



European
Commission

Health Equity Pilot Project (HEPP)

*Scientific report on evidence based
interventions to reduce socio-economic
inequalities in diet and physical activity*

Introduction



INTRODUCTION

Prepared for the Health Equalities Pilot Project

Peter Goldblatt

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INTRODUCTION

The intention of the Health Equity Pilot Project (HEPP) is to maintain focus on and mainstream action on health inequalities. This forms a basis for and is complementary to work on developing the new Joint Action on Health Inequalities in 2017. This is being achieved by focusing work on health inequalities related to the major policy themes of nutrition, physical activity and alcohol.

This report provides an update on the scientific evidence on the status of health inequalities in Europe relating to the following determinants of health:

- Nutrition and diet in the first 1000 days
- Nutrition and diet beyond early years
- Physical activity (and sedentary behaviour)

In each case, reviews of the literature were conducted on the **impact and efficiency of policies and actions** on health inequalities related to these lifestyle determinants, including evidence on the **effectiveness and efficiency of interventions** in reducing inequalities as well as the existing **behavioural economics** literature.

Topics covered

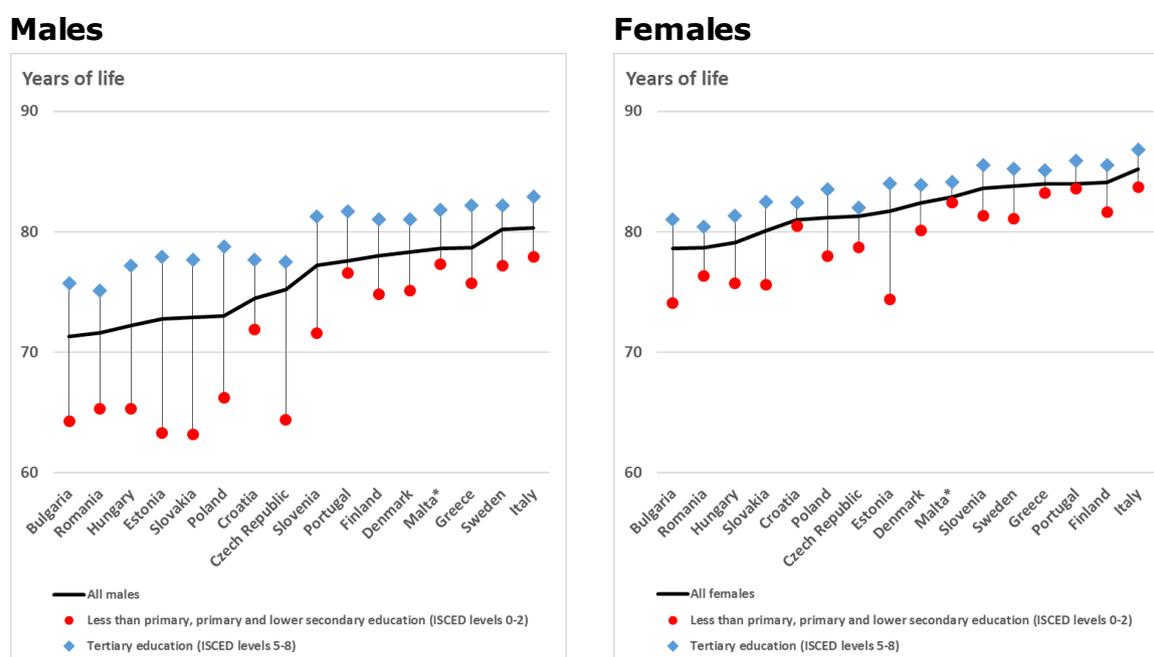
1. Nutrition and diet in the first 1000 days
 - Socio-economic status and breastfeeding up to 6 months
 - Socio-economic status and childhood obesity at different ages
2. Nutrition and diet beyond early years
 - Socio-economic status and adult obesity
 - Socio-economic status and salt (sodium) consumption
 - Socio-economic status and *trans* fats consumption
 - Socio-economic status and sugar-sweetened beverage consumption
 - Socio-economic status and fruit and vegetable consumption
3. Physical activity (and sedentary behaviour)
 - Socio-economic status and physical (in)activity
 - Socio-economic status and access to green spaces
 - Socio-economic status and active travel (walking and cycling)
 - Geographic indicators of deprivation and adult obesity
 - Geographic indicators of deprivation and childhood obesity
 - Geographic indicators of deprivation and physical (in)activity
 - Geographic indicators of deprivation and traffic speed (and traffic calming measures)

Social determinants of health inequalities

In 2008, the World Health Organization (WHO) Commission on Social Determinants of Health (CSDH)¹ concluded that social inequalities in health arise because of inequalities in the conditions of daily life and the fundamental drivers that give rise to them: inequities in power, money, and resources. They argued that social and economic inequalities underpin the determinants of health: the range of interacting factors that shape health and well-being.

There are marked differences in the social determinants of health across EU Member States and inequalities in health between social groups based on these determinants. Figure 1 illustrates the extent of inequalities in life expectancy according to level of education in 16 Member States. Inequalities between these 16 Member States are considerable for the population as a whole (9 years difference in life expectancy for males and more than 6 years for females). In general, the lower the level of overall life expectancy in a Member State, the larger is the level of inequality in life expectancy within that Member State. Furthermore, differences between Member States are even greater among those with least education compared to the population as a whole (more than 14 and 9 years, respectively, for males and females)².

