators
 - Education
 - Social status
 - Social support
 - Psycho social stress
 - Other...
- Long term: equity in health, health gradient
 - Tackling health inequalities
 - Tackling the health gradient
 - Improving the deprived health of groups at risk
- No known effects
- Not evaluated
- Other...

15

Describe the differential impact of the policy or intervention.

Open
vraag
(groot)

16

What is the level of evidence?

Level of evidence for articles about effectiveness of interventions (or in this case policies):

A1 Systematic reviews of at least two studies of A2 level, where the results of the primary studies are consistent;

A2 Randomized clinical controlled trials of good quality and size (randomized, double blind, controlled);

B Randomized clinical controlled trials of low quality or insufficient size, or other similar research (quasi-experimental)

C Non-comparative study (remeasurement in a single group);

D Expert opinion, for example out of focus group discussions

Level of evidence:

**** Based on at least one review of A1-level, or at least two independent studies carried out on A-level.

***Based on one study of A2-level, or at least two independently carried out studies of level B

** Based on one study of level b, or c.

* Published opinion of experts or opinion from, for example, focus group discussions.

Vraag
(single
response)

- ****
- ***
- **
- *
- Other...

17

Which proces indicators (might have) influenced the impact/outcome?

Those indicators are possible confounders, succesfactors or barriers which may affect the differential impact on the health gradient.

Multi-
level
vraag

- Systematic approach
- Use of mixed methods
- Intelligent use of (epidemiological) data
- Intersectoral collaboration
- Participation/empowerment of target group
- Leadership
- Managerial and governmental support
- Expertise
- Continuity
- Ownership
- Accessibility
- Sensitive to diversity

Other..

18

Contextual factors

Please answer the following questions about the contextual factors what may influence the differential impact.

Tussenpagina

19

In which continent is the policy or intervention carried out?

Vinkvraag
(multi
response)

Maximaal aantal vinkjes: 4

- Europe
- North America
- Oceania
- Not clear
- Other..

20

What concept of health is relevant for the policy or intervention in this country or continent?

Vinkvraag
(multi
response)

Minimaal aantal vinkjes: 1

- Salutogenic
- Holistic
- Not clear
- Other..

21

In what type of political system is the policy or intervention carried out?

Vinkvraag
(multi
response)

Minimaal aantal vinkjes: 1

- Liberal
- Corporatist
- Social Democratic
- Not clear
- Other..

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