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COMPARING CHILD WELL-BEING IN OECD COUNTRIES: CONCEPTS AND METHODS

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This paper presents a further analysis of child well-being carried out in the context of the UNICEF Innocenti Report Card 7 on Child Well-Being in Rich Countries (2007). This paper will also be published with the same title by the University of York, Social Poverty Research Unit and the University of Stirling.

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Comparing Child Well-Being in OECD Countries: Concepts and Methods

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Summary: This paper is produced alongside Innocenti Report Card 7 Child Well-being in Rich Countries. It provides more detail on how the indicators were chosen for the Report Card, and how they were combined into components and then into dimensions. It also provides additional analysis to complement the Report Card.

We started working on this topic in reaction to the cautious approach to indicator development of the Indicators Sub Committee of the European Union Social Protection Committee. The so-called Laeken Primary and Secondary Indicators are not well adjusted to capture children's well-being and currently only contain child breakdowns for a relative poverty measure and jobless households. Although in the report by Professor Tony Atkinson and colleagues prepared for the Luxembourg Presidency (Atkinson et al., 2005) there was a proposal that children should be 'mainstreamed', it was suggested (by the Head of Eurostat) that only one child-related indicator should be added to the Laeken Primary Indicators – on educational achievement. Our aspiration was to demonstrate that much more was possible using already available data. So during the UK Presidency of the EU we set about building an index of child well-being that will be published in Social Indicators Research (Bradshaw, Hoelscher and Richardson, 2006). The EU index is different to the analysis developed in this paper mainly because it exploits European data sources not available for OECD countries.

This paper begins in Section 1 with a background review of previous conceptualisations of child well-being. Then in Section 2 we develop a framework for the analysis drawing on a rights-based approach; notions of creating of well-being; and ideas about children's interaction with their environment. Section 3 reviews the methods employed in developing the dimensions. Section 4 presents the results for each dimension. Section 5 is a concluding discussion. There is an appendix containing the raw data[1].

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[1] Researchers who want to have access to the data as an Excel spreadsheet can email djr113@york.ac.uk.

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1. BACKGROUND

There are numerous approaches to conceptualising and measuring the well-being of children. These vary considerably, depending on whether the main objective is the monitoring of child outcomes for policy-related purposes or the understanding of the underlying factors that create well-being and the interrelationships between different components of child well-being. Likewise, as Hanafin and Brooks (2005) point out, the different frameworks reflect differences in underlying perceptions of children, for example whether children are seen as having 'rights' or 'needs', or for example being interested in 'development', 'outcomes' or 'resilience'.

While there is no consensus about frameworks and definitions, all concepts have in common that they are inherently multi-dimensional, taking into account the complexity of children's lives and relationships. In this, concepts of child well-being are particularly helpful in broadening the discussion on poverty among children from a mainly income-focused perspective to a more comprehensive understanding of the multiple factors influencing children's life situations. The following gives a brief overview of some multinational and national initiatives on conceptualising child well-being mainly in rich countries, before developing the concept of child well-being that underlies our child well-being index.

From a cross-national perspective the Multi-National Project for Monitoring and Measuring Children's Well-Being (Ben-Arieh et al. 2001) is particularly noteworthy. It is a collaborative effort of experts from a range of disciplines and countries. During the first stage (1996-2000) they worked together to conceptualise child well-being 'beyond survival' and to identify appropriate indicators. The second stage aims at putting this framework into practice by developing a valid scientific protocol for collecting data on child well-being and by building up a network of researchers that uses this protocol and collaborates on archiving and disseminating data. The project partners agreed on some 50 indicators in five components with 13 subcomponents.[2] The components are:

Safety and physical status

Personal life

Civic life

Children's economic resources and contributions

Children's activities.

While being both comprehensive and open in its conceptualisation, the components have so far only partly been populated with data. Data is available for 'children's economic resources' and the component on children's civic life is based on the CIVED survey. Also one of the organisations collaborating on the project is the German Youth Institute[3], which is monitoring the life situation of children and their families in Germany by running a

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[2] For more information see http://multinational-indicators.chapinhall.org/Index.html

[3] See http://cgi.dji.de/cgi-bin/projekte/output.php?projekt=268&sprache=E

longitudinal children's panel, a youth survey and a family survey. It is however not clear how closely these surveys are linked to the proposed framework of children's well-being.

National approaches to developing and monitoring sets of indicators of child well-being are above all to be found in English-speaking countries. The US Child Well-Being Index (CWI) for example is a composite index measuring trends in child well-being since 1975 and is updated annually. It thus offers a unique opportunity for monitoring changes in children's well-being over a long period of time. Data is compared between States but not internationally. Twenty-eight national-level key indicators are collected in seven components:

1. Material well-being

2. Health

3. Safety/behavioural concerns

4. Productive activity (educational attainment)

5. Place in community (participation in schooling or work institutions)

6. Social relationships (family, peers)

7. Emotional/spiritual well-being.

(Land, 2005, cf. http://www.soc.duke.edu/~cwi/)

While the components seem to be comprehensive, a look at the indicators shows that most information is available on children's economic situation, health and behavioural problems as well as education. The 'social relationship' component includes indicators on children growing up in single-parent households and the rate of children having moved within the last year. Emotional and spiritual well-being is measured by the suicide rate and the importance of religion to young people. The 'quality of relationships' and 'children's personal well-being' components thus seem to be underrepresented.

The UK government on the other hand has developed an outcomes framework as a basis for monitoring the performance of government departments. While primarily designed in the context of Public Service Agreement Targets (PSA) it also offers a useful tool for the measurement of child well-being. The 'Every Child Matters' outcomes framework includes 25 indicators in five interrelated areas of children's well-being:[4]

1. Be healthy

2. Stay safe

3. Enjoy and achieve

4. Make a positive contribution

5. Achieve economic well-being

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[4] See http://www.everychildmatters.gov.uk/_files/0C41DA18F6F58C44AFE3EC4D41EA0F04.pdf
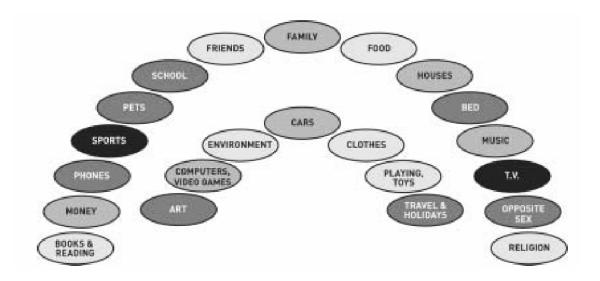
While covering the common indicators for child well-being it is noteworthy that the framework and children's outcomes are expressed in positive terms, thus encouraging local authorities and services using this framework to focus on the strengths of children. At the same time there is a strong focus on children's performance, conveying a picture of children as having rights (e.g. safety) but likewise duties (e.g. educational achievements and positive behaviour).

Independent of the UK government, Save the Children has recently published the second report on The Well-being of Children in the UK (Bradshaw and Mayhew 2005), updating data presented in the first report 2002 (Bradshaw 2002). They show trends for 60 indicators in 12 components over a – so far – three-year period and thus are able to give a very comprehensive picture of child well-being in the UK.

- Child demography
- Child poverty and deprivation
- Child health
- Child lifestyles
- Mental health and well-being
- Child time and space
- Child maltreatment
- In and leaving care
- Childcare
- Crime and illegal drug use
- Education
- Housing and neighbourhood.

In an equally comprehensive way the Irish National Children's Office has developed a set of 42 well-being and seven socio-demographic indicators to monitor the well-being of children in Ireland (Hanafin and Brooks 2005, 2005a). Though the indicators cover a similar range of issues as the Save the Children study, they are not grouped into components. While most of the indicators are linked to existing data sources, for some indicators these remain to be developed. One of the most interesting features of this project is the process of indicator development, particularly the participation of children and young people.

Children's views were elicited in three phases. In the first phase more than 250 children aged 8-19 used disposable cameras to take pictures of what well-being means to them. These were developed and returned to the children so that they could write comments on the back. In the second phase other groups of children sorted the photographs into different categories. In the final phase a third sample of children and young people was asked to create a schema representing the relationships between the categories. A group of young people then finally developed a model of child well-being based on the different categorisations, highlighting the areas children identified as most important for their well-being.

Many of the categories can be found in the various adult conceptualisations, though children seem to set different priorities. Children highlight their family as most important determinant of their well-being, followed by friends, school and pets on the one hand and basic goods (food, housing, bed) on the other. Well-being is created in relationships and the places they spend most of their time. Material goods and leisure activities on the other hand are seen as less essential. Other areas of their well-being seem to be taken as granted and do not form part of children's conceptualisation of well-being, notably health and safety. In the final set of indicators children's categories, e.g. the importance of pets, were incorporated (NicGabhainn and Sixsmith 2005).

Whereas the presented examples of researching children's well-being so far have focused on studies with a general approach, other projects, e.g. Bradshaw (2001, 2002) apply concepts of child well-being in analysing the impacts of poverty on children's life situations, thus broadening the perspective towards a multi-dimensional understanding of child poverty. He groups children's outcomes in four components:

1 Physical well-being
2. Cognitive well-being
3. Behavioural well-being
4. Subjective/mental well-being

Aber, Gershoff and Brooks-Gunn (2002) propose a set of eight components with some 100 indicators for understanding the social exclusion of children in the US, drawing on available data sources. Within these components they differentiate between components of exclusion or inclusion they see as necessary, normative for the US society or desirable:

1. Basic living
2. Family economic participation
3. Housing
4. Health
5. Education
6. Public space
7. Social participation
8. Subjective experience of exclusion.

A different approach to understanding child poverty can be found in German research, following the concept of lifestyle deprivation ('Lebenslage'). Lifestyles can be defined as the scope that persons have to pursue their interests, determined by their life circumstances (cf. Amann, 1983). Poverty is against this background understood as limitation in individual capabilities, similar to Sen's capability approach. In recent years this concept has been implemented in a number of both quantitative and qualitative studies on child poverty (e.g. Holz and Skoluda 2003, Hoelscher 2003, Chassé et al. 2003). The studies differ considerably in regard to the sample, methods, and the operationalisation of poverty but they have in common that they consider the situation of children in their double role as independent members of society as well as their dependency on their family. Apart from the financial situation of the family therefore the well-being and experiences of children and young people in different areas of life are analysed, e.g. school, health, family relations, recreation and friendship.

This overview of projects and initiatives to operationalise and measure child well-being shows much common ground concerning the components and topics that should be included – families' economic situation, children's health, safety, education, emotional well-being and risk behaviour, but also, though less unanimously, the quality of relationships with family and friends, civic participation and leisure activities. Real discrepancies are only to be found in the choice of indicators and, where applicable, the categorisation of components.

These differences reflect researchers' views of the role of children in society, but also their values as to what constitutes a good life for children in a given society and what experiences they need for a healthy development. However, these decisions, though implicit in the choice of indicators, are not always discussed.

2. FRAMEWORK FOR THE ANALYSIS OF CHILD WELL-BEING

2.1 A rights-based approach

The UN Convention on the Rights of the Child (CRC) offers a normative framework for the understanding of children's well-being. Its four general principles – non-discrimination (art. 2), best interest of the child (art. 3), survival and development (art. 6), and respect for the views of the child (art. 12) – fit closely in the discussions on how to conceptualise child well-being.

While children's rights are the same for every child some groups of children face structural disadvantages in many countries, like children from ethnic minorities, children with disabilities, children living in institutions or temporary housing and refugee children. Many of these children remain invisible, not least because they tend to be not included in child surveys. Data on child well-being thus mainly depicts the life situations of children who are living at home and/or are in mainstream education. Non-discrimination thus points to the need to both capture the life situations and well-being of excluded children and to widely disaggregate available data including for age, gender, ethnic, geographic and economic background. The principle of the best interest of the child implies a child focus in all decisions affecting children's lives by government, public authorities, private institutions, legislative bodies, and thus strengthens children's role as citizens in their own right. As a result in data on child well-being the unit of analysis should be the child. The complexity of children's lives is reflected in the principle of survival and development. The CRC promotes a holistic view of the child, taking into account their health and nutrition as well as their spiritual, moral and social development. This is reflected in giving weight to children's civic, political, social, economic and cultural rights, highlighting that they are interrelated, universal and indivisible. Concepts of child well-being accordingly need to be multi-dimensional and ecological, recognising both children's outcomes and the conditions they need for their development. The principle of respect for the view of the child finally acknowledges children's right to be heard and to have their view taken into account in matters that affect them (Santos Pais 1999).

Children's participation in understanding and measuring their well-being is still rare, though children and young people are best able to give insights into their daily lives and their views on what makes them and other children be well. The reality of children and young people's lives today may differ considerably from adults' perceptions and expectations. Girls and boys have different experiences, concerns, needs and aspirations than their parents and these views need to be known and taken into account to understand their situation and to develop programmes and policies that actually fit to the needs of children and young people (cf. Lansdown 2001, Laws and Mann 2004, Ackermann et al. 2003). The Irish experiences show that children can give valuable input in conceptualising children's well-being and in identifying the areas that are most important to them. In regard to identifying indicators, children's contributions are likely to point to the limitations of existing data sources, as their views might not be reflected in available indicators. Thus, in the design of child surveys, the development of indicators and the modelling of child well-being, children's perspectives need to be taken into account. However, coming from the opposite direction, in work that solely draws on existing indicators and data sources, meaningful participation of children is

more difficult to achieve, as their potential to actually influence the process is limited by the technicality and inherent limitations of the material. Though children did not participate in the choice of our measures, many of our data sources present the voices of children. Above this, the conceptualisation of child well-being includes children's perspectives by drawing on qualitative and quantitative research that solicits children's experiences.

The rights set out in the CRC are universal, applicable to children in industrialised as well as developing countries. The divergent living conditions of children across the world reflect that different countries are on different levels in the process of realising children's rights. Particularly social, economic and cultural rights have to be seen against the background of the specific economic situation of a country. Children's right to an 'adequate standard of living' (art. 27) or the 'highest attainable standard of health' (art. 24) for example point on the one hand to an absolute, global standard (survival and development), but on the other hand also have to be seen as standards relative to the wealth of a given society that need to be translated into concrete measures. Against this background indicators of child well-being point to the degree of realisation of children's rights and inform policy makers of gaps and problems in their implementation of the CRC.

The progressive realisation of children's rights requires governments to invest the 'maximum extent of their available resources' (art. 4). In fact, the analysis of child poverty in the OECD shows that child income poverty rates are linked to social expenditure for children and their families. However, while this association is very clear at both ends of the distribution, there is considerable variation in the middle – with large differences in poverty rates in spite of similar amounts of spending, suggesting that what matters most are governmental priorities and the way benefits and services are allocated. This can also be seen when comparing child poverty rates before and after tax and transfers. While 'market' poverty rates (below the 50 per cent median) overall vary between ten per cent and 30 per cent across the OECD, the variation becomes much more pronounced after government intervention. The Nordic countries, having the lowest child income poverty rates, manage to reduce their market poverty rates by about 80 per cent whereas at the other end of the spectrum these rates are only lowered by 10-15 per cent (UNICEF Innocenti Research Centre 2005). Investments in children and their families are therefore crucial to ensure children's well-being and are in themselves a binding obligation for all State Parties under the CRC.

Finally, the CRC points to the double role of children as being citizens with entitlements in their own right and at the same time as being dependent on their families, schools, communities etc. The discourse on child well-being is thus also one on well-becoming. From a political perspective child well-being is often mainly understood in terms of investment in their future, focusing on their education and future employability while losing sight of their life today. But the CRC makes very clear that children's reality today is important in its own right. Children's present enjoyment of human rights, life and their development and future life chances thus need to be reconciled in the conceptualisation of well-being by looking both into the conditions under which children are doing well and child outcomes in a range of components. Understanding children's views and concerns, their relationships and activities not only gives insight into their well-being today but also helps to identify those factors that support or hinder their development, creating a more comprehensive picture of children's life situations.