Figure 1 Life expectancy at birth by education and sex, 2013



Source Eurostat (demo_mlexpedu)

* Note: Figures for Malta are for 2011

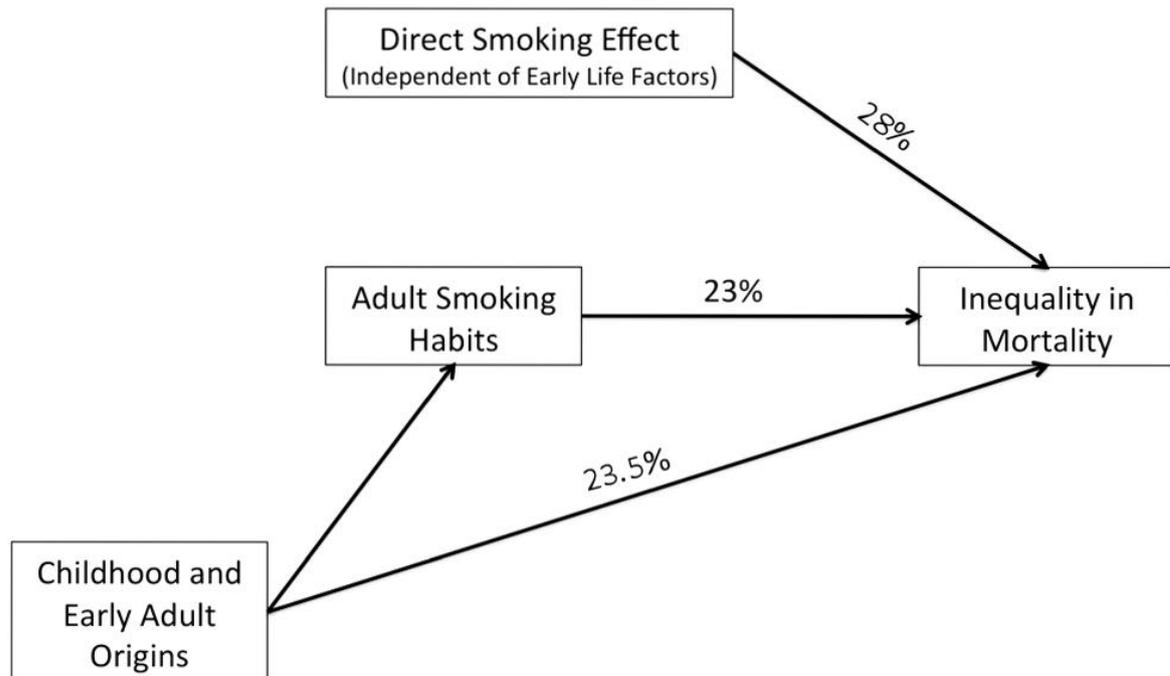
Recent analyses of health inequalities and their causes in Europe have supported the findings of the WHO CSDH¹ that social inequalities in health

arise because of inequalities in the conditions of daily life and the fundamental drivers that give rise to them. These include associations between risk factors for health, including tobacco use and obesity³, and socio-economic circumstances^{4,5}. This reflects the influence that lack of control, stress and reduced capabilities — all strongly associated with social disadvantage — have on both health and health-related behaviours, such as the proportion of people smoking or who are overweight or obese^{3,6,7,8,9,10}.

There are many stressful factors that an individual will experience over their lifetime. These include adverse childhood experiences, material deprivation at any stage in life, debt, adverse psychological conditions in the workplace (such as imbalances between effort and reward or between demand and control), insecure employment, unemployment, and social isolation. Capability reflects the ability that people have to achieve the kind of lives they have reason to value¹¹. This is constrained by many factors – including their social, emotional and cognitive development in early years, their ability to partake in and benefit from education, and their material circumstances¹.

For these reasons, the relationship between behaviours, social conditions, and health outcomes is complex. Social conditions can have a direct impact on health outcomes, for example by adversely affecting stress hormones in the body or by restricting subsequent job prospects⁷, or they can create the conditions for adverse health behaviours, for example in people who have no reason to value the lives they lead¹¹. Conversely, adverse health behaviours can be influenced by factors other than social adversity and stress, such as peer group pressures, advertising, and other socially specific contexts¹². In this way, they can lead directly to raised levels of adverse health outcomes in social groups. These multiple pathways are illustrated in Figure 2, which is based on follow-up of a cohort born in 1946.

Figure 2 Life-course pathway from early life origins to inequality in mortality mediated by smoking, follow up of the 1946 birth cohort study



Source: Giesinger I, et al. J Epidemiol Community Health 2013¹³

Member States with lower levels of social protection tend to have higher rates of self-reported bad or very bad health. This association is greatest among those with lower levels of education^{14,15}.

A number of other key socio-economic determinants also vary across the EU, such as income distribution and unemployment levels, which help to explain inequalities between Member States. Of particular concern for health is the variation in long-term unemployment, the proportion with education levels at lower secondary level or below, and those suffering material deprivation⁵.

Policy context

The European Commission issued a major communication on health inequalities in 2009 'Solidarity in health: reducing health inequalities in the EU'¹⁶. This followed a resolution, passed by the World Health Assembly¹⁷ on reducing health inequalities through action on the social determinants of health and urging its Member States to take action.

The Commission communication outlined the extent of the challenge of health inequalities and set out a range of actions to address them. This initiative has been taken forward by the Commission and Member States in a number of ways, including a joint action by Member States and the EU which concluded in 2014¹⁸.