2.2 Creating well-being

Child well-being and deprivation represent different sides of the same coin. From a child rights perspective well-being can be defined as the realisation of children's rights and the fulfilment of the opportunity for every child to be all she or he can be in the light of a child's abilities, potential and skills, and as a result of the effective protection and assistance provided by families, community, society and state. The degree to which this is achieved can be measured in terms of positive child outcomes, whereas negative outcomes and deprivation point to the neglect of children's rights.

Child outcomes are however not static. They are the result of the interplay between resources and risk factors concerning the personal situation of the child, his or her family, friends, situation at school and the wider society. These factors are constantly changing and children – with their evolving capacities – create their well-being actively by mediating these different factors. Antonovsky (1987) describes this process in his concept of salutogenesis. He asks how people manage to survive and stay well despite being constantly confronted with hardship and stressful situations. According to this concept people move on a continuum between health and disease, balancing stress and resources. The creation of health and well-being is thus a process with outcomes depending on the personal background, the inner and outer situation, strengths and capacities of the individual. The main factor in this process is the sense of coherence (SOC). It describes a person's overall orientation and capacity to make the best use of the resources available. The SOC is comprised of three elements. Comprehensibility refers to the extent to which the stimuli that confront us make cognitive sense. If a situation can be assessed and understood it is easier to perceive it as manageable. Thus manageability is the second element, pointing to the extent to which the resources that are available are seen as adequate to meet the demand. The third element, meaningfulness, finally refers to the question whether life makes sense emotionally, i.e. whether problems and demands are seen as worth investing energy in (cf. Franke 1997, Lindström and Eriksson 2005). According to Antonovsky the SOC develops throughout the whole life span, but mainly during the first three decades of life. Childhood and youth are thus seen as the time in which the foundations for a healthy life are laid and the capability to deal with the demands of life is developed.

Young children are highly dependent on a nurturing and loving environment and adequate economic and physical resources. Older children on the other hand increasingly develop their own strategies to deal with the demands in their environment as they become more independent from their family by interacting with other social systems (e.g. school, peers). Correspondingly, impacts of poverty on health and cognitive development are the stronger the younger the children are and the longer the spells of poverty last. In regard to children's psychosocial well-being however impacts on young children are mainly mediated by family relations, whereas direct consequences of poverty gain importance in later childhood as girls and boys have to deal directly with the experience of having less money than others (cf. McLanahan 1997, Bacher 1997, Evans et al. 2002; Duncan and Brooks-Gunn 2000). While early childhood is decisive for children's development, comparative data sources tend to

cover older children so that our set of child indicators, too, offers more information on this age group.

Against this background, conceptualisations of child well-being need to differentiate between the conditions under which children are doing well and can develop to their full potential and children's outcomes. This links closely to Sen's concept of capability deprivation (Sen 1985, 1999, 2000). Conditions for child well-being can be understood in terms of 'capabilities' as the opportunities and choices a child has for his or her development. This includes both children's life and well-being today and their future life chances. The financial situation is in this context only one dimension among others, a means to an end to achieve functioning. Children's outcomes on the other hand can be seen as 'functionings', pointing at what children actually manage to be and do. The capability approach is also helpful as it has inherently a positive focus, not just looking into deprivations but determining what children need to be able to lead a good life (cf. Lister 2004).

2.3   Children's interaction with their environment

Children's capabilities have to be understood in the context of their development and well-being. These are dynamic processes that are influenced by a multitude of different factors. Children interact with their environment and therefore play an active role in creating their well-being by balancing the different factors, developing and making use of resources and responding to stress. Bronfenbrenner's bioecological model of human development (Bronfenbrenner 1979, Bronfenbrenner and Morris 1998) conceptualises child development on the basis of four concentric circles of environmental influence and time as an underlying factor, recognising both individual changes over time and the historic time. The child, with all his/her personal characteristics, interacts first and foremost with the family, but also with a range of other people and systems: friends, neighbours, health care, childcare, school etc. These direct interactions comprise the child's microsystem and this is the level with the strongest direct influence on children. Connections between the different structures within the microsystem, e.g. parents – school, are described as mesosystem. One level up the exosystem stands for the societal context in which families live, including among others, parents' social networks, the conditions in the local community, access to and quality of services, parents' workplace and the media. The exosystem affects the child mainly indirectly by influencing the different structures within the microsystem. The macrosystem finally points to the wider societal context of cultural norms and values, policies, economic conditions and global developments. The different systems are dynamic and interdependent, influencing each other and changing over time (cf. Stevens et al. 2005, Kolar and Soriano 2000, Lippman 2004).

In interacting with the different systems and subsystems children and their families encounter both barriers and facilitators. Participation results from a good match between an individual with his/her abilities, resources and limitations and the environment with its infrastructure, demands and resources, while a lacking fit triggers processes of exclusion. As Bronfenbrenner's model suggests, these processes are complex. Social inclusion in modern societies means the simultaneous access to and participation in many different subsystems such as education, employment, economy, community life, health, political life and

citizenship, recreation and spirituality. There is no clear-cut 'in' or 'out'. Every person participates in a wide range of systems and subsystems, but inclusion in one system goes along with exclusion from others (cf. Luhmann 1999). Thus the focus lies on processes that lead to children's exclusion from the systems of mainstream society and affect children's development. These processes are not necessarily aimed directly at the child, e.g. parents' exclusion from the labour market, but nevertheless impact on children's well-being, mediated by their family (e.g. poverty, increased level of conflicts in the family) or other factors (e.g. child being bullied because of poverty) (cf. Hoelscher 2004; Beisenherz 2002).

2.4 First résumé: Dimensions of child well-being

The review of different approaches to understanding children's well-being highlighted the complexity of children's life situations due to children's active role in creating their own well-being through interactions with their environment on the one hand and the interrelationships between different systems and dimensions of well-being on the other. This complexity makes it very difficult to capture child well-being within a comparative index that has to rely on a limited number of indicators. In particular the dynamics and interrelationships between dimensions but also regional subnational inequalities cannot be measured in this way and additional analyses at country level are needed to provide more in-depth information. That said, a set of indicators for different dimensions of child well-being offers the opportunity to get a comprehensive picture of the state of children and the realisation of their rights across rich countries and to point to the pertaining challenges and resources in these countries.

Based on the ecological understanding of well-being as outlined in this paper we analyse children's well-being in six dimensions, including 18 components and 40 indicators. The dimensions include topics that matter to children from their own point of view but also those that point to adults' responsibility for the well-being of children. Wherever possible indicators represent children's own experiences as expressed in surveys of young people. The six dimensions are:

1. Material well-being
2. Health and safety
3. Education
4. Peer and family relationships
5. Subjective well-being
6. Behaviour and risk.

The conditions children find at home and in their neighbourhood have a strong impact on their development and well-being. Particularly their economic situation influences children's well-being and well-becoming in many dimensions. The dimension 'material well-being' therefore gives information on child income poverty, deprivation and workless families.

All approaches to understanding child well-being that are discussed in this paper stress the active role of children in creating their own well-being. Thus children's personal resources –

their 'health and safety' and 'subjective well-being' – are simultaneously the most basic outcomes and the very basis of achieving well-being.

As children get older, school becomes another major factor in children's life. Education thus is our fourth dimension, relevant for children's well-being today but also decisive for their future life chances. In addition, children's educational outcomes are interdependent with the conditions they find in the education system, reflecting disadvantages and processes of exclusion that children face. The components here are educational achievement, participation in post-compulsory education and employment outcomes, while children's subjective well-being at school is included in the subjective well-being dimension.

Our fifth dimension focuses on Peer and family relationships. It acknowledges that children interact actively with their environment and aims to capture those processes that are important to children. Particularly the family situation and the quality of relationships within the family are crucial for children's well-being, while relationships with peers gain importance as children become older and more independent from their families.

The dimension 'behaviour and risks' finally captures young people's health and risk behaviour, including data on health behaviour, sexual behaviour, smoking, alcohol and drug use and experiences of peer violence. This dimension therefore gives insight into young people's interaction with their environment, pointing to resources and vulnerabilities.

All dimensions focus mainly on children's microsystem, i.e. on the children themselves and the different subsystems that directly impact on their life. Their objective is to represent the conditions children find for their development and participation in society and child outcomes. Belonging to the same system the dimensions are interdependent and interrelated.

The following sections give an overview of the conditions and outcomes of child well-being and the components and indicators that emerge from them.

2.5   Conditions for child well-being

From an ecological perspective the decisive question is what conditions within the different systems are conducive to children's well-being and foster their social inclusion. In this regard the CRC highlights the importance of growing up in a happy and loving family environment and maintaining personal relations with both parents, their right to social security and an adequate standard of living, children's protection from all forms of violence and exploitation, access to childcare, social services and the highest attainable standard of health, children's equal access to education as well as information and their right to rest, recreation and play, to participation in arts and culture. While the CRC is mainly directed to the macro- and partly also exosystem, its implications have direct impact on the lives of children and their families.

As mentioned above, the family constitutes the most important mediating factor for children's well-being, both in regard to the quality of relationships and social support within the family and the resources and opportunities parents provide for their children (Orthner, Jones-Saupei and Williamson 2004 Duncan and Brooks-Gunn 2000, Hoelscher 2003). A

high quality of family relations is not only reflected in the warmth of parent-child relationships, trust and open communication but also in a good and harmonious relationship between parents, parents' coping strategies and their ability to act as role models for their children. A high educational level of parents is likewise associated with better child outcomes (Walper 1999, Evans et al. 2002).

We have included indicators on the quality of parent-child relationships and family structure as part of the dimension 'Peer and family relationships'

Within the family the economic situation is another major condition for child well-being. It determines not only the available economic resources but also housing and the neighbourhood, children's participation in activities of their peer group and, depending on the given system of social security, the access to health care, childcare, social services and high quality education.

Poverty and deprivation impact on child well-being both directly through the lack of economic resources and indirectly through strain on parents' well-being, conflicts and necessary adjustments in the family's lifestyle. Poverty is linked to poor health outcomes and impacts on children's cognitive development (Duncan and Brooks-Gunn 2000; Beresford et al. 2005, Peters and Mullis 1997, McLanahan 1997). While in early childhood impacts of poverty on the psychosocial well-being of children are mainly mediated by family relations, direct consequences of poverty gain importance in later childhood as girls and boys have to deal directly with the experience of having less money than others (McLanahan 1997, Bacher 1997). The financial resources that actually reach children are thus another mediating factor. Children are highly sensitive to the attempts of parents to protect them from material deprivation. The experience that parents struggle to meet their needs as far as it is possible seems to help them to do without in other situations (Hoelscher 2003, Ridge 2002). With persistence and increasing depth of poverty many families are however no longer able to protect their children from the effects of cutting down expenses, so that they may become excluded in many areas of child and youth culture. Particularly at risk are young children who are born into poverty or are growing up poor, as the early confrontation with disadvantages might prevent the development of personal resources so that subsequently processes of social exclusion might start very early in life (Duncan et al. 1994, Bolger et al. 1995).

Indicators of child income poverty, deprivation and parents' joblessness make up the dimension 'material well-being'

Closely related to the financial situation are the living conditions of the family, as substantial income losses or chronic poverty forces families to move into cheaper housing. Poor standard rented accommodation in economically rundown areas, as well as overcrowding or the inability to pay utility bills, have to be seen as significant risk factors for the development of children. Neighbourhood poverty can affect child development quite independently of family poverty, especially in large urban areas where neighbourhood poverty is severe. In fact the risk neighbourhood conditions pose to the development of children and young people seems to increase exponentially rather than linearly (Duncan and Brooks-Gunn 2000, Spencer et al. 1997, Evans et al. 2002). Access to services, on the other

hand, may be more restricted in rural areas, where population density is low and families have to travel far to services. Public transport often is rare and expensive so that low-income families without an own car are particularly disadvantaged (Aber et al. 2002, Ridge 2002).

While we included a component 'housing' in the EU version of this index (Bradshaw, Hoelscher and Richardson 2006) unfortunately we could not do so for OECD countries because there is no data source available. Likewise we lost data on neighbourhood safety as part of our component on child safety (see section 3: Methods).

Neighbourhood settings point to safety as one of the basic conditions for children's well-being. Growing up safe and free from violence belongs to the basic rights of children. Violence in the family, from other adults or peers has a strong impact on children's health and well-being, depending on the circumstances (e.g. severity and frequency of violent situations) and the support for the child and his/her family. Child maltreatment within the family is often an expression of a cumulation of problems within the family as well as a lack of resources for caring in the family. Prevention, targeted at children as well as parents, and early intervention to strengthen family ties are crucial aspects of child protection (Klein 2003, Paavilainen and Astedt-Kurki 2003).

The component 'child mortality' is part of the dimension 'health and safety', though again we had to face data gaps in some areas. In particular we could not obtain data on violence against children within the family.

Access to high quality, flexible and affordable childcare and educational facilities is another protective factor. It enables parents to take up employment and to balance work and family life. For children on the other hand good childcare is linked to enhanced social, emotional and sometimes also linguistic competences for both low- and middle-income children (Duncan and Brooks-Gunn 2000, Kamerman et al. 2003).

While children's educational achievements are outcomes of child well-being, the school system itself is a contextual factor. In many countries the educational chances of children are still linked to their social background. Children in poverty, immigrant children and children with disabilities belong to the groups that often face barriers and disadvantages in the school system. While some countries, e.g. Finland, which scored high in the PISA study, also managed to level social differences, in others, e.g. Germany, social disparities are persistent (OECD, UNESCO UIS 2003, Prenzel et al. 2005). Another result of PISA is that school characteristics have a stronger impact on students' performance than family characteristics. Thus school is a major agent for the inclusion or exclusion of children and young people. The ability of schools to enable students to enjoy learning is only partly a question of how to deliver knowledge. Equally decisive is the commitment of schools and teachers to their students and their skills to manage both school and classroom in an inclusive, non-discriminatory way, catering for all children and young people.

We include data on participation rates in post-compulsory education as part of the education dimension. There was however no data source for childcare of 3-5-year-olds so that we are unable to include an indicator on childcare participation.

Children's access to health care is universal in many OECD countries. Nevertheless health inequalities for children remain persistent and particularly for the poorest populations access to health care might not be ensured. The Joint Report on Social Exclusion (European Commission 2003) identified four obstacles for disadvantaged people: waiting times, costs for care and treatment, administrative, cultural or geographical barriers and inadequate screening, vaccination and awareness-raising. However, while we recognise the importance of information on child-related input indicators like the access to health care and social services, reliable comparative data is difficult to obtain so that we could not include this kind of indicator.

2.6 Child outcomes

Child outcomes can be described in positive or negative terms, focusing either on children's well-being or deprivation. While analysing positive outcomes conveys an optimistic outlook on children's capabilities and strengths, a focus on deprivations perpetuates a view of children's vulnerability. However, one of the objectives of cross-national comparisons and league tables is to highlight gaps in the realisation of children's rights and to point to needs for action. In this context therefore a focus on deprivations seems to be more appropriate, while at the same time acknowledging children's active role as citizens in their own right.

Health

Children's health and health behaviour are the most basic indicators of well-being. Health outcomes are closely related to poverty. The costs for medical treatment, medicine, dental prostheses, glasses and rehabilitative aids can be a strong barrier to families' access to health care. But living on a low income may also be linked to a range of other risk factors that impact on children's health such as burdening living conditions and parents' personal problems. Parents with a low educational level tend to show less favourable health behaviour, e.g. in regard to nutrition, smoking, alcohol consumption, and participation in screening tests. Difficulties can also arise from a lack of knowledge about a healthy lifestyle and prevention, and also about how to behave in case of illness. Cultural or language barriers and lack of transportation can pose further barriers to parents' access to adequate health care. Additional health risks are linked to living in deprived and/or unsafe neighbourhoods, particularly in regard to environmental risks (e.g. air pollution) and risks of injury (Statistisches Bundesamt 1998, Mielck 1998, Aber et al. 2002).

Against this background it is not surprising that poverty is linked to an increased risk of premature or stillbirth and child mortality. Poor children stay more frequently in hospital and they less often take part in early screening and vaccination programmes and suffer from more dental health problems (Duncan and Brooks-Gunn 2000, Neuberger 1997, Dumesnil and Le Fur 2003). The Health Behaviour of School-Aged Children (HBSC) study shows that poor children and young people consistently rate their own health considerably lower than their better-off peers. Likewise they are less physically active. Other aspects of health

behaviour however seem to be more influenced by social factors, e.g. friends or individual factors. Smoking is for example linked to the amount of money young people have at their disposal (Currie et al. 2004).

The dimension 'health and safety' comprises data on 'health at birth', and 'immunisation', while the component 'health behaviour' forms part of the dimension 'behaviour and risks'.

Subjective well-being

How children feel about themselves and their environment is reflected in their subjective well-being. It is a result of how children respond to the demands and resources in their environment and is thus both an indication of their personal resources and the problems they encounter in their family, in peer relations or at school (see above). Again it is not possible to simply add up risk and protective factors to explain children's well-being or coping behaviour (cf. Laucht et al. 1997). One of the strongest protective factors is for example a close relationship with a parent. The quality of such a relationship can determine among other things whether or not a child who is bullied at school finds support at home. If the child, however, does not attach any great importance to their relationship with their parents in this situation it is unlikely to have much influence on the child.

We include three components on subjective well-being that give insight into three different aspects of children's lives: self-defined health, personal well-being and well-being at school.

Education

Children's educational achievement and aspirations are both indicators for their well-being today and their future life chances. As already mentioned above they also reflect structural inequalities in the educational system. Poverty and social exclusion have a strong impact on children's educational outcomes. Poverty is directly linked to lower educational outcomes, with impacts being stronger the earlier in life poverty occurs, the longer it lasts and the lower parents' income is (Peters and Mullis 1997, McLanahan 1997, Lipman and Offord 1997).

Apart from children's economic situation, low educational outcomes are often the result of a cumulation of disadvantages children face in their family, their neighbourhood and at school that in turn may lead to limited access to and participation in education. Children who – for whatever reason – feel overburdened with their life situation are more likely to do less well at school, to get into trouble with teachers and peers or to drop out completely (cf. Ridge 2002, Hoelscher 2003). Again research suggests that family factors are decisive mediators of children's achievements, particularly parents' education, access to educational resources, parenting practices and the quality of family relations as well as conflicts and psychosocial problems in the family (Haveman et al. 1997, Walper 1999, Felner et al. 1995).

Against this background the dimension 'education' includes the components 'educational achievement', 'educational participation' and 'employment outcomes'.

Children's outcomes regarding their social resources can be captured in three different components: their participation in civic activities, their interactions with friends and the extent to which they engage in healthy or problematic behaviour.

Civic participation

The extent to which children have the opportunity for civic participation at school or in their community depends on how much children's participation is encouraged and supported by their environment. While particularly poor children tend to participate less frequently in organised youth activities, it is noteworthy that approaches to improve living conditions and children's well-being in deprived communities increasingly are organised in a community-based, participatory way, actively involving children and their families.[5] For children and young people civic participation is beneficial, as they acquire new skills and knowledge, learn how to access information and develop critical-thinking capabilities. The experience of participation also teaches them to cooperate and to communicate with peers as well as with adults and to build up new networks and relationships. Being able to express themselves, to be listened to and be taken seriously furthermore strengthens children's confidence and self-esteem (cf. Williams 2004, Bennett and Roberts 2004, Lansdown 2001).

Unfortunately we were unable to include this component in the OECD version of the child index as the available data sources only adequately covered the European Union (see our section 3: Methods).

Friendship

Friendship, the possibility to spend time with friends, to have fun and share problems is of high significance in children's lives. A 'best friend' is often the only person with whom children talk about difficulties they have with their family or friends, while being part of a wider group of peers strengthens feelings of belonging. Children are at risk of exclusion from their peer group if they stand out in one way or another. This can be due to personal characteristics of the child (e.g. appearance, having a disability or belonging to a minority), poverty or a high level of psychosocial stress. Poverty can affect children's inclusion directly as well as indirectly. Some children are bullied because they cannot afford the 'right' clothing or are not able to participate in the activities of their peers. Others however withdraw themselves because they are afraid that friends do not understand their situation. Examples are children who are ashamed of not being able to buy a birthday present for a friend or to invite friends home. This in turn can lead to processes of exclusion. The same is true for children in difficult family situations or other burdening circumstances (Hoelscher 2003, Ridge 2002).

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[5] An example is the OECD/CERI project YEPP – Youth Empowerment Partnership Programme – that aims at developing a joint and comprehensive strategy for community development in deprived neighbourhoods, stressing the participation and empowerment of children and young people in a number of OECD countries. For more information see www.yepp-community.org

We include an indicator on the quality of 'peer relationships' in the dimension Peer and family relationships.

Risky and healthy behaviour

Adolescence is a time in development when risk behaviour is very common and young people often engage in it hoping for some positive gains like acceptance in their peer group. In this they tend to underestimate the risks they take. Also young people who do engage in risk behaviour do so in more than one way, e.g. they consume alcohol and have unprotected sex. Research also shows that risk behaviour is influenced by stress experiences that young people cannot manage successfully with positive coping strategies (Klein-Hessling et al. 2005; Essau 2004). How inclusion or exclusion from mainstream youth culture affects young people's involvement is complex. While experiences of exclusion can make children and young people more susceptible to risk behaviour, inclusion – or the desire to be included – may make it more likely that young people engage in risk behaviour that is seen as 'cool' and acceptable in their peer group. Thus popularity among peers is linked to both positive, socially adaptive behaviour towards family and friends and – minor – deviant behaviour that is approved by the peer group (Allen et al. 2005). Healthy behaviour can be seen as the other side of the coin. The extent to which children and young people eat healthily and engage in physical exercise points to their personal and social resources and the prevention of health problems.

The component 'risk behaviour' includes data on children's sexual activity, tobacco and alcohol consumption as well as drug use. 'Healthy behaviour' covers data on nutrition, overweight and physical exercise. Both components are part of the dimension 'behaviour and risks'.

2.7   Dimensions and components of child well-being

In the light of the theoretical considerations and the limitations of the data available we settled on a set of indicators that is made up of six dimensions with 18 components and 40 indicators.

Dimension	Component	Indicator
Material well-being	Child income poverty	• Children in households below 50% median income
	Deprivation	• Low family affluence • Deprivation of educational items • Cultural deprivation
	Joblessness	• Proportion of individuals in households with children without an employed adult
Health and safety	Health at birth	• Infant mortality rate • Low birth weight
	Immunisation	• Measles

Dimension	Component	Indicator
		• DPT3
		• Pol3
	Child mortality	• Accidental and non-accidental child deaths
Education	Educational achievement	• Reading literacy
		• Mathematics literacy
		• Science literacy
	Educational participation	• Full- and part-time students (15-19)
	Educational aspirations	• Young people not in education, training or employment
		• Young people aspiring to low-skilled work
Children's relationships	Family structure	• Children in single-parent families
		• Children in stepfamilies
	Family relations	• Eating the main meal together
		• Spending time just talking with parents
	Peer relations	• Children finding peers kind and helpful
Subjective well-being	Health	• Self-defined health
	Personal well-being	• Young people with high life satisfaction
		• Young people feeling like an outsider
		• Young people feeling awkward and out of place
		• Young people feeling lonely
	Educational well-being	• Young people liking school a lot
Behaviour and lifestyles	Risk behaviour	• Cigarette smoking
		• Drunkenness
		• Cannabis use
		• Teenage pregnancy rate
		• 15-year-olds who have sexual intercourse
		• Condom use
	Experiences of violence	• Physical fighting
		• Being bullied
	Health behaviour	• Eating fruit every day
		• Eating breakfast every school day

Dimension	Component	Indicator
		• Physical activity • Overweight

3.   METHODS

The objective of this study was to use whatever data of acceptable quality was available to produce an index of child well-being. In searching for data we were guided by our understanding of the concept of child well-being. We searched for data to represent an ecological, multi-dimensional understanding set out in section 2.

However in the end the analysis has been data driven. There are some elements of child well-being that are not represented by any of the available comparative indicators. There are also many elements that are represented less than perfectly – either because the data is out of date, incomplete in its coverage of age groups, incomplete in its coverage of countries or incomplete in the extent to which it represents a given component of well-being.

The first step was to search existing sources and establish a database of indicators related to child well-being. There were two main sources of information:

1. Sample surveys. The most important of these were:

    - OECD Programme for International Student Assessment (PISA)[6]

    - WHO Health Behaviour in School-aged Children Survey (HBSC)[7]

    - European Social Survey (ESS)

    - Luxembourg Income Study (LIS)

    - European Quality of Life Survey (EQLS)

    - European School Survey Project on Alcohol and other Drugs (ESPAD)

    - European Community Household Panel Survey (ECHP)

    - IEA Civic

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[6] Beginning in 2000, the PISA is conducted every three years with the objective of assessing young people's knowledge and life-skills in economically developed countries. The four main areas of assessment are: reading, mathematics and science literacy, study and learning practices, family resources and structure (including pupils' own perspectives of their school-life and peers), and the organisation of schools and school environments. Year 2000 data was collected for 43 countries, including all of the countries featured in this study. In its second wave (2003), PISA collected data for 41 countries. PISA 2003 also included a new assessment of problem-solving skills. Data are collected from nationally representative samples of the school population at around the age of 15 (the end of compulsory schooling in most countries). Schools are sampled on the basis of size with a random sample of 35 pupils for each school chosen. To ensure comparability, data collection systems employ standardised translation and assessment procedures and a collection window is set to ensure that data is collected at comparable times in the school year. Where response rates are low, PISA administrators work with schools and national project managers to organise follow-up sessions. During each PISA round, international monitors review both the national centres and visit at least 25 per cent of the selected schools in each country to ensure quality and consistency of data collection procedures.

[7] The latest HBSC survey was conducted in 2001 and included 21 OECD countries in its total of 35 nations (Australia, New Zealand, Japan and Iceland did not take part). In each participating country, HBSC uses cluster survey techniques to select 1,500 young people at each of three ages - 11, 13, and 15. Consistent procedures are followed to ensure the comparability of survey methods and data processing techniques. Trained administrators are present in the classroom for the administration of all questionnaires.

2. Indicators of various kinds collected routinely by international organisations. The most important of these were:

- OECD Health Database

- OECD Education at a Glance

- OECD Society at a Glance

- OECD Income Distribution and Poverty

- Eurostat Living Conditions and Welfare

- Eurostat Population and Social Conditions

- Eurostat Demographic information

- WHO Mortality Database[8]

- World Bank World Development Indicators

- World Bank Health, Nutrition and Population data

- World Bank Gender stats

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In our initial search for indicators covering the EU25 we accumulated a database containing 614 indicators relevant to child well-being. These were first organised into a set of rough components – child health, education, child poverty and deprivation, subjective well-being, family relations, housing and the environment, peer relations, risk behaviour. Then a selection of the most promising indicators was made. The principles governing this selection were to choose indicators:

1. That best represented a constituent component of the concept of child well-being. So for example in the child health component we included the infant mortality rate.

2. We used as far as possible the child as the unit of analysis – so for example using the percentage of children in poverty rather than the percentage of families with children in poverty.

3. Then where there was a choice we selected the most up to date indicator. Sometimes the most up to date data was not for the same year for all countries – so for example the most recent child poverty rates are for around 2000, for some countries they are 1999 and for some 2001. However, we avoided using data for a single indicator that was dispersed over many years.

4. We almost invariably used data from the same source for a single indicator on the grounds that data from different sources may risk comparability.

5. Some perfectly satisfactory indicators had to be excluded because they were not available for enough countries. We tended to use a 75 per cent test. That is, we used an indicator when it was available for 75 per cent of the countries.

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[8] Interpretation and analysis of the WHO Mortality data is that of the authors and not of the WHO.

6. Dimensions were calculated for countries where the majority of components were available; components were calculated where the majority of indicators were available.

7. Where data was missing for a country component (or dimension) we estimated averages for the indicators (or components) we had.

When we came to adapt the analysis for OECD countries for this Report Card we found that there were many more gaps in the data. All the European Union data sets and surveys were redundant, including the European Social Survey. Although we searched for alternatives covering the OECD, on the 75 per cent test we were forced to exclude Iceland, Japan, Luxembourg, Mexico, South Korea and Turkey. In addition there was a big hole in the analysis for Australia and New Zealand because they do not participate in the HBSC. We also had to drop some indicators from components because they were not available for OECD countries. For example in the risk behaviour component in the EU 25 we had almost complete coverage (92%) on a range of drug taking, drinking and smoking habits from the European School Survey Project on Alcohol and other Drugs – including inhalant abuse – but there was no similar source for the OECD countries.

We also had to drop some components altogether. In particular in the EU 25 version we had relied on EQLS data[9] for the housing and environment component and we could find no alternative data covering OECD countries. We also used CIVED and EUYOUPARTS data to populate the civic participation component for the EU 25 but there were 12 OECD countries missing from CIVED and no alternative source.

As has been explained in Section 1, the OECD child well-being indices employ:

1. 40 indicators

2. these are summarised into 18 components, and

3. the 18 components are summarised into six dimensions.

3.1   Combining the indicators, components and dimensions

The simplest way to summarise is to rank indicators for countries and then to take the mean rank. The chosen method was to take the data for each country on each indicator, then to calculate z scores for each indicator and average the z scores to obtain an average score for a component. Then the average z score for each component was itself averaged to create a dimension average. Z scores (the precise number of standard deviations from the mean, either positive or negative) are a commonly used and accepted statistical technique for standardising data in order to combine them into a scale or categorise population subsamples.[10]

The advantage of using z scores instead of simple rank order is that z scores not only take account of rank order but also the degree of dispersion. Thus, to take one indicator as an

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[9] Actually a special analysis of the data by Professor Tony Fahy.

[10] An example of this method in practical use is the NCHS/WHO international reference data for the weight and height of children, where moderate and severe cases (wasting and stunting) are categorised using z score brackets of between -2 to -3 standard deviations, and three standard deviations below (z score of -3 or below) a point in the distribution of a reference population. (In the case of the NCHS/WHO example this is the median, in our case the mean.) See http://www.who.int/nutgrowthdb/reference/en/, In this case the reference point for the z score is the median instead of the mean.

example – the infant mortality rate per 1,000. Chart 3.1 plots the infant mortality rate against the rank order. Iceland has the lowest rank with IMR at 2.4 per 1,000 and Hungary ranks the highest at 7.3 per 1,000. But that ranking would give no indication of the degree of difference between Iceland and Hungary, nor the shape of the distribution. Iceland is quite similar to Japan (3.0) and Sweden (3.1) but Hungary, with Poland and the USA (7.0), is an outlier. The next country, New Zealand, has an IMR of 5.6.

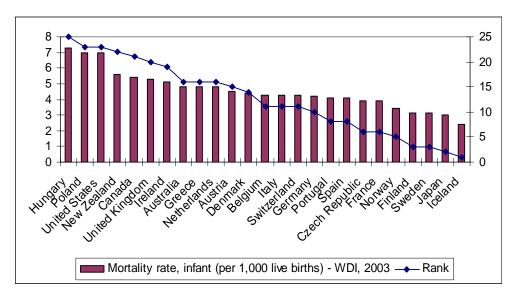**Chart 3.1: Infant mortality rates and rank order**
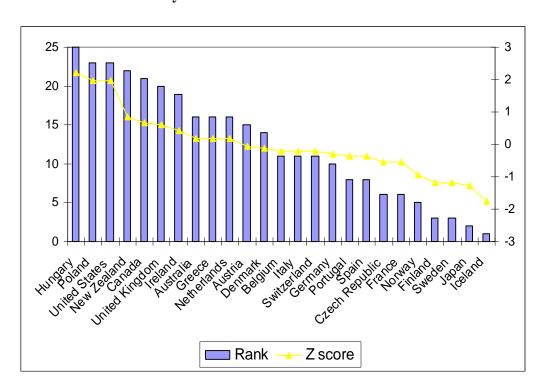
Chart 3.2 shows how the z scores pick up this dispersion in addition to rank. Chart 3.3 shows that z scores follow the shape of the distribution of scores.