The EU Health Programmes¹⁹ have supported a number of studies on health inequalities. There has also been support for the development and exchange of information on addressing health inequalities through the EU programme for employment and social solidarity²⁰. The European Commission has also set out a goal to support Member States to reduce the gap in health between the Roma and the general population, as part of overall Roma integration²¹. More recently the European Parliament has funded this pilot project and one on vulnerable populations²².

There have been a number of improvements in data availability in the EU enabling the assessment of health inequalities. These include several years of data from the EU Statistics on Income and Living Conditions²³, which allow assessment of self-perceived level of health by income, education and level of deprivation as well as lifestyle and behaviours. Mortality data also allow comparison at regional level within the EU²⁴. Some EU Member States have also supplied data on mortality by educational level (see Figure 1)²⁵.

Wider recent developments have included the publication of a health strategy for the WHO European Region, Health 2020¹⁰, which is built on the two pillars of improved governance of health²⁶ and addressing the social determinants of health²⁷.

METHODS

These reports are of course dependent on the availability and accessibility of data. Those with policy lead responsibility in each area have used their experience in identifying and locating what is available, and have coordinated with key institutions and individuals to locate and seek access to the latest data.

At the same time literature searches were conducted on the above areas after agreeing the search terms and search strategy to maximise the coverage within the budget and time constraints. A standard template was used as the basis for all the literature searches. In each case it was modified to suit the topic in question, based both on consultation with topic experts and as a result of trial searches – where these identified either too many unrelated documents or too few relevant ones.

Searches focused on data and literature from the last 10 years, principally in English. Key documents in other languages were however identified – from research, snowballing, citation searches, or discussion with experts. We have

additionally sought expert views on grey literature from those known to the policy leads.

OVERVIEW OF FINDINGS

In general, the results of literature searches indicated a remarkable lack of detailed evidence. Despite the fact that many studies of interventions collect data about the participants' economic, educational, or occupational status, they tended to report their outcome data after controlling or adjusting for SES, thus preventing assessment of differential effects.

It is possible that these individual studies could be re-analysed to improve identification of the effects on different socio-economic groups. However, this would require significant effort either by the original researchers (whose project funding will have ceased) or in a meta-study that would need to familiarise themselves with multiple datasets, collected for diverse purposes, reconcile different socio-economic classifications and variables, and perform statistical analyses appropriate to the varied studies.

For the reasons described earlier, those in more disadvantaged groups are likely to be set in their behaviours by adverse early life experiences, their conditions of daily life and the wider structural determinants¹. This is likely to make them less responsive to behavioural interventions than those who are more advantaged. It is this that is obscured in much of the literature. It has a number of implications in interpreting the results that are available.

Targeted interventions, which are undertaken only with lower SES groups, may have an impact which the authors interpret as reducing the SES gap or the SES gradient. This may be true, but if the same intervention were to be rolled out equally across SES groups, the response of higher SES groups might exceed that found in the lower SES groups, which would widen the gap or increase the gradient.

People from higher socio-economic groups tend to engage more in health interventions, for a number of reasons, including being more likely to hear about available interventions, having greater agency, or having fewer barriers to becoming involved and maintaining that involvement. Thus, targeted interventions may indicate effectiveness among low SES participants but cannot claim to reduce or increase the SES differentials across social groups (the social gradient) on a population-wide basis.

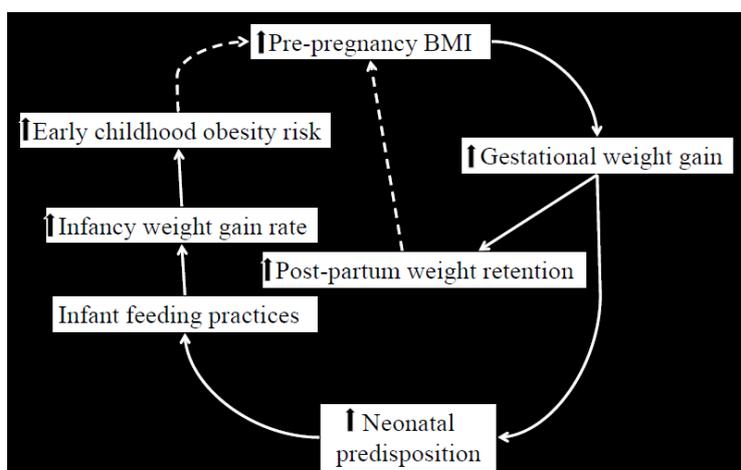
One solution to reducing the social gradient may be 'proportionate universalism' in which actions are universal, but with a scale and intensity that is proportionate to the level of disadvantage^{27,28}.

Nutrition and diet in the first 1000 days

Life-course approach

A 'life course' approach to health promotion considers the influence on children of the nutritional status of their parents, and how the nutritional status of children as they grow to adulthood will have an influence on their children in turn. Policies which improve the pre-conceptual nutrition of parents-to-be will have follow-on benefits for the child, and for their children in turn. Such policies can help EU Member States to decrease the risk of childhood obesity, improve maternal health, and reduce disparities in the most disadvantaged groups. This life-course approach is shown in Figure 3.