Chart 3.2: Infant mortality ranks and z scores

23
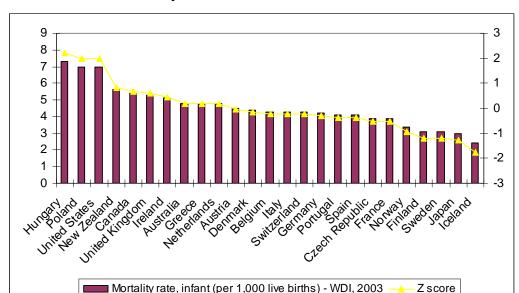
Chart 3.3: Infant mortality rates and z scores

Mortality rate, infant (per 1,000 live births) - WDI, 2003   Z score

When we combine indicators to form components and components to form dimensions we have not imposed any weights. So, for example, to obtain the health from birth component we have combined two indicators – infant mortality rates and rate of low birth weight. We might have sought to argue that infant mortality rates (IMR) should be given greater weight than low birth weight in the component on the grounds that the death of a baby is a more devastating event, or even that IMR are just a better or more reliable indicator of child health. However, even if we had evidence to sustain such arguments, there is still a question of how we decide what extra weight to give to infant mortality. In the absence of any theoretical or empirical justification for weighting we decided to treat each indicator as having equal weight.

Some components are made up by more indicators than others. Regardless of this they are given equal weight.

There is now an important distinction to be made between cause models and effect models (Bollen and Lennox 1991).

If we had been using an effect model we would have expected that changes in a component would have had an impact on all the indicators making up the component. They are dependent on the component. So with effect models one would expect co-variance and one could determine the weighting of an indicator in constructing a component by assessing its contribution to the component by a scalability test such as Cronbach's Alpha or by establishing the underlying component by using factor analysis or principal component analysis.

However, we have no justification for doing any of that because we are using a causal indicator model in this analysis. In a causal indicator model it is the indicators that determine a latent indicator (the component) rather than the reverse. We are assuming that the indicators that make up the component cause the component. We would not expect a change in the component to impact equally on our indicators. Thus they can be considered independent contributors to our component. We do not necessarily expect our indicators to correlate with each other. If the indicators in a component do correlate highly we might consider dropping one, particularly if there was another indicator in the component that is not correlated with them – on the grounds that the correlated indicators might be measuring the same thing and thus overweighting that thing. In the case of the health from birth component we have selected two indicators which we have decided all contribute something to that construct. The two are in fact statistically significantly correlated, but not closely enough to believe that they are each contributing the same thing to the component.

Because we are using a causal model we are also not concerned that some of the indicators in some of the components are unrelated to each other. They are nevertheless making an independent contribution to the component. We need to ensure that all the indicators that contribute to a component have some relevance for the latent construct but this does not mean that they have to be related to each other.

For these reasons the indicators are given equal weight when making up a component. However, given that, there is a problem inherent in using z scores. They have an implicit weight. The more dispersed the distribution of an indicator, the bigger the difference from the mean, the higher the z scores are and thus a more dispersed indicator combined with a less dispersed indicator gives more weight in the resultant construct (component) to the dispersed indicator, particularly at the ends of the distribution. So for example in the health from birth component the indicator low birth weight has the greatest dispersion, a range 4.22 on z scores, compared to Infant mortality 3.97 (see Table 3.1). Therefore when averaging the z scores low birth weight would have slightly more weight in the composite than the other indicator.

Table 3.1: Health at birth component

	Mortality rate, infant (per 1,000 live births) – 2003, OECD Health data	Low birth weight - 2003, OECD Health data	Mortality rate, infant (per 1,000 live births) – 2003, OECD Health data	Low birth weight - 2003, OECD Health data
	Raw data		Z scores	
Australia	4.8	6.4	-0.191	-0.028
Austria	4.5	7.1	0.052	-0.520
Belgium	4.3	6.5	0.214	-0.098
Canada	5.4	5.8	-0.677	0.394
Czech Republic	3.9	6.6	0.538	-0.169
Denmark	4.4	5.5	0.133	0.605
Finland	3.1	4.1	1.186	1.589
France	3.9	6.6	0.538	-0.169
Germany	4.2	6.8	0.295	-0.309
Greece	4.8	8.3	-0.191	-1.364
Hungary	7.3	8.7	-2.216	-1.645
Iceland	2.4	3.1	1.753	2.292
Ireland	5.1	4.9	-0.434	1.026
Italy	4.3	6.5	0.214	-0.098
Japan	3.0	9.1	1.267	-1.926
Netherlands	4.8	5.4	-0.191	0.675
New Zealand	5.6	6.1	-0.839	0.183
Norway	3.4	4.9	0.943	1.026
Poland	7.0	5.9	-1.973	0.323
Portugal	4.1	7.4	0.376	-0.731
Spain	4.1	6.8	0.376	-0.309
Sweden	3.1	4.5	1.186	1.308
Switzerland	4.3	6.5	0.214	-0.098
United Kingdom	5.3	7.6	-0.596	-0.872
United States	7.0	7.9	-1.973	-1.083

We actually control to some extent for the impact of this implicit weighting when we 'reset' the distribution when summarising indicators into components and components into dimensions.

4. FINDINGS

4.1 Children's Material well-being

There are three components that represent children's material well-being. They are:

1. Relative child income poverty
2. Parental joblessness and
3. Child deprivation

Children's economic situation influences their well-being and well-becoming in many dimensions. Poverty and deprivation impact on child well-being both directly through the lack of economic resources and indirectly through strain on parents' well-being, conflicts and necessary adjustments in the family's lifestyle.

Poverty is linked to poor health outcomes. It increases the risk of premature or stillbirth (Duncan and Brooks-Gunn 2000, Ekeles et al. 1994). Poor children are more often hospitalised and those living in deprived neighbourhoods experience more injuries (Duncan and Brooks-Gunn 2000, Guttmann et al. 2004, Haynes et al. 2003). Children from families with a low level of education or long-term unemployment often take less part in medical early screening programmes and get less vaccination (Neuberger 1997, Schone et al. 1997). The risk of suffering from longstanding health problems, dental health problems, as well as asthma increases with decreasing income (Beresford et al. 2005, Dumesnil and Le Fur 2003).

Poverty also has a direct impact on the cognitive development of children (cf. Peters and Mullis 1997, McLanahan 1997). The adverse effect of early poverty on the cognitive development of preschoolers can already be seen at age 5 with persistent poverty (>36 months) having twice the effect of transient poverty. An increase in average family income is associated with better test performance (Duncan et al. 1994, Smith et al. 1997). Other studies find that early childhood poverty is a risk factor for later performance at school with differences in math and reading achievements already appearing in first grade (Lipman and Offord 1997, Entwistle and Alexander 1992, cf. Gershoff et al. 2001).

While in early childhood impacts of poverty on the psychosocial well-being of children are mainly mediated by family relations, direct consequences of poverty gain importance in later childhood as girls and boys have to deal directly with the experience of having less money than others (McLanahan 1997, Bacher 1997). This can negatively influence peer relations and leisure activities because poor children might not be able to afford having the 'right' clothes or to participate in activities of their peers. Poverty, parental unemployment and poor living conditions can lead both to withdrawal by children themselves and to bullying and exclusion from their peer group (Ridge 2002, Hoelscher 2003).

There is also some evidence that childhood poverty is associated with negative outcomes for young adults. However, two studies analysing longitudinal data found no direct association

between economic conditions and young adults' well-being. Impacts of poverty were mediated by family factors like the quality of family relations, single parenthood and joblessness as well as children's educational achievement (Sobolewski and Amato 2005, Ermisch et al. 2004).

Relative child income poverty

Though there is general agreement that income poverty is an important element of child well-being, there is considerable disagreement about how child poverty should be represented empirically. These disagreements are concerned with the limitations of income data: relative thresholds, equivalence scales and the unit of analysis (see Bradshaw 2006). We decided that ideally we would like to incorporate a range of different measures in order to represent child poverty. These might have included:

- Relative child poverty rate

- Absolute child poverty rate

- Poverty gaps for children

- An indicator of persistent poverty for children

- A subjective poverty measure

There are three sources of data for a relative child poverty rate: Eurostat, the Luxembourg Income Study (LIS 2005) and OECD (Förster and D' Ercole 2005). Innocenti Report Card 6 used LIS and OECD data (UNICEF 2005, Corak 2005), but we decided to use the OECD data because it was available for a more recent year than LIS and for more countries than Eurostat.[11]

However, the OECD study did not collect an absolute poverty rate and LIS data for a number of countries is too old to apply an absolute measure based on an OECD average in 2000. The results would not be consistent. Likewise poverty gap data based on LIS cannot be computed for a sufficient number of countries. There are no OECD data sources for persistent poverty or a subjective poverty measure for families with children.

So the only child income poverty indicator we were able to use is the OECD relative measure summarised below. Income data is however limited in that it is relative to each country and the actual poverty thresholds are very different. For example the 50 per cent poverty threshold for a couple with two children in Hungary was $6764 per year compared with $23,954 per year in the USA (calculated using OECD purchasing power parities and Förster and D' Ercole 2005: Annex Table 2). It is therefore important to moderate this poverty measure with more direct measures of deprivation.

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[11] With the exception of Belgium, whose data from the OECD was considered too dated (1995), and based on tax file data and as such likely to underestimate actual values. For this country LIS data for 2000 was used.

Percentage of children (0-17) in households with equivalent income less than 50 per cent of the median

Source: OECD (Förster and D'Ercole 2005).

Dates: 2000, except 1999 (Australia, Austria and Greece), 2001 (Germany, New Zealand and Switzerland).
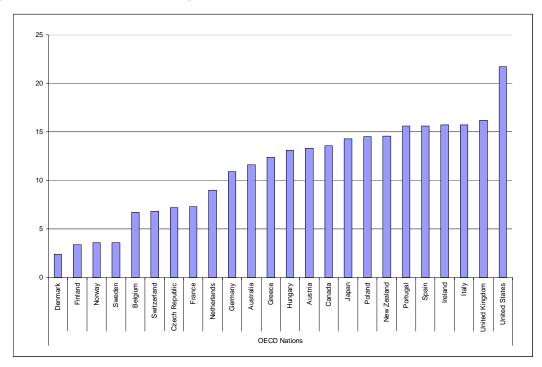
Age group: 0-17.

Missing countries: Iceland.

Comments: poverty threshold set at 50 per cent of the median disposable income of the total population.

Results: Chart 4.1.1 shows that child poverty rates range from 2.4 per cent in Denmark to 21.7 per cent in the United States. Less than four per cent of children in all the Nordic countries live in poverty. Three of the four countries with the highest child poverty rates are Anglophone countries, and from those the United States has the highest rate by some margin. Data for non-OECD nations is not included in this chart.

Chart 4.1.1: Relative income poverty: percentage of children (0-17) in households with equivalent income less than 50 per cent of the median

Parent's joblessness

Living in a workless household is associated with a very high poverty risk, particularly if this situation persists for several years. A recent study on severe and persistent poverty in Britain based on British Household Panel Survey showed that only four per cent of children not living in poverty were living in a workless household, while 74 per cent of children in persistent poverty and even 86 per cent of children in persistent and severe poverty were living in a family with no parent working (Magadi and Middleton 2005).

Percentage of individuals in working-age households with children without an employed adult OECD (including single-parent and couple households).

Source: OECD (2005), Israeli data from Asher Ben-Arieh (2006).
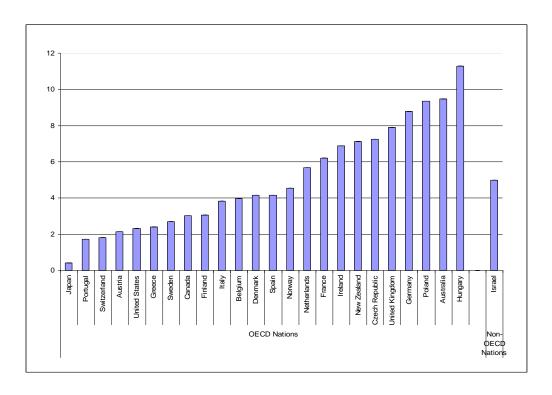
Dates: 2000, 1999 (Japan and Canada), 1998 (Switzerland), 2001 (Spain, the Netherlands and Germany), 2002 (Austria, Norway and Poland).

Age group: up to 18 years.

Missing countries: Iceland.

Results: In Chart 4.1.2 the proportion of children without an employed parent ranges from 0.4 per cent in Japan to 11.3 per cent in Hungary. Along with Japan, children from Portugal, Switzerland, Austria and the United States are less likely to be living in a workless household. The only non-OECD country to provide data was Israel, which compares favourably with the OECD group, with proportions similar to middle of the range countries.

Figure 4.1.2: Percentage of individuals in working-age households with children without an employed adult OECD

Deprivation

Data on deprivation gives a more direct insight into children's economic situation than income data alone as it gives information on the resources that actually reach children. We include three indicators of children's deprivation: low family affluence, deprivation of educational resources and children who have less than ten books at home. The indicators capture different dimensions of children's economic resources. While low family affluence gives information on the general economic situation of the family and children's opportunity to participate in a standard of living that is regarded as 'normal' in rich countries, the other two indicators point to more specific problems. Deprivation of educational resources like a quiet place to study, textbooks or a computer disadvantages children in their education as they may be hindered in their studies and homework tasks. Access to educational resources has been identified as one explanation for the association between family income and children's educational achievement (Sobolewski and Amato 2005). The third indicator, having less than ten books as home, finally refers to cultural deprivation. Cultural capital has been associated with beneficial outcomes for children in terms of educational achievement, as well as being thought of as 'status' items, facilitating social inclusion (Sullivan 2001).

Percentage of children reporting low family affluence

Source: HBSC 2001.

Dates: 2001.

Age group: 11, 13, 15-year-olds.

Missing countries: Australia, Iceland, Italy, New Zealand.

Comments: The HBSC Family Affluence Scale (FAS) is derived by identifying the percentage of children from each country who self report low levels of wealth based upon 'family item' ownership of a car, van or truck, whether they have their own bedroom, the number of family holidays in the last twelve months, and the number of computers owned by the family. With positive answers adding to a possible score of eight, the percentage of children in each nation scoring three points (within the low category of the HBSC three-point ordinal scale) or below on the FAS scale is used as the indicator of deprivation (Currie et al. 2004: 15).

Results: Chart 4.3 shows that among the OECD countries for which we have data the proportion with FAS scores below the threshold varies from six per cent in Norway to 43 per cent in Poland. The Southern European countries and the former Eastern block countries have FAS scores appreciably higher than the other OECD countries. Among the non-OECD countries Slovenia and Israel have FAS results comparable to the OECD group, Estonia, Malta and Croatia are comparable to the worst performing OECD countries, and Lithuania, Latvia and the Russian Federation all have significantly higher percentages than any country in either group.
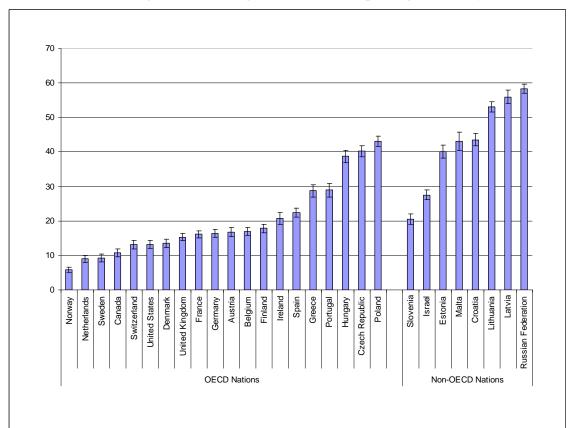
Chart 4.1.3: Percentage of children age 11, 13 and 15 reporting low family affluence

Percentage of children reporting less than six educational possessions

Source: PISA 2003.

Dates: 2003, 2000 (Israel).

Age group: 15-year-olds.
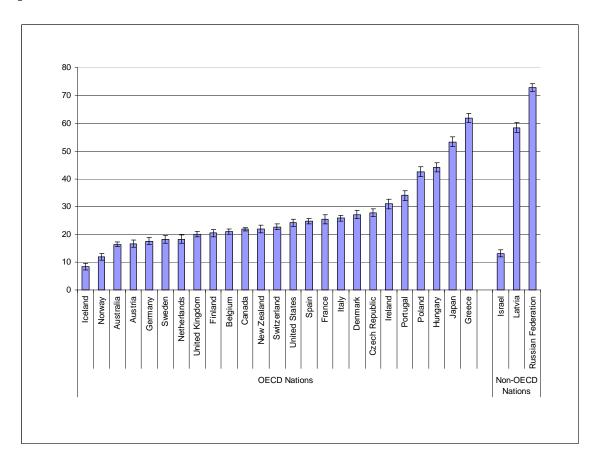
Missing countries: none.

Comments: The educational deprivation indicator identifies the percentage of children aged 15 in each country with less than six (the OECD median) educational items (out of eight). The eight items include: a desk to study at, a quiet place to study, a computer for school work, educational software, an internet connection, their own calculator, a dictionary, and school textbooks (OECD/PISA, 2005c: 11).

Results: In Chart 4.1.4 between 8.4 per cent and 61.8 per cent of young people have limited access to educational resources in the OECD group, with most countries in a range of 15 to 30 per cent. Iceland and Norway do best on this indicator while Greece, Japan, Hungary and Poland have rates of deprivation of educational items above 40 per cent. Among the non-OECD countries Israel has a very low level on this deprivation indicator, comparable to the level reported by Norway (around 12 per cent). Latvia and the Russian Federation perform on a par with the worst level reported in the OECD group.

Chart 4.1.4: Percentage of children age 15 reporting less than six educational possessions

```
80

70

60

50

40

30

20

10

 0
     Iceland Norway Australia Austria Germany Sweden Netherlands United Kingdom Finland Belgium Canada New Zealand Switzerland United States Spain France Italy Denmark Czech Republic Ireland Portugal Poland Hungary Japan Greece    Israel Latvia Russian Federation

                                              OECD Nations                                                                                    Non-OECD
                                                                                                                                               Nations
```

Percentage of children reporting less than ten books in the home

Source: PISA 2003.
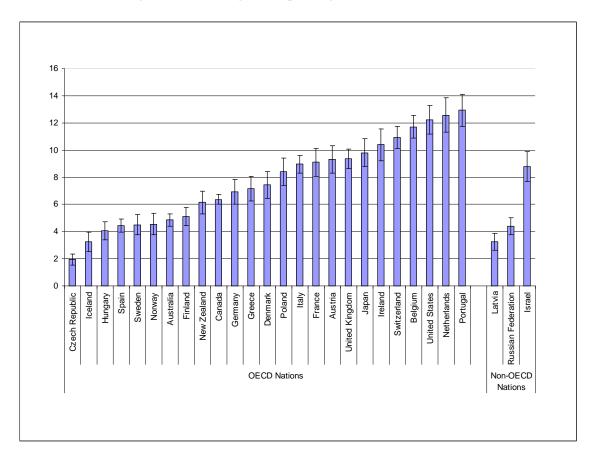
Dates: 2003, 2000 (Israel)

Age Groups: 15-year-olds

Missing countries: none

Results: Chart 4.1.5 shows that In the OECD group the variation in proportions of children living in homes with less than ten books ranges from 1.9 per cent in the Czech Republic to 12.9 per cent in Portugal. The distribution is interesting in that there are no discernible groups based on geography, language or wealth. Non-OECD nations have percentages well within the range of the OECD group, and on this deprivation indicator Israel is now performing worst, whereas Latvia and the Russian Federation do significantly better than two-thirds of the OECD nations.

Chart 4.1.5: Percentage of children age 15 reporting less than ten books in the home

Deprivation composite

The correlation matrix (Table 4.1.1) shows that there is a fairly strong association between low family affluence and educational deprivation. However there is no significant association between ownership of less than ten books and the other deprivation indicators. This might point to the fact that ownership of books gives more information on families' cultural capital than their economic capital.
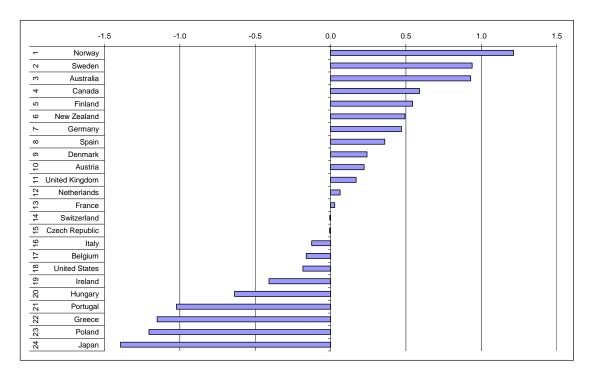
Table 4.1.1: Deprivation correlation coefficients

	Percentage of children reporting low affluence, on the Family Affluence Scale	Pupils reporting less than 6 educational possessions (%)	Pupils with less than 10 books in the household (%)
Percentage of children reporting low affluence, on the Family Affluence Scale	1		
Pupils reporting less than 6 educational possessions (%)	0.71**	1	
Pupils with less than 10 books in the household (%)	-0.25	0.15	1

** Significant at the 0.01 level.

Chart 4.1.6 presents the deprivation league table based on the average of the z scores for the three deprivation indicators. Norway, Sweden, Australia and Canada come top of the league. Portugal, Greece, Poland and interestingly Japan are the most deprived countries.

Chart 4.1.6: Deprivation

Children's material well-being in rich nations

It can be seen in Table 4.1.2 that relative income poverty correlates significantly and positively with deprivation. There are no significant associations between the parent's joblessness and either of the other two composite indicators.
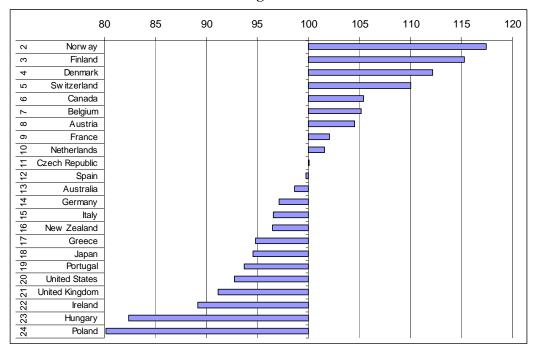
Table 4.1.2: Correlation matrix of material deprivation indicators

	Relative child income poverty	Deprivation	Parent's joblessness
Relative child income poverty	1		
Deprivation	0.44*	1	
Parent's joblessness	0.07	-0.11	1

* Significant at the 0.05 level.

Chart 4.1.7 presents a final children's material well-being league table based on the average of z scores for the components distributed around the mean of 100 for all countries. The best performing countries in this dimension are the three Nordic countries of Sweden, Norway and Finland. The United Kingdom, Ireland, Hungary and Poland do worst.

Chart 4.1.7: Children's material well-being in rich nations

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Children's Health and Safety

Children's health and safety is represented by three components covering:

1. Health from birth
2. Immunisation
3. Child mortality

Health at birth

Health at birth combines infant mortality and low birth weight. Health at birth is of fundamental importance for children's physical, cognitive and psychosocial development. Infant mortality rates are widely used as a basic indicator for health inequalities between countries, as there are associations between the standard of living and infant mortality (Ferguson et al. 2006; Cantanero et al. 2005).

Risk factors around birth are linked to a wide range of developmental problems. Low birth weight is linked to a high risk of infant mortality and problems in the later cognitive and physical development (Klebanov et al. 1994, McCarton et al. 1997). While many problems seem to normalise during early childhood, there is some evidence that behavioural problems of low birth weight children become more pronounced at school age. Low birth weight can be a solely biological risk but it is also associated with mothers' health, age and marital status as well as psychosocial family risks, including poverty. Whether or not early disadvantages become chronic is mainly mediated by parent-child interactions and parenting style (Laucht et al., 2001; Barrett, 1999; Ferguson et al., 2006).

Infant mortality rate (per 1000 live births)

Source: OECD Health Data, 2005.

Dates: 2003, 2002 (Canada and the USA), 2001 (New Zealand).

Age group: infants.
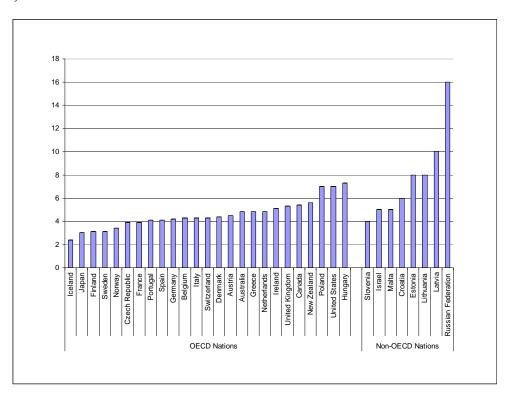
Missing countries: none.

Comments: Infant mortality rates are not always comparable as differences in national legislation lead to different inclusion criteria.

Results: Infant mortality rates in Chart 4.2.1 range from 2.4 in Iceland to 7.7 in Hungary, with the majority of countries having rates between 4 and 5. Nordic countries, with the exception of Denmark, are towards the lower end of the scale, and Anglophone countries can be found in the mid to high end of the range. Non-OECD countries are in two groups, with the Baltic States and the Russian Federation having rates higher than all members of the OECD group, and the other non-OECD nations with rates within the OECD range.

Chart 4.2.1: Infant mortality rate (deaths before the age of 12 months per 1000 live births)

Low birth weight (% births less than 2500g)

Source: OECD Health Data.
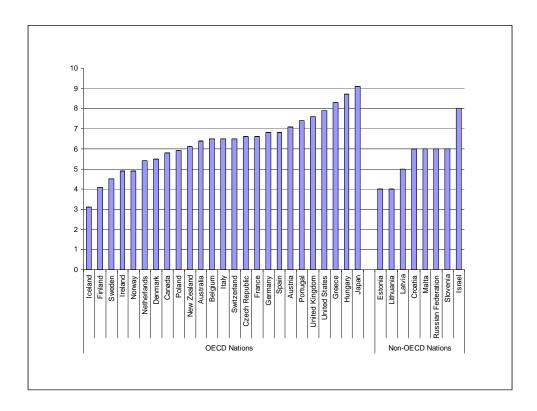
Dates: 2002, 2003 (IS), 2001 (CA, ES, IE, IT, NL), 2000 (AU, GR), 1999 (DE), 1997 (BE).

Age group: infants.

Missing countries: none.

Results: Low birth weight in the OECD nations (see Chart 4.2.2 below) ranges from 3.1 in Iceland to 9.1 in Japan. Again the Nordic countries are amongst those with the lowest rates. Non-OECD countries report within a range of 4 to 8, at levels comparable to the majority of the OECD group.

Chart 4.2.2: Low birth weight rate (% births less than 2500g)
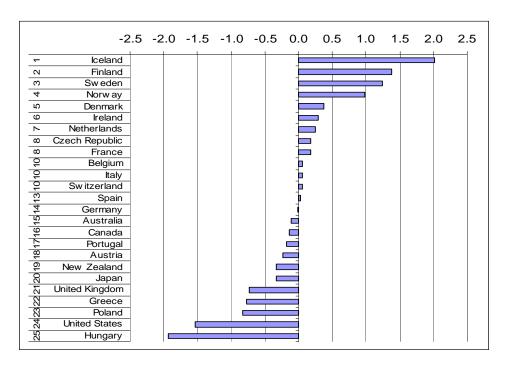
Health at birth composite

The infant mortality and low birth weight rates are significantly and positively correlated (r=0.43 significant at the 0.05 level).

Chart 4.2.3 presents the ranking of countries for the child health at birth indicator using the average of z scores for the two indicators. While a large number of countries are close to the OECD average, there are some countries standing out at both ends of the table. Iceland and the Nordic countries do best, while the United States and Hungary do worst.

Chart 4.2.3: Child health at birth

| | | -2.5 | -2.0 | -1.5 | -1.0 | -0.5 | 0.0 | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 |

Ranked bar chart (horizontal), countries with values:

Rank	Country
1	Iceland
2	Finland
3	Sweden
4	Norway
5	Denmark
6	Ireland
7	Netherlands
8	Czech Republic
8	France
10	Belgium
10	Italy
10	Switzerland
13	Spain
14	Germany
15	Australia
16	Canada
17	Portugal
18	Austria
19	New Zealand
20	Japan
21	United Kingdom
22	Greece
23	Poland
24	United States
25	Hungary

Immunisation

Data on children's immunisation gives information on preventative measures and health promotion in early childhood. There is some evidence that immunisation take-up is linked to families' social status (cf. Neuberger 1997, Schone et al. 1997). However, in some countries there has been negative publicity in recent years regarding the safety of child immunisation, particularly the MMR vaccination, so that differences across countries might indicate both that parents are not able to take preventive measures for children's health and on the contrary that parents are particularly concerned about the well-being of their children. However, lowered vaccine coverage threatens herd immunity so that the risk of an outbreak and spread of infectious diseases rises (Beresford et al. 2005).

Measles Immunisation, percentage of children aged 12-23 months

Source: WDI 2003.

Age group: infants.

Missing countries: none.

Results: Measles immunisation coverage tends to be lower than that for DPT3 or Pol3. In Chart 4.2.4 rates range from less than 80 per cent in Belgium, Ireland and Austria to 99 per cent in the Czech Republic, Hungary and Japan. Children in some of the poorer OECD nations are more likely to receive immunisation for measles. Non-OECD nations on average have higher immunisation rates for measles than the OECD group, ranging from 90 to 99 per cent.
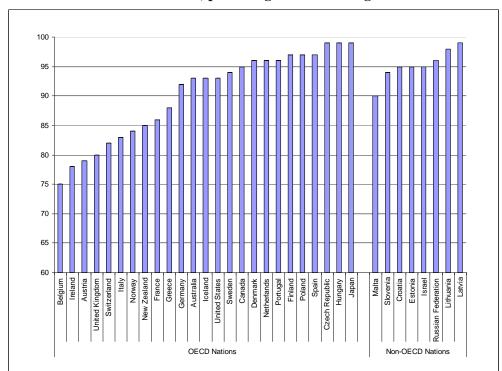
Chart 4.2.4: Measles immunisation, percentage of children aged 12-23 months

DPT3 immunisation, percentage of children aged 12-23 months

Source: HNP 2002.

Age group: infants.

Missing countries: none.

Comments: DPT3 is the final dose in a series of immunisations that can prevent diphtheria, pertussis and tetanus.

Results: In Chart 4.2.5 DPT3 immunisation rates range from 83 per cent in Austria to 99 per cent in Hungary and Poland. There are a number of countries with almost universal coverage.
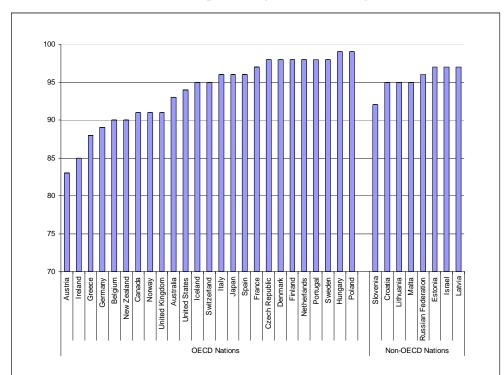
Chart 4.2.5: DPT3 immunisation, percentage of children aged 12-23 months

Pol3 immunisation, percentage of children aged 12-23 months

Source: HNP 2002.

Age group: infants.
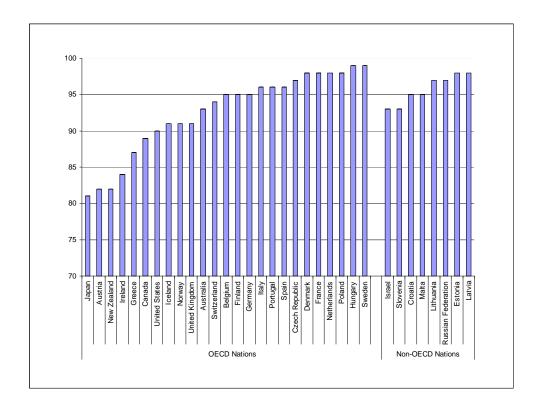
Missing countries: none.