Figure 3: Life-course framework for understanding inequalities in childhood obesity



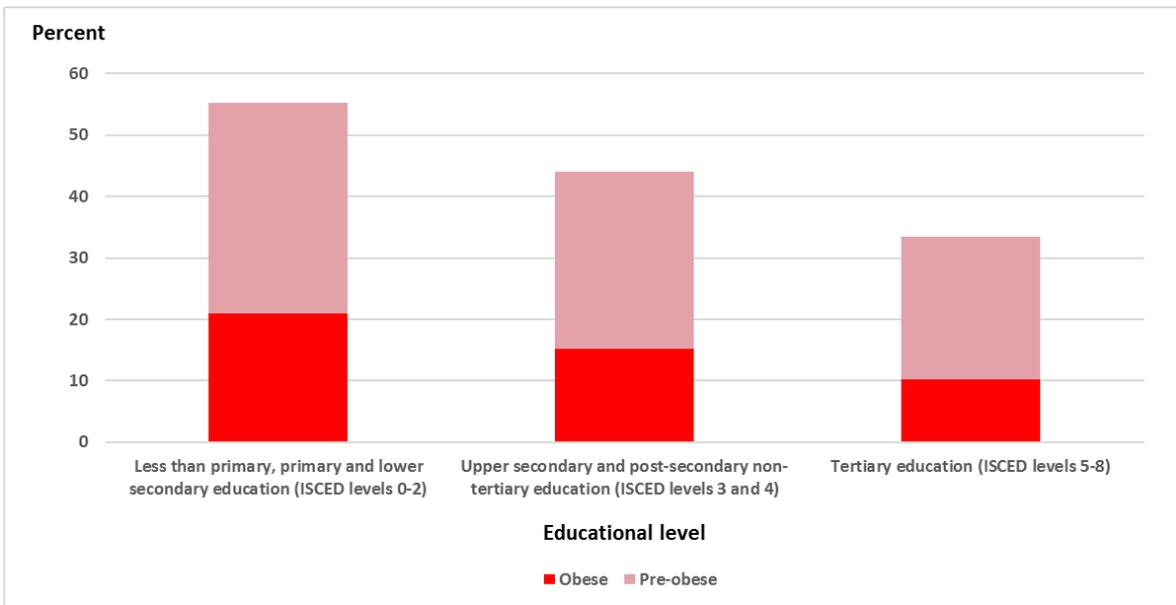
BMI = body mass index.

Source: Pérez-Escamilla R (2011)²⁹

Summary of evidence on inequalities

No routine data is available on maternal obesity but figures are routinely available for all women aged 18 to 44, the main fertile age range. Without evidence on fertility rates at different levels of BMI we cannot be certain of how these figures would be reflected in the distribution of maternities. Figure 4 shows that in 2014, there was a steep social gradient in both obesity and overweight, more generally. Among women in this age group who had, at most, completed lower secondary education, 21 per cent were obese compared to only 10 per cent of those with tertiary education. The respective percentages overweight were 55 and 33 percent (i.e. either pre-obese or obese).

Figure 4 Females aged 18-44 overweight by educational attainment level and whether or not obese, 2014

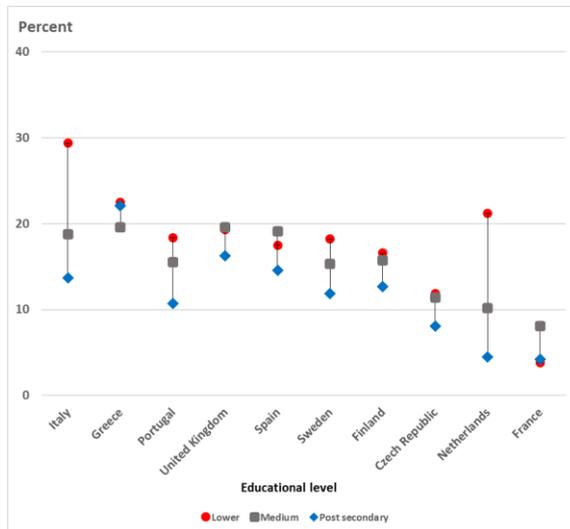


Source: Eurostat, [hlth_ehis_bm1e], European Health Interview Survey
http://ec.europa.eu/eurostat/en/web/products-datasets/-/HLTH_EHIS_BM1E

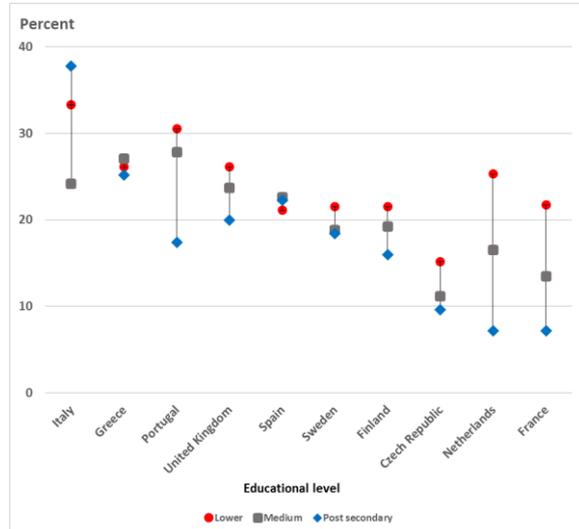
For young children, data on those who are overweight at ages 4 to 7 have been compiled from 10 surveys in EU Member States. Figure 5 shows that children whose mothers had at least post-secondary education were generally less likely to be overweight than others, with a clear gradient to the least educated in most of these countries.

Figure 5 Children overweight at ages 4 to 7 by mother's educational attainment level, various years, by sex

Boys



Girls



Source: Ruiz et al (2016)³⁰

Evidence on interventions

Interventions with women of reproductive age

A very weak evidence base suggests that some improvements in motivation to reduce weight gain during pregnancy and in the child through dietary behaviour, exercise, and subsequent breastfeeding are achievable through counselling and educational sessions in targeted lower-income groups. The only evidence of improved adiposity measures is reported in a small-scale study involving personalised counselling over a one-year period.

Interventions for weight gain during pregnancy

A weak evidence base suggests that interventions targeted at lower-income women during pregnancy are effective for improving health behaviours, reducing the level of weight gained during pregnancy and reducing the likelihood that weight gain exceeds national recommendations. Interventions in the literature used a range of approaches including counselling, vouchers, leaflets, motivational lectures, self-monitoring reports, and exercise training.

Interventions on birth weight

A very weak evidence base suggests that counselling and personalised nurse advice given to lower-income (ethnic minority) women during pregnancy can improve birth outcomes. This is the case for low birth weights or small-for-gestational age babies. No studies were found of interventions to reduce the risk of high birth weight or large for gestational age babies.

Interventions on breastfeeding

A weak evidence base suggests that a variety of interventions can be effective in producing better breastfeeding initiation and duration outcomes, including peer-support and specialist counselling in group and one-to-one sessions, among lower-income mothers.

Interventions on complementary feeding

A weak evidence base suggests that the provision of various forms of intervention through professional, peer-group and other forms of counselling, health education, and skills training were generally successful at improving infant feeding practices, and in some cases showed evidence of reduced adiposity in the offspring.

Interventions on marketing of breast milk substitutes

On average, mothers with high levels of education appear to breastfeed significantly more compared with those with low levels – with those with lower levels of education relying more on professional advice than more highly educated women who rely on written material³¹. When breast milk substitutes are provided for free in maternity facilities and when they are promoted by health workers and in the media, there is evidence that this undermines breastfeeding.³² Conversely, when breastfeeding support is offered to women, the duration and exclusivity of breastfeeding is increased.³³ Childhood obesity is probably exacerbated as formula-fed infants appear to gain weight faster than those that are breastfed. Given the correct policy infrastructure breastfeeding rates can improve dramatically in a very short time. EU Member States have to-date endorsed many of these policies at international level but still need to implement them nationally. For example:

- The EU action plan on childhood obesity 2014-2020³⁴
- The Comprehensive implementation plan on maternal, infant, and young child nutrition endorsed by the World Health Assembly in 2012³⁵
- The Global monitoring framework on maternal, infant, and young child nutrition endorsed by the World Health Assembly in 2014³⁶
- The WHO European Region Food and Nutrition Action Plan 2015-2020³⁷
- Report of the WHO Commission on Ending Childhood Obesity (2016)³⁸

Interventions among fathers / fathers-to-be

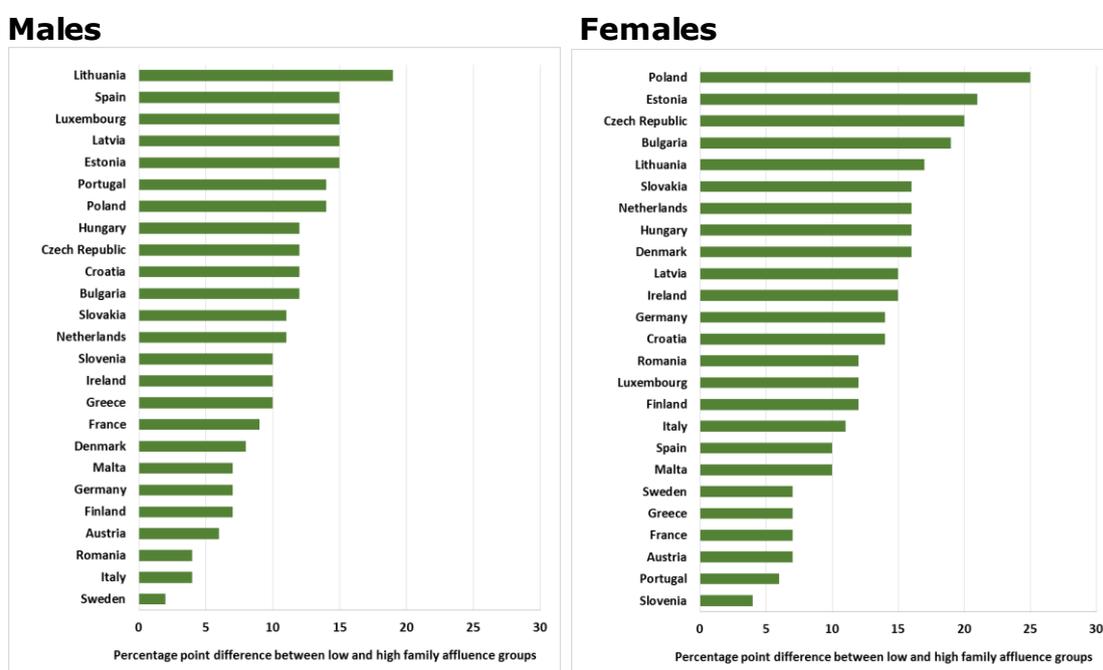
Of two papers identified, one stated that the benefits of intervention were greatest for men with intermediate or higher educational level, and the second found benefits of an intervention for low education adolescents with obesity but did not differentiate the results between the male and female adolescents.

Nutrition and diet beyond the first 1000 days

Evidence on socio-economic distribution of behaviours

The socio-economic pattern of behaviour among school-age children (at ages 11, 13 and 15) differs considerably between EU Member States and between boys and girls. Figure 6 shows differences in fruit consumption by level of affluence – children in high family affluence groups eat more fruit than those in low affluence groups in all countries. However, the extent of this difference varies between 2 percentage points for boys in Sweden and 25 points for girls in Poland.