Comments: Pol3 is the final dose in a series of immunisations that can protect against polio.

Results: In Chart 4.2.6 Pol3 immunisation rates in the OECD group range from 81 per cent in to 99 per cent in Hungary and Sweden. All of the non-OECD nations have coverage upwards of 90 per cent, comparable to the mid to high range of OECD nations.

Chart 4.2.6: Pol3 immunisation, % children aged 12-23 months

Immunisation composite

Table 4.2.1 shows there are strong positive correlations between the rates of measles and DPT3 immunisations, and polio and DPT3 immunisations. Rates of polio and measles immunisation are not significantly associated.
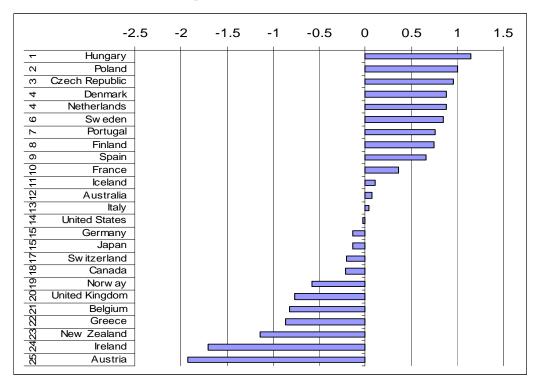
Table 4.2.1: Immunisation correlation matrix

	Immunisation, measles	Immunisation, DPT3	Immunisation, Pol3
Immunisation, measles	1		
Immunisation, DPT3	0.71**	1	
Immunisation, Pol3	0.37	0.72**	1

** Significant at the 0.05 level.

Chart 4.2.7 combines the immunisation rates by averaging z scores. Hungary. Poland and the Czech Republic do best in the immunisation league table while New Zealand, Ireland and Austria do worst.

Chart 4.2.7: Immunisation composite

		-2.5	-2	-1.5	-1	-0.5	0	0.5	1	1.5
1	Hungary									
2	Poland									
3	Czech Republic									
4	Denmark									
4	Netherlands									
6	Sweden									
7	Portugal									
8	Finland									
9	Spain									
10	France									
11	Iceland									
12	Australia									
13	Italy									
14	United States									
15	Germany									
15	Japan									
17	Switzerland									
18	Canada									
19	Norway									
20	United Kingdom									
21	Belgium									
22	Greece									
23	New Zealand									
24	Ireland									
25	Austria									

Child mortality

Child deaths are the most basic indicator of children's safety and UNICEF has published two Innocenti Report Cards on this issue, one on children's accidental death (2001a) and one on child maltreatment death (2003). Children's accidental deaths, murder and suicide are rare events but for every child who dies many other children survive accidents and violence. Children's death rates are thus both an indicator for the most severe violation of children's rights and a proxy for the safety of children.

Accidental and non-accidental deaths under 19 per 100,000, average of latest three years available

Source: WHO Mortality Database 2005.

Age group: all children under 19 years.
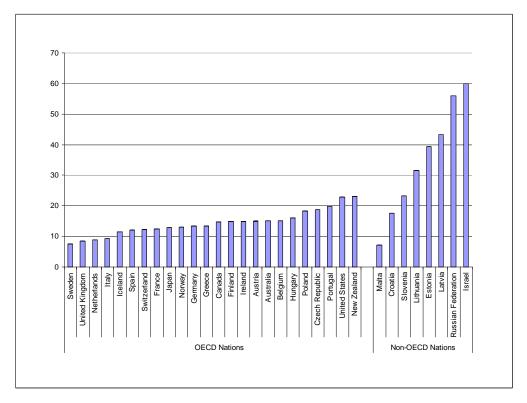
Missing countries: Denmark.

Dates: 1993-1995 (FI, HU, IS, NL, NO), 1994-1996 (PL, SE), 1995-1997 (AU, BE, DE), 1996-1998 (ES, US), 1997-1999 (CA, FR, NZ, UK), 1999-2001 (AT, IE, IT, PT), 2000-2002 (CH, GR).

Comments: We combined data from the WHO Mortality Database for all kinds of accidental deaths, murder, suicide and deaths with undetermined cause into one indicator. As case numbers are still very small we used averages of the three most recent available years to level out possible variations between single years.

Results: In Chart 4.2.8 mortality rates in the OECD nations range from 7.6 deaths per 100,000 in Sweden to 23.1 in New Zealand. Alongside Sweden, the United Kingdom, the Netherlands and Italy have rates below ten accidental and non-accidental deaths in 100,000 individuals for this age group. The worst performing country, New Zealand, and the United States have levels more than twice this. Mortality rates for under 19's in the OECD group are markedly better than those for the non-OECD group. Only Malta, Croatia and Slovenia have rates within the OECD range. Rates in the Russian Federation and Israel are six times that of rates for the best performing OECD nations.

Chart 4.2.8: Accidental and non-accidental deaths under 19 per 100,000, average of latest three years available

Gaps in data availability

Much of this health data is focused on birth and early childhood or on specific diseases. There are no satisfactory comparative indicators of children with special needs because of disabilities or chronic illnesses. Comparative data is also needed on the incidence of violence within the family as well as children in institutions or receiving social support because of family problems. However, there are no comparative data sources in this field and because of the high number of unreported cases and different support systems even reliable national data is hard to obtain.

Child health and safety in rich nations

Table 4.2.2 shows that there is weak positive correlation between health at birth and child mortality but no significant associations between the other components.
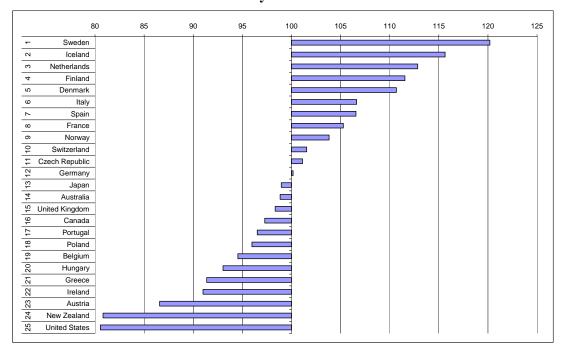
Table 4.2.2: Correlation matrix of the health and safety component

	Health at birth	Immunisation	Child mortality
Health at birth	1		
Immunisation	0.05	1	
Child mortality	0.42*	0.06	1

* Significant at the 0.05 level.

Chart 4.2.9 presents a final children's health league derived from average scores for the components distributed around the mean of 100 for all countries. Sweden, Iceland, the Netherlands, Finland and Denmark do best on this dimension. The United States, New Zealand and Austria do worst.

Chart 4.2.9: Children's health and safety in rich nations

4.3   Education

We obtained data to represent three components of education well-being:

1. Educational achievement
2. Educational participation
3. Youth labour market outcomes from education.

Educational achievement

Children's educational achievements are indicators both for their well-being today and their future life chances. Poverty and social exclusion have a strong impact on children's educational outcomes. Poverty is directly linked to lower educational outcomes, with impacts being stronger the earlier in life poverty occurs, the longer it lasts and the lower parents' income is (Peters and Mullis 1997, McLanahan 1997, Lipman and Offord 1997). Apart from children's economic situation, low educational outcomes are often the result of a culmination of disadvantages children face in their family, their neighbourhood and at school that in turn may lead to limited access to and participation in education. Children who – for whatever reason – feel overburdened with their life situation are at risk of doing less well at school, getting into trouble with teachers and peers or dropping out completely (cf. Ridge 2002, Hoelscher 2003). Again research suggests that family factors are decisive mediators of children's achievements, particularly parents' education, access to educational resources, parenting practices and the quality of family relations as well as conflicts and psychosocial problems in the family (Haveman et al. 1997, Walper 1999, Felner et al. 1995).

This component includes data on reading literacy, mathematical literacy and scientific literacy, all drawn from the OECD PISA survey. PISA data is not focused on school curricula and formal examinations but on young peoples' capabilities to apply knowledge in daily life (cf. Coles and Richardson, 2005).

Reading literacy achievement

Source: OECD PISA (2003).

Age group: 15-year-olds.

Dates: 2003, 2000 (Israel).
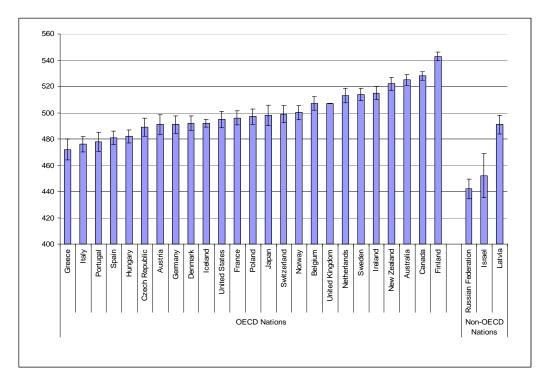
Missing countries: none.

Comments: Israeli data is taken from the 2000 survey (OECD PISA, 2000). Here and elsewhere UK data has to be treated with caution: the UK results in 2003 were not published in the OECD report because low initial response rates and replacement rates make them unreliable (DfES, 2004). Nevertheless we have obtained the data from national sources, and the ranking of the UK is roughly similar to where it came in the PISA 2000 survey.

Results: In Chart 4.3.1 PISA scores are constructed on a points scale with an average of 500 across all students in all countries. Results for reading literacy range from 472 in Greece to 543 in Finland. The Southern EU countries populate the lower end of the scale, with a number of other countries showing significantly lower than average scores. It is notable that among the non-OECD countries only Latvia performs within the range of the OECD group.

Chart 4.3.1: Reading literacy achievement, age 15
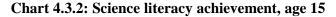
Science literacy achievement

Source: OECD PISA 2003

Age group: 15-year-olds

Dates: 2003, 2000 (Israel)

Missing countries: none

Comments: UK data has to be treated with caution (see earlier). Israeli data is taken from the 2000 survey (OECD PISA, 2000).
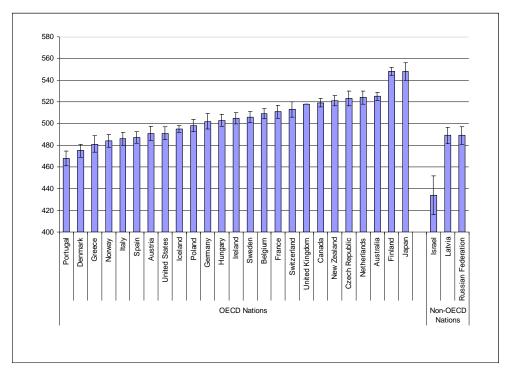
Results: In Chart 4.3.2 Finland and Japan are doing significantly better than other nations in the OECD group. Countries performing significantly higher than the average include the Anglophone countries (except the United States). Young people from Southern European nations are doing worst along with Denmark and Norway. Of the non-OECD nations Israel performs significantly worse than all of the OECD nations. Latvia and the Russian Federation have similar scores to the low to mid-low OECD group.

Chart 4.3.2: Science literacy achievement, age 15

Mathematics literacy achievement

Source: OECD PISA 2003.

Age group: 15-year-olds.

Dates: 2003, 2000 (Israel).

Missing countries: none.

Comments: UK data has to be treated with caution (see earlier). Israeli data is taken from the 2000 survey (OECD PISA, 2000).

Results: In Chart 4.3.3 students in Finland do best, followed by the Netherlands and Japan. As with reading literacy, young people in Southern Europe are doing worst with Greece, Italy, Portugal, the United States and Spain again performing significantly lower than the OECD average. Of the non-OECD nations Latvia and the Russian Federation are performing on a par with the Southern European nations and the United States and Israel scores worst.
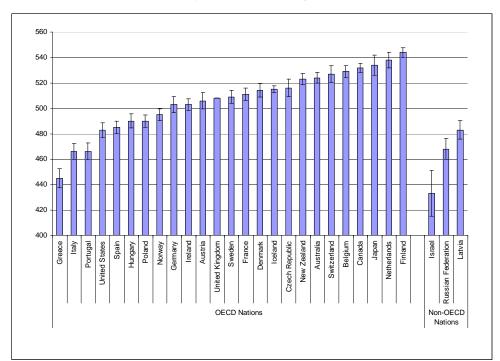
Chart 4.3.3: Mathematics literacy achievement, aged 15

Achievement composite measure

It can be seen in Table 4.3.1 that there is a strong positive association between scores on these three achievement indicators.
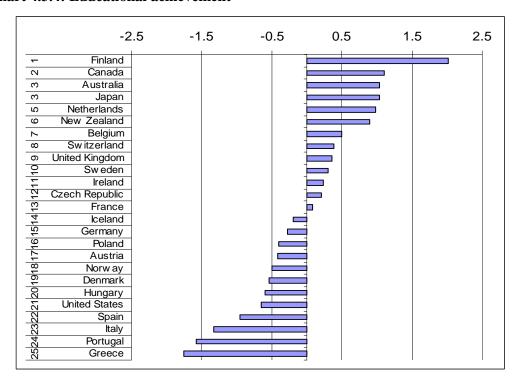
Table 4.3.1: Correlation matrix of educational achievement

	PISA reading: mean literacy achievement - 2003	PISA science: mean literacy achievement 2003	PISA maths: mean literacy achievement - 2003
PISA reading: mean literacy achievement - 2003	1		
PISA science: mean literacy achievement - 2003	0.70**	1	
PISA maths: mean literacy achievement - 2003	0.76**	0.78**	1

** Significant at the 0.01 level.

Chart 4.3.4 below presents the standardised educational achievement composite based on the average of the two z scores. It shows that Finland has the highest educational achievement levels by some margin and the Southern EU countries report the lowest levels of educational achievement.

Chart 4.3.4: Educational achievement

Educational participation

Indicators on children and young people's participation in education point to their well-becoming rather than their well-being. While primary and secondary enrolment in school is compulsory and universal across the OECD there are considerable discrepancies in participation in childcare/pre-school on the one hand and further education on the other.

The impacts of childcare on children's development depend on many factors, including the age of the child, the access to and quality of childcare provision and the family situation. For children below the age of two results are mixed. During the first year after birth maternal full-time employment is linked to negative outcomes on children's health (Berger et al. 2005, Gregg et al. 2005). Research in the US and the UK shows an association between participation in childcare at a very young age and anti-social behaviour of pre-school children. On the other hand early childcare was beneficial for children's cognitive development and – in the UK study – on other dimensions of social development (cf. Coles and Richardson 2005). From about age three, the participation in high quality childcare is linked to enhanced social, emotional and sometimes also linguistic competences for both low- and middle-income children (Duncan and Brooks-Gunn 2000). Early-childhood education programmes for poor children have also resulted in enhanced verbal abilities, reasoning skills, persistence and enthusiasm in learning and reduced behavioural problems (Yoshikawa 1994, Ramey and Ramey 1998). As we were not able to find a source for childcare participation of 3-5-year-olds we could not include this indicator.

Participation in post-compulsory education is linked to better employment prospects and thus to higher incomes and lower rates of unemployment. There is also evidence for increased labour force participation.

Percentage of 15-19-year-olds in education

Source: OECD 2003 (Education at a Glance 2005)
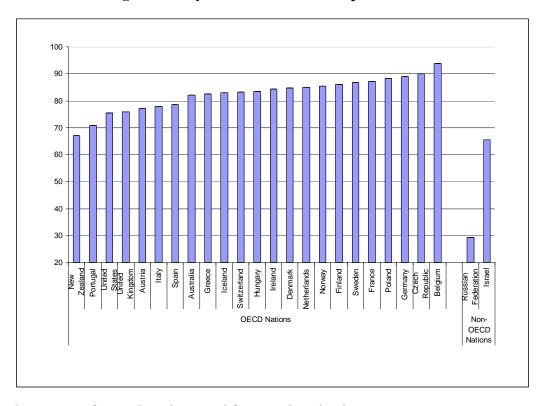
Age group: 15-19-year-olds

Dates: 2003

Missing countries: Canada, Japan

Results: In Chart 4.3.5 proportions of full- and part-time students in public and private (educational) institutions are relatively high in all of the OECD nations. The highest rates are found in Belgium and the Czech Republic. The lowest participation rates are in New Zealand, Portugal, the United States and the United Kingdom. Less than a third of Russian students stay in education and the rate in Israel is also low.