Figure 6 Percentage point difference in fruit consumption between low and high family affluence groups at ages 11, 13 and 15, 2014



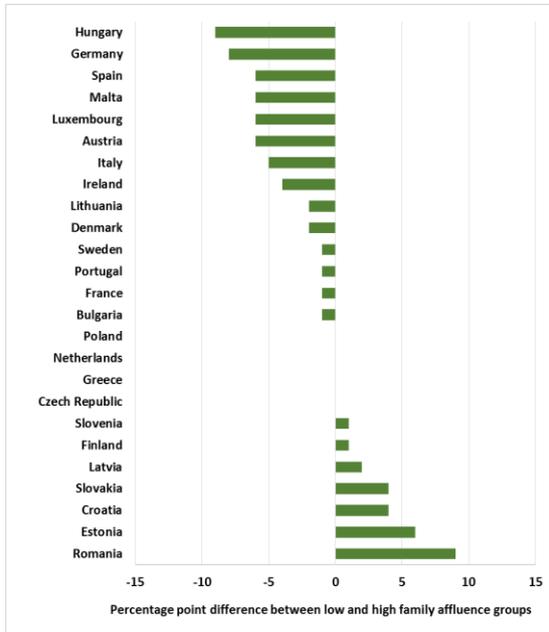
Source: Health Behaviour in School-Aged Children 2016, WHO European Data Warehouse

http://dw.euro.who.int/api/v3/measures/HBSC_6?lang=En

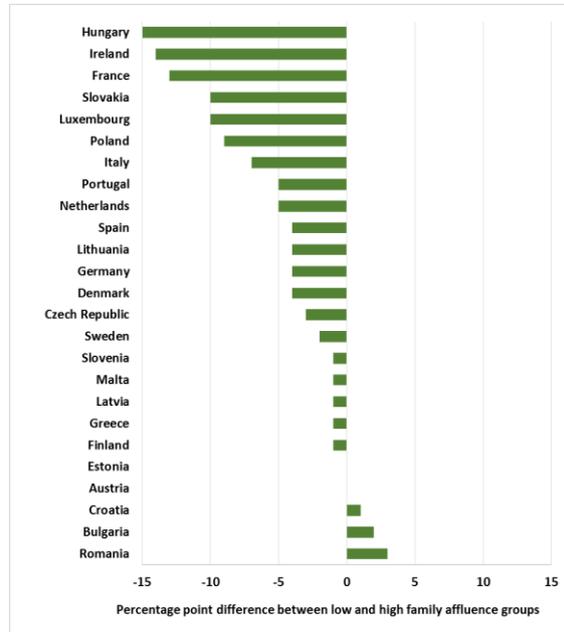
In terms of differences in the consumption of sugar-sweetened beverages, even the direction of socio-economic differences varies between Member States (Figure 7) – from -15 percentage points among girls in Hungary to +9 points among boys in Romania. That is to say, girls in high affluence families in Hungary are less likely to consume these drinks than their low affluence counterparts while in Romania boys in high affluence families are more likely to do so than their low affluence counterparts.

Figure 7 Percentage point difference in sugar-sweetened beverage consumption between low and high family affluence groups at ages 11, 13 and 15, 2014

Males



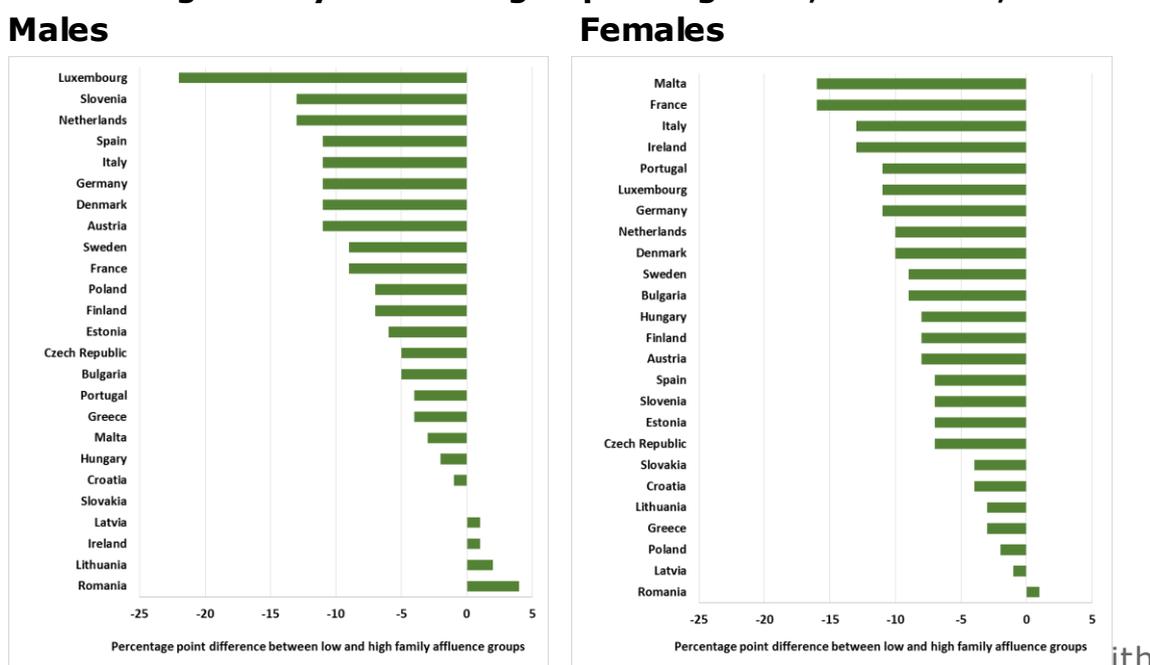
Females



Source: Health Behaviour in School-Aged Children 2016, WHO European Data Warehouse
http://dw.euro.who.int/api/v3/measures/HBSC_6?lang=En

In most Members States, children at ages 11, 13 and 15 in high affluence families are likely to have lower BMI than those in low affluence families (Figure 8). However, in some countries the gradient is reversed – in particular for both sexes in Romania.