Chart 4.3.5: Percentage of 15-19 year olds in full time or part time education

Youth outcomes from education: workforce and aspirations

Young people's chances on the labour market are crucial for their inclusion in society and their economic and social well-being. How well young people manage the transition from school to the labour market is much influenced by their educational achievements and qualifications but also by structural factors, i.e. the education, training and employment

opportunities for young people. This component combines the percentage of young people (15-19) not in education, training or employment (NEET) as indication of the number of young people at risk of exclusion from the labour market, and aspirations to low-skilled work as indication of children's own perceptions of their labour market chances.

Research in the UK shows that low educational achievement and qualification is the main factor for being NEET. There are gender differences: while living in the inner city is a risk factor for boys, for girls the interest parents have in their education is an important factor. Both groups however also had subsequent difficulties in entering the labour market. Among the girls many were teenage mothers, with direct impact on their educational and vocational careers (Bynner and Parsons 2002).

The OECD (2005) has analysed the transition of young adults (20-24) with low educational achievements from education into work. They identified low parental education as key factor for low educational achievements of young people. Foreign-born young adults were particularly disadvantaged, both in regard to educational qualifications and labour market participation. There are also gender differences. Young men were more likely to have a low level of education and not to be in education than young women. However, within this group young men with low levels of education were more likely to be working than young women. One reason for this can be seen in early family formation and childbearing.

Percentage of the youth population not in education and not employed aged 15-19 (2002)

Source: OECD 2003 (Education at a Glance 2005)

Age group: 15-19-year-olds

Dates: 2003: 2002 (Iceland, Italy, the Netherlands and the United States)

Missing countries: Japan, New Zealand

Results: In Chart 4.3.6 the lowest rates of young people not in education or employment can be found in Norway, Denmark, Sweden, Poland, Iceland and the Netherlands. France has the highest proportion of 15-19 NEET levels by some margin. Israel, the only non-OECD country with data for this indicator, has NEET levels at least twice as high as all OECD countries except France.
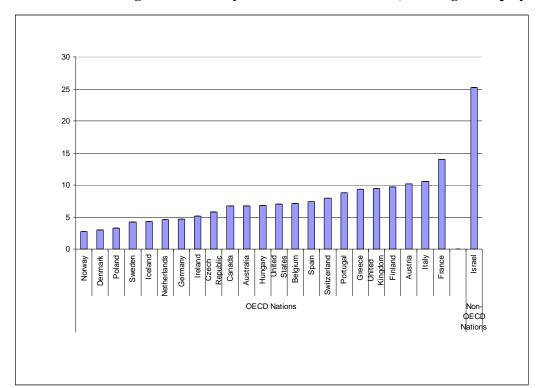
Chart 4.3.6: Percentage of the 15-19-year olds not in education, training or employment

Percentage of pupils aged 15 years aspiring to low-skilled work

Source: OECD PISA 2000 (Education at a Glance 2004).

Age group: 15-year-olds.

Dates: 2000.

Missing countries: none.

Comments: For the Netherlands response rates in PISA 2000 were too low to ensure comparability. Findings should be treated with caution.
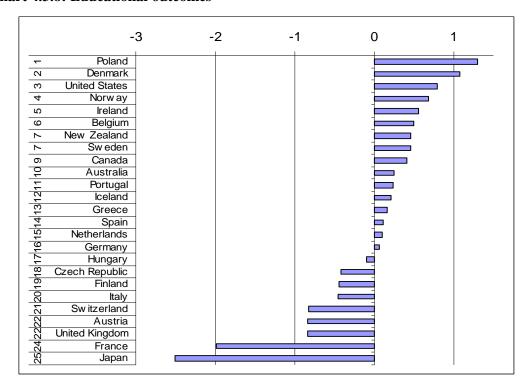
Results: In Chart 4.3.7 the smallest proportion of young people aspiring to low-skilled work can be found in the United States. On this indicator they have significantly lower levels than all other countries except Poland. Japanese pupils report significantly higher proportions than any other country, with over half of pupils aspiring to low-skilled work. The non-OECD nations fall within the range of OECD countries.

Educational outcomes composite measure

The two indicators are not significantly associated with each other (r=0.20 ns).

Chart 4.3.8 provides a league table of the average of the z scores for these indicators. Poland, Denmark and the United States are at the top of the league table and Japan, France and the United Kingdom at the bottom.

54

Chart 4.3.8: Educational outcomes

Educational well-being for children
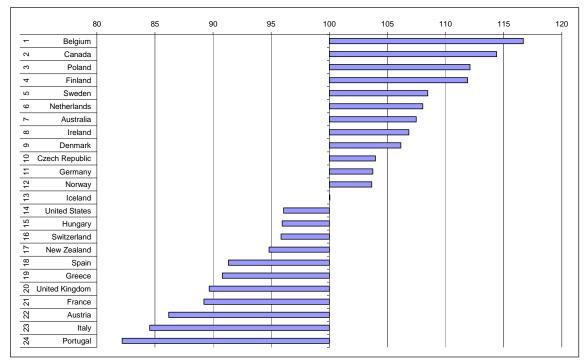
There are no significant associations between the education composite indicators in Table 4.3.2.

Table 4.3.2: Correlation matrix of educational components

	Educational achievement composite	Educational participation composite	Educational outcomes composite
Educational achievement composite	1		
Educational participation composite	0.25	1	
Educational outcomes composite	-0.14	0.01	1

Chart 4.3.9 presents a final education well-being league table distributed around the mean of 100 for all countries. Belgium, Canada, Poland and Finland do best on this dimension. Portugal, Italy and Austria do worst.

Chart 4.3.9: Education in rich nations

		80	85	90	95	100	105	110	115	120
1	Belgium									
2	Canada									
3	Poland									
4	Finland									
5	Sweden									
6	Netherlands									
7	Australia									
8	Ireland									
9	Denmark									
10	Czech Republic									
11	Germany									
12	Norway									
13	Iceland									
14	United States									
15	Hungary									
16	Switzerland									
17	New Zealand									
18	Spain									
19	Greece									
20	United Kingdom									
21	France									
22	Austria									
23	Italy									
24	Portugal									

4.4 Peer and family relationships

This dimension is made up of three components:

1. Family structure
2. Relationships with parents
3. Relationships with peers.

Family structure

This component includes data on children living in single-parent families or stepparent families. Data on family structure does not give direct information on children's well-being and the quality of parent-child relationships. The well-being of children in two-parent families with a high level of conflict might be worse than that of children in single-parent families that have adjusted to the new circumstances. However, there is substantial evidence that children in single-parent as well as in stepfamilies tend to have worse outcomes than peers living with both biological parents (Kamerman et al. 2003, Peters and Mullis 1997, Rodgers and Pryor 1998).

Changes in family structure indicate major events in the life of children and their parents that require adjustments in the organisation of family life and relationships and are as such a risk factor for children's well-being (Dumont and Provost 1999). Children living in single-parent families are more likely to be poor than those in two-parent families (Papadopoulos and Tsakloglou 2003, Kamerman et al. 2003). While remarriage tends to improve families' financial situation, children's outcomes in stepfamilies tend to be poor (McLanahan 1997, Kiernan 1992). Finally, many children lose contact with their non-resident parent, partly

because of unresolved conflicts between parents, partly because legislation and social services in some countries do not sufficiently support joint custody arrangements. This is however a violation of children's right to maintain personal relationships with both parents (CRC, art. 9).

Percentage of young people living in single-parent family structures

Source: HBSC 2001

Age group: 11, 13 and 15-year-olds

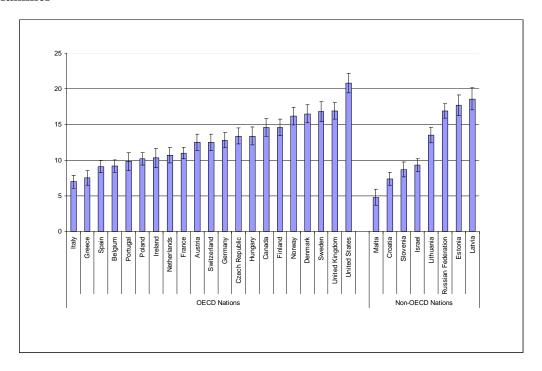*Missing countries:* Australia, Iceland, Japan, and New Zealand

Comments: The impact of growing up with a single parent on children's well-being might differ across countries. Some countries (e.g. Nordic countries) have much higher rates of single-parent families than others (e.g. in Southern Europe). Cross-national differences in public acceptance of single parenthood, in legislation and practice concerning custody and the extent to which policies cater for the needs of single parents (e.g. benefits, childcare, flexible employment arrangements) might be reflected in children's well-being. Confidence intervals in the tables are calculated using number of respondents reported in the HBSC report (2004: 220); a deft, or design factor value of 1.2, has been applied to account for the clustered nature of the data.12 This is the case for all data sourced from the HBSC report (2004).

Results: In Chart 4.4.1 among the OECD countries the proportion reporting living in lone parent family structures varies from 7.0 per cent in Italy to 21 per cent in the United States. The Southern EU countries are at the lower end of the scale along with Belgium and Poland. Nordic countries and the UK are at the top end of the scale, and the US has significantly higher proportions of this type of family structure than all other OECD nations. Among the non-OECD countries Malta has a significantly lower proportion of lone parent family structures than any country in either group, whereas other non-OECD countries are within the range of the OECD countries.

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[12] This value has been used in the report to calculate approximate confidence intervals at a range of proportions (HBSC 2004: 226). This value is also commonly used 'to indicate sizable variance inflation' (Sturgis 2004: 4).

Chart 4.4.1: Percentage of young people (age 11, 13 and 15) living in single parent families

Percentage of young people who report living in stepfamily structure

Source: HBSC 2001.

Age group: 11, 13 and 15-year-olds.

Missing countries: Australia, Iceland, Japan, and New Zealand.

Results: In Chart 4.4.2 proportions of stepfamily structures vary from 1.2 per cent in Greece to 16 per cent in the US. A similar pattern to proportions living in lone parent family structures can be seen. Again Southern EU countries are at the lower end of the scale, and the Scandinavian countries along with the UK and US have the highest proportions of this type of family structure. Of the non-OECD countries Malta, Croatia, Slovenia and Israel have significantly lower proportions of young people living in stepfamily structures than other non-OECD countries; however, all of the non-OECD group remain within the OECD range.
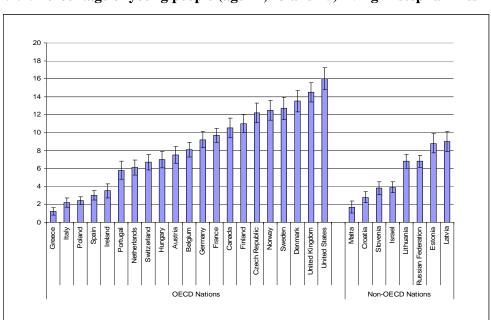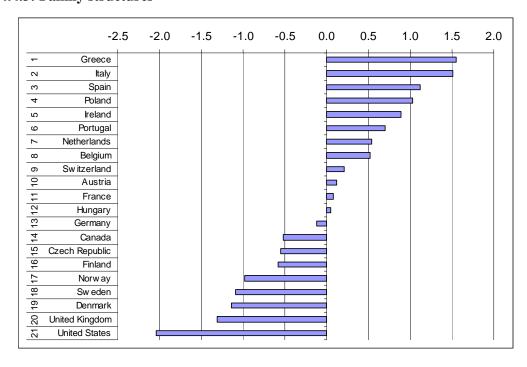
Chart 4.4.2: Percentage of young people (age 11, 13 and 15) living in step families

**Fami
ly structure composite measure**

The two variables are closely correlated (r=0.91 significant at the 0.01 level).

Chart 4.4.3 presents the family structures league table and shows that children in Greece, Italy, Spain and Poland are least likely to experience changes in their family structure and that children in the USA and the UK are most likely to experience it.

Chart 4.4.3: Family structures

Relationship with parents

The family constitutes the most important mediating factor for children's well-being, in regard to both the quality of relationships and social support within the family and the resources and opportunities parents provide for their children. An analysis of BHPS youth data shows a significant association between the quality of parent-child relationships and young people's subjective well-being. In particular young people tended to have higher happiness scores if they talked to their fathers about things that mattered and did not quarrel with their mothers (Quilgars et al. 2005). Duncan and Brooks-Gunn (2000) point to five different pathways through which income may affect children, three of which are directly linked to the quality of family relations: the quality of a child's home environment and the warmth of mother-child interactions, the quality of childcare, families' economic pressure as it puts strain onto parent-child relationships, parents' health and their interactions with children and neighbourhood factors. They point to the association between a low quality of family relations and children's conflicts with parents, low educational achievements, reduced emotional health and problems in social relationships. Coming from a different perspective Orthner, Jones-Saupei and Williamson (2004) found in a study on the resilience of low-income families that good family communication increased the likelihood of getting children into activities and educational opportunities 'that will help them succeed' by 57 per cent. Other factors that strengthened families' resilience were economic resources, social support, and in particular the confidence to be able to solve problems. Qualitative research shows that poor adolescents who have a trusting and supportive relationship to at least one parent are better able to deal with problems (Hoelscher 2003). A high quality of family relations is not only reflected in the warmth of parent-child relationships, trust and open communication but also in a good and harmonious relationship between parents, parents' coping strategies and their ability to act as role models for their children (Walper 1999, Evans et al. 2002).

There is however very little comparative data on the quality of children's relationship with their parents. Therefore we use proxy indicators focusing on time parents and children spend together eating and talking. While spending time just talking points to the quality of interaction between children and their parents, eating meals together is a ritual that strengthens family bonds and offers room for communication. It is also associated with a better nutritional intake by children (Tubbs et al. 2005, Compan et al. 2002, Videon and Manning 2003).

Students whose parents eat their main meal with them around a table several times a week

Source: PISA 2000.

Age group: 15-year-olds.
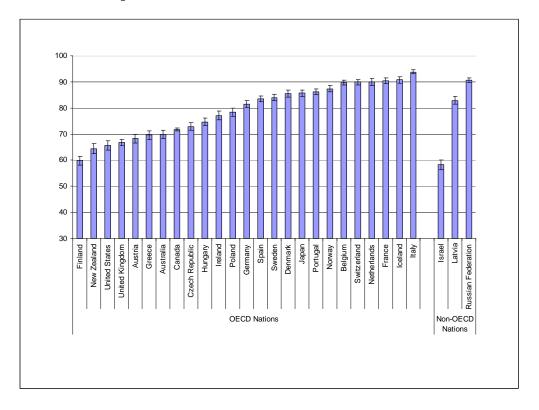
Missing countries: none. Data for the Netherlands is to be treated with care because of low response rates.

Comments: Traditions in organising family life and eating habits differ across countries so that there are considerable cross-national disparities. However, even in the countries with the lowest rates almost two-thirds of young people report having regular family meals.

Results: Chart 4.4.4 shows that well over half of all children regularly eat main meals with their parents. Interaction of this kind varies from 60 per cent in Finland to nearly 95 per cent in Italy. Anglophone countries, with the exception of Ireland, have appreciably lower proportions on this scale. Data is available for only three of the eight non-OECD countries included in this study. Russia and Latvia have proportions of children regularly eating their main meal at a table with their parents higher than proportions shown in half of the OECD nations. Russia in particular shows high levels of this type of family interaction. Israel on the other hand has lower levels of this type of interaction than any other country of study.

Chart 4.4.4: Percentage of 15 year-olds who eat the main meal of the day with their parents 'several times per week'
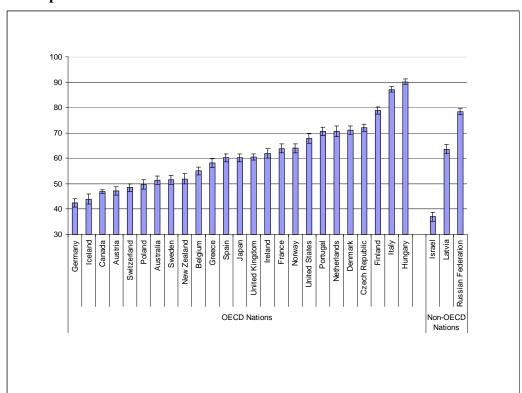
Chart 4.4.5: Percentage of 15 year-olds whose parents spend time 'just talking to them' several times per week

Gaps in data availability

Comparative data on the quality of family relations and more specifically parent-child relationships is still scarce as is data on different age groups. There is also little known on the relationships between siblings.