Figure 8 Percentage point difference in prevalence of BMI, between low and high family affluence groups at ages 11, 13 and 15, 2014



Source: Health Behaviour in School-Aged Children 2016, WHO European Data Warehouse

http://dw.euro.who.int/api/v3/measures/HBSC_6?lang=En

Evidence on Interventions

Child obesity interventions

The evidence suggests that school- or pre-school interventions in younger children with parental/family involvement and sustained over several years may have a benefit for lower SES groups. The evidence on social gradients is, however, mixed. Where interventions were targeted at low SES groups, the effect they would have had on higher SES groups is unknown. For older children, the benefits for lower SES groups are less clear. Benefits of school-based interventions may only be found among higher SES groups. Changes to environmental and social barriers may have benefits for all SES groups which in some instances are larger for low SES groups, while there was evidence of no benefit for children from family-targeted social media campaigns.

Adult obesity interventions

A weak evidence base suggests that environmental and fiscal measures may reduce SES inequalities, while informational interventions may be less effective, although the UK '5-a-day' campaign may be an exception (it included social marketing and food labelling measures). Targeted interventions may be effective at improving health behaviour in the targeted group, including weight-loss programmes targeting low SES women.

Sugar-sweetened beverages

A weak evidence base suggests that multicomponent school- and family-based interventions may achieve a short-term narrowing of the SES gap in consumption among children. SSB taxation was more effective in real-life situations although unintended consequences, such as substitution with other unhealthy products, should be considered.

Dietary patterns

A weak evidence base suggests that a narrowing of the SES gap in diet-related behaviour may be achieved through price adjustments, for example combined taxation and subsidies to encourage switching to healthier products, or the provision of free healthier foods at schools. Informational approaches including computer-based material and social marketing appears either ineffective or widens the gap for older children and adults.

Fruit and vegetables

A weak evidence base suggests that the provision of free fruit in schools may achieve a short-term narrowing of the SES gap in fruit and vegetable consumption among children, while a decline in family income (effectively increasing the price of many food products) may widen the SES gap in consumption, at least in adults.

Trans fats

A weak evidence base suggests that reformulation may achieve a narrowing of the SES gap in consumption levels, and that labelling of industrial *trans* fatty acids or total *trans* fatty acids content on packaging may widen the SES gap in consumption.

Salt

A weak evidence base suggests that reformulation can have a population-wide effect and can narrow SES differentials in salt consumption without changes in product purchases. Informational interventions – labelling and social marketing – did not reduce differentials.

Marketing

A weak evidence base suggests small differences in impact, indicating that interventions in marketing would benefit all groups without widening or narrowing SES differentials in health-related behaviours. Furthermore, interventions to reduce TV advertising should have greater impact in lower SES groups, as their exposure is highest and their responsiveness to advertising of unhealthy foods is highest. Colour-coded packaged food labelling may also benefit lower-income purchasers. There is additional evidence (not reviewed here) that colour-coded 'traffic light' labelling is superior to numerical coding among people with lower educational status and lower literacy and numeracy.

Physical Activity

Urban regeneration programmes, urban design and land use/transport policies

Along with other attempts to revitalise the urban fabric and create more amenable and liveable conditions, these were seen to be effective, but there was no evidence of any differential impact. Overall it seems likely that they will reduce inequalities in health if they are applied in areas of greatest need. Such area-based initiatives are often targeted at deprived areas, aiming to regenerate areas blighted by previous industry or poor housing. The overriding principle behind such regeneration should be that new designs are based primarily around creating liveable environments in which people can safely and easily walk, cycle, and use public transport, rather than being designed around motorised transport. Such improvements should aim to make life better for existing residents, rather than resulting in these residents being “priced out” of the area as a result of making it a more desirable place to live. This is not an easy balance to achieve.

Cycling interventions

These appear to be effective at increasing rates of cycling but there was no evidence of their differential impact. It appears likely that – like town planning initiatives above – infrastructural cycling interventions (i.e. building bike paths and other infrastructure) would help to reduce inequalities if implemented in areas of greatest deprivation. However, promotional and other initiatives that are voluntary in nature are likely to perpetuate if not widen inequalities as there is evidence that in many countries, cycling is taken up by higher socio-economic groups first.

Walking interventions

These appear to be effective at increasing rates of walking but there was no evidence of their differential impact. As with cycling and town planning it appears likely that interventions that modify the built environment to create more amenable places for walking, that link to important destinations, would help to reduce inequalities if implemented in areas of greatest deprivation. Across Europe, far higher numbers of people walk regularly for transport than cycle, so the effective promotion of walking has great potential for public health impact. The best approaches combine actions to support both walking and cycling, with a focus on promoting walking for shorter journeys of around 1-2 km, promoting cycling for longer journeys of perhaps 2-10km, and facilitating public transport for longer trips.

Active travel

Policies to promote active travel (walking and cycling) have numerous co-benefits in addition to health outcomes such as improving air quality and social cohesion³⁹. However, it is important to consider issues of accessibility for more disadvantaged groups or people with disabilities. While making modifications to the environment to support walking and cycling may seem difficult, it may well be that they are politically more popular than many public health actions

such as nutrition-related actions. It is also important to note that they generally involve alterations to the allocation of existing budgets rather than requiring entirely new investment. Given the lower cost of walking and cycling infrastructure relative to roads this is likely to be cost-effective.

Individual and group-based environmental/conservation activities

These appear likely to increase health inequalities through differential uptake favouring higher SES groups, and should only be implemented with caution – see earlier comments on "pricing out" poorer residents.

School-based interventions

Whole-school approaches and the WHO Health Promoting School framework⁴⁰⁴¹ have a strong evidence base for their effectiveness, but only limited evidence of their differential impact. However, it seems likely that whole-school approaches can make a positive contribution to reducing inequalities in physical activity (and health outcomes) if they are planned appropriately and applied across the entire school, but targeted towards more deprived areas; and employ strategies to ensure involvement among the most deprived students.

Workplace interventions

These can be effective at increasing active travel and total physical activity, but there is little evidence on their differential impacts by SES. One issue is that these approaches are typically employed by larger companies, which have the time and resources to develop staff well-being strategies and employ workplace health coordinators. However, a large proportion of the EU workforce is employed in small and medium enterprises, which may not have the capacity to invest in employee health. It therefore seems likely that a blanket approach to workplace health would risk widening inequalities; efforts would need to be made to target resources at small and medium enterprises and employers in deprived communities.

Primary care based approaches

The evidence shows that exercise referral schemes are not effective but counselling in primary care is effective at increasing physical activity in the short term. This conclusion extends to their likely impact on inequalities: referral schemes are likely to widen inequalities – they would be taken up more readily by higher socio-economic groups who have the resources (time, money, lack of barriers) to attend a leisure centre when referred. However, a well-planned and universal counselling scheme offered to everyone at risk who attends primary care would seem likely to have a more even uptake and impact according to socio-economic status.

Targeted individual and group approaches

Interventions to persuade specific, at-risk individuals or groups to change behaviour were found to be effective, but there was little or no evidence on

their differential impact. Like most traditional health promotion schemes, there is concern that these types of programmes would carry a risk that they would widen health inequalities as a result of differential uptake and maintenance by people from different socio-economic groups.

Conclusions

In general, the results of literature searches indicated a remarkable lack of detailed evidence. Despite the fact that many studies of interventions collect data about the participants' economic, educational or occupational status, they tended to report their data after controlling or adjusting for SES, thus preventing assessment of differential effects.

It should also be noted that targeted interventions which are undertaken only with lower SES groups may have an impact which the authors interpret as reducing the SES gap or the SES gradient in health or health-related behaviour. This may be true, but if the same intervention were to be rolled out equally across SES groups, the response of higher SES groups might exceed that found in the lower SES groups, which would widen the health gap or increase the gradient.

People from higher socio-economic groups tend to engage more in health interventions, for a number of reasons, including being more likely to hear about available interventions, having greater agency, or having fewer barriers to becoming involved and maintaining that involvement. Thus, targeted interventions may indicate effectiveness among low SES participants but cannot claim to reduce or increase the SES differentials across social groups (the social gradient) on a population-wide basis. One solution to this conundrum may be 'proportionate universalism' in which actions are universal, but with a scale and intensity that is proportionate to the level of disadvantage.

This review has however shown that there is sufficient evidence – combined with expert opinion – to take action on many areas of diet and physical activity across Europe without increasing health inequalities. In particular, action taken among mothers-to-be can have beneficial effects on both the mother and the subsequent life of the child. This requires both individual counselling of those in lower status groups and universal action on factors that encourage less healthy behaviours (such as the promotion of formula milk). Similarly, short term gains in reducing socio-economic differences in the consumption of sugar-sweetened beverages among school-age children can be achieved through multicomponent school- and family-based interventions. However, long-term benefits in adults and children mainly require fiscal measures such as sugar taxes. Physical activity interventions and approaches – particularly creating safe and appealing environments for walking and cycling – may also be practicable and acceptable in the current political climate.

The importance of context cannot be underestimated, notably at national level, where governments need to understand the relations between socio-

economic status, diet, and physical activity in their own countries and take action accordingly.

In taking action, it needs to be recognised that unhealthy behaviours tend to cluster in the same individuals and social groups, with health impacts likely to be greater than would be predicted from the combination of individual risk factors. Single-factor interventions are less likely to be effective in these groups than more holistic approaches to change the causes that lead to the combination of adverse behaviours.

There is an urgent need for improved data that describe the socio-economic distribution of diet, physical activity (and indeed other risk factors and behaviours) across Europe. Many surveys collect such data but then either do not analyse the socio-economic components of their datasets, or do not present them in a meaningful or consistent way. In particular there is a need for country-level data that describe the social patterning of health-related behaviours so that countries can establish their own specific strategies, addressing the most important modes of activity or specific geographical areas.

There is an ongoing need for evidence of the effectiveness of interventions and approaches to tackle health behaviours, differentiated by socio-economic variable. Again, researchers often collect data on the socio-economic characteristics of their study participants, but then do not report the differential impact of their interventions. Studies tend either to ignore the socio-economic data, or to use it simply to describe their study participants. There is a need to quantify the level and direction of differential impact in studies and hence identify those interventions and approaches that are most effective in promoting healthy behaviours while reducing, or at least not widening, health inequalities.

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