Indicators should capture how children experience their relationship to their parents. An example for this can be found in a survey conducted by the National Family and Parenting Institute (2000) in England and Wales. They included the following set of indicators:

- My parent/s are always there for me when I need them.
- My parent/s make me feel loved and cared for.
- I can talk to my parent/s about any problem that I may have.
- My parent/s and I argue a lot.
- My parent/s do not give me the attention I need.
- My parent/s make me feel bad about myself.

The Youth Questionnaire of the British Household Panel Survey on the other hand includes questions on:

- Children quarrelling with their mother.
- Children quarrelling with their father.
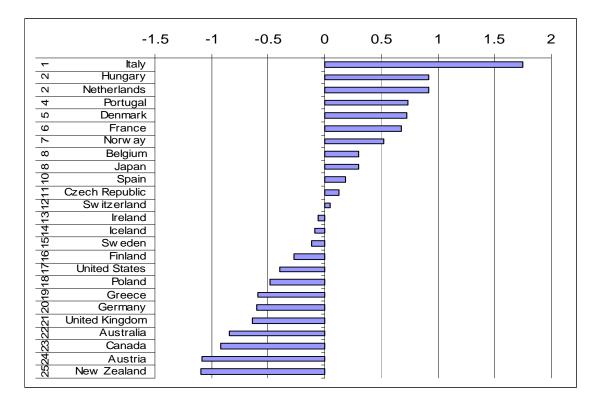
- Children talking with their mother about things that matter.
- Children talking with their father about things that matter.
- Number of family evening meals during previous week.
- Children not telling parents where they were in the evening.
- General happiness with family.

Relationship with parents' composite measure

There is no significant association between the two indicators (r=0.02 ns).

Chart 4.4.6 presents the relationship with parents league table. Italy is an outlier at the top of the league followed by Hungary, the Netherlands and Portugal. Canada, Austria and New Zealand are at the bottom of the league.

Chart 4.4.6: Relationship with parents

Relationship with peers

According to an Irish project on child well-being, children see friends next to the family as the most important factor for their well-being (Hanafin and Brooks 2005a). In fact friendship, the possibility to spend time with friends, to have fun and share problems is of high significance in children's lives. A 'best friend' is often the only person with whom children talk about difficulties they have with their family or friends, while being part of a wider group of peers strengthens feelings of belonging. Children are at risk of exclusion from their peer group if they stand out in one way or another. This can be due to personal characteristics of the child (e.g. appearance, having a disability or belonging to a minority),

poverty or a high level of psychosocial stress. Children's relationships with their peers, as well as their wider social networks, are crucial for their psychosocial development.

Reliable comparative data on the quality of children's peer relationships is however scarce. We include an indicator on children's perception of peers as kind and helpful. Though this indicator does not give information on children's social networks or their friends and activities it is an indicator for feeling accepted by peers and being engaged in meaningful interaction.

Young people finding their peers kind and helpful
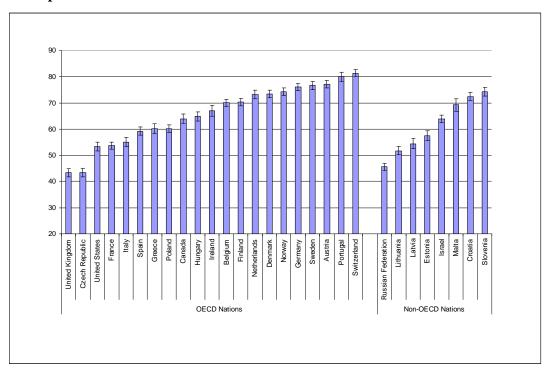
Source: HBSC 2001

Age group: 11, 13, 15-year-olds

Missing countries: Australia, Iceland, Japan and New Zealand

Results: In Chart 4.4.7 between 43.3 per cent and 81.4 per cent of children experience their peers as kind and helpful. Levels below 50 per cent are found in the United Kingdom and Czech Republic, while the highest levels of 80 per cent and over are found in Portugal and Switzerland. There is little in the way of either cultural or regional groupings in the scale, except that Nordic countries are all present in the top half of the scale. The non-OECD nations are clearly divided between the Northern ex-Soviet nations of Russia, Latvia, Lithuania and Estonia at the lower end of the scale and Southern European nations reporting higher levels of this type of peer relationship. All non-OECD nations are within the range of the OECD group.

Chart 4.4.7: Percentage of young people age 11, 13 and 15 who find their peers 'kind and helpful'

Gaps in data availability

There are considerable gaps in the availability of comparative data on children's peer relationships, and as with many other areas we lack data for different age groups. The only OECD-wide data source in this field is HBSC 2001. However, their main focus was not children's well-being with their friends but rather the structure of peer groups. We had to drop an indicator on children not having a close friend as we were not confident about its reliability. There is data on 'children having three or more close friends' and 'children communicating daily by email, phone or text message' but they appeared to be weak indicators of the quality of Peer and family relationships and their well-being.

Data is therefore needed on:

- Children not having a best friend
- Children talking with their best friend about problems
- How happy children are in general about their friends.

Some of these or similar indicators have been used in national youth surveys like the BHPS in Britain and the German youth survey by the German Youth Institute.

Peer and family relationships in the OECD

There are no significant associations in Table 4.4.2 between the Peer and family relationships composite indicators.

Table 4.4.2: Correlation matrix of Peer and family relationships

	Family structure composite	Quality of family relationships composite	Peer relationships composite
Family structure composite	1		
Quality of family relationships composite	0.26	1	
Peer relationships composite	0.08	0.03	1

Chart 4.4.8 presents a final Peer and family relationships league table distributed around the mean of 100 for all countries. Italy, Portugal, and the Netherlands do best on this dimension. The United Kingdom, the United States, and the Czech Republic do worst.
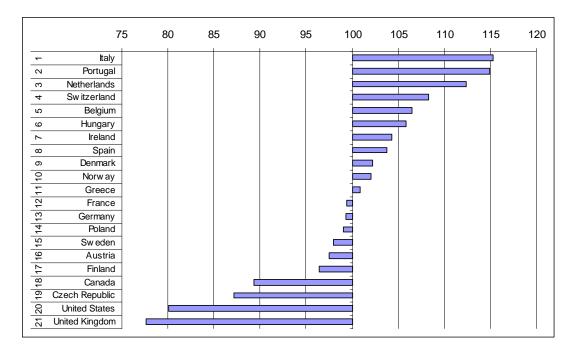
Chart 4.4.8: Peer and family relationships in rich nations

		75	80	85	90	95	100	105	110	115	120
1	Italy										
2	Portugal										
3	Netherlands										
4	Switzerland										
5	Belgium										
6	Hungary										
7	Ireland										
8	Spain										
9	Denmark										
10	Norway										
11	Greece										
12	France										
13	Germany										
14	Poland										
15	Sweden										
16	Austria										
17	Finland										
18	Canada										
19	Czech Republic										
20	United States										
21	United Kingdom										

4.5 Children's Subjective Well-being

Children's subjective well-being is represented by three components:

- Self-defined health
- Personal well-being
- Well-being at school

How children feel about themselves and their environment is reflected in their subjective well-being. It is a result of how children respond to the demands and resources in their environment and is thus both an indication of their personal resources and the problems they encounter in their family, in peer relations or at school.

We include three components on subjective well-being that give insight into three different dimensions of children's lives. All data is for young people, covering 11, 13 and 15-year-olds for HBSC data and 15-year-olds for PISA data. There is consistent evidence that during childhood and adolescence subjective well-being decreases with increasing age. Likewise teenage girls tend to have lower levels of subjective well-being than boys (Currie et al. 2004; Quilgars et al. 2005).

Self-defined health

Young people's perception of their own health is associated with a number of factors. The HBSC survey found that young people who reported low family affluence and those who lived in lone parent and stepfamilies perceived themselves as less healthy. Subjective health was also linked to the quality of family relations (ease of communication with mothers and

fathers) and a positive school environment (Currie et al. 2004). Similarly the English Health Survey showed associations between self-assessed health and young people's socioeconomic status and area deprivation factors, with the best-off young people reporting better health outcomes. Young people in households in the lowest income quintile on the other hand were less likely to rate their own health as 'very good' (cf. Beresford et al. 2005).

Young people aged 11, 13 and 15 rating their health as fair or poor

Source: HBSC 2001

Age group: 11, 13, 15-year-olds

Missing countries: Australia, France, Iceland, Japan and New Zealand
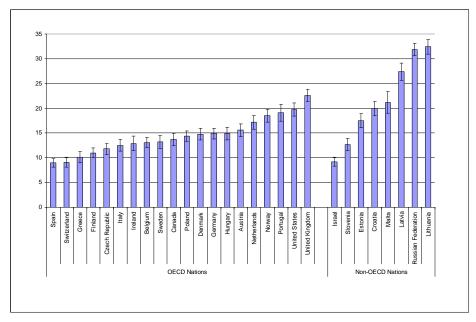
Comments: All HBSC analysis in this paper uses Flemish data for Belgium and English data for the UK. This decision is based upon size of the population in comparison to other national samples for these countries. Confidence intervals in the tables are calculated using number of respondents reported in the HBSC report (2004: 220); a deft, or design factor value of 1.2, has been applied to account for the clustered nature of the data.13 This is the case for all data sourced from the HBSC report (2004), and PISA (2003) findings calculated from raw data.

Results: In Chart 4.5.1 the proportion of young people rating their health as fair or poor varies from 9.0 per cent in Spain to 22.6 per cent in the United Kingdom, a proportion significantly higher than any of the other OECD countries. Most of the non-OECD countries report similar findings to the OECD group, with Israel and Slovenia reporting comparatively low levels of young people rating their health as fair or poor. Ratings of fair or poor subjective health are significantly higher than other countries in Latvia, the Russian Federation and Lithuania.

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[13] This value has been used in the report to calculate approximate confidence intervals at a range of proportions (Currie et al. 2004: 226). This value is also commonly used 'to indicate sizable variance inflation' (Sturgis 2004: 4). PISA 2003 data is also clustered though at the school rather than the class level

Chart 4.5.1: Percentage of young people age 11, 13 and 15 who rate their health as fair or poor

Well-being at school

Children spend a great part of their day at school. How they feel about school is therefore an important aspect of their well-being. Qualitative research on the experiences of children and young people in poverty shows the complexity of the relationship between the life situation at home and the success and well-being at school. Many children and young people like going to school. Particularly those with a very difficult family background might enjoy school as a place where they do not have to deal with family problems. School is also a place to meet friends, especially when poverty and/or the family situation make it difficult to spend time with friends outside school. Other adolescents perceive school as a chance to escape from poverty and work hard. At the same time school life seems to be more difficult for poor children and adolescents than for their better-off peers. Their achievements tend to be lower, and they are also less self-confident about their capabilities. They report more conflicts with teachers and show more behaviour problems. Children in poverty are at risk of being excluded in the classroom and being bullied by other students. Especially the inability to afford brand name clothing or equipment or to participate in school trips sets poor students apart as does the dependency on benefits like free school meals (Hoelscher 2003, Ridge 2002, Holz and Skoluda 2003).

The HBSC survey on the other hand points to the dynamics through which positive school factors benefit children's life satisfaction and health outcomes. A positive school environment that is characterised by a socially inclusive school climate, supportive peers and good academic achievements with a low level of stress increases young people's sense of success and competence. This self-confidence in turn increases children's health and well-being, which again strengthens the likelihood that they will continue to manage well at school (Currie et al. 2004).

We include an indicator on the percentage of children and young people liking school a lot.

Young people liking school a lot
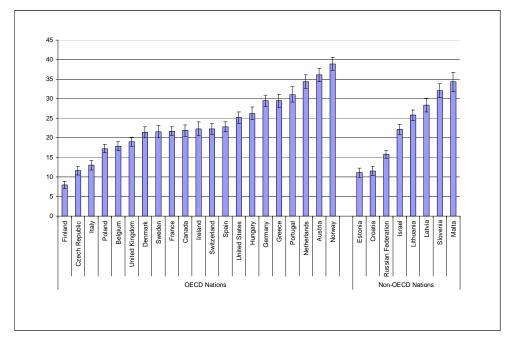
Source: HBSC 2001

Age group: 11, 13, 15-year-olds

Missing countries: Australia, Iceland, Japan and New Zealand

Results: Chart 4.5.2 shows the proportions of pupils liking school a lot in OECD nations ranging from 8.0 per cent in Finland to 38.9 per cent in Norway. The Finnish result is significantly lower than all countries in both groups, which is interesting given Finland's success in reading, mathematics and science literacy as measured by PISA 2003 (OECD/PISA 2005).

Chart 4.5.2: Percentage of students age 11, 13 and 15 who report liking school a lot

Personal well-being

Children's personal well-being is linked to their relationships with parents and peers and their situation at school, but also to experiences of poverty and deprivation (Currie et al. 2004; Quilgars et al. 2005, Hoelscher 2003, Ridge 2002, Attree 2004).

Children's perceptions of themselves and their peers determine the social experiences they have with their peers and through that their future perceptions. Negative self-perceptions put children at risk of becoming victims of bullying, being rejected by peers and having no friends. Some children may get caught up in a cycle of having a negative perception of themselves, withdrawing from their peer group and subsequently feeling rejected and lonely. At the same time negative self-perception is associated with feelings of depression and hopelessness and less assertive styles of interaction, so that children may become an easy

target for bullying (Salmivalli and Isaacs 2005). In a similar way feelings of loneliness are mediated by the duration and quality of best friendships, acceptance by peers, friendships and experiences of victimisation (Asher and Paquett 2003).

We combine four indicators:

1. a general indicator on young people's overall life satisfaction and three more specific indicators on
2. young people feeling like an outsider
3. feeling awkward and out of place, and
4. feeling lonely.

Young people with scores above the middle of the life satisfaction scale

Source: HBSC 2001.
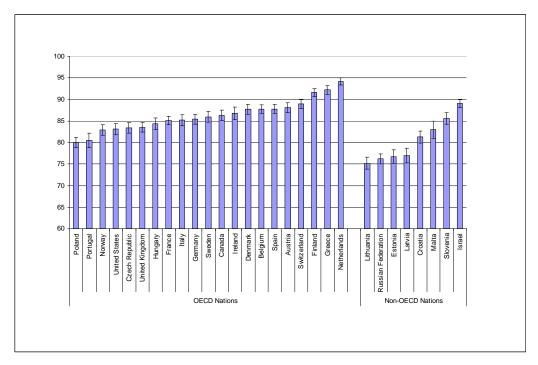
Age group: 11, 13, 15-year-olds.

Missing countries: Australia, Iceland, Japan, and New Zealand.

Comments: Children were asked 'Here is a picture of a ladder. The top of the ladder, 10, is the best possible life for you and the bottom, 0, is the worst possible life for you. In general, where on the ladder do you feel you stand at the moment? Tick the box next to the number that best describes where you stand'. It is called the Cantril self-anchoring life satisfaction ladder. The results presented are the proportions of each country's sample reporting six or over (best possible life at the top, worst possible life at the bottom).

Results: In Chart 4.5.3 the majority of children in all of the OECD countries have scores above the middle of the life satisfaction scale. However, this varies from 80.0 per cent in Poland to 94.2 per cent in the Netherlands. Finland, Greece and the Netherlands have significantly less than ten per cent of their young people with scores below the middle of the life satisfaction scale. The non-OECD countries can be divided into two groups: Croatia, Malta, Slovenia and Israel have life satisfaction on a par with OECD countries. The Russian Federation and the Baltic States have levels significantly lower than the OECD group.

Chart 4.5.3: Percentage of young people age 11, 13 and 15 who rate themselves above the middle of the life satisfaction scale

Students who agree with the statement 'I feel like an outsider or left out of things'

Source: PISA 2003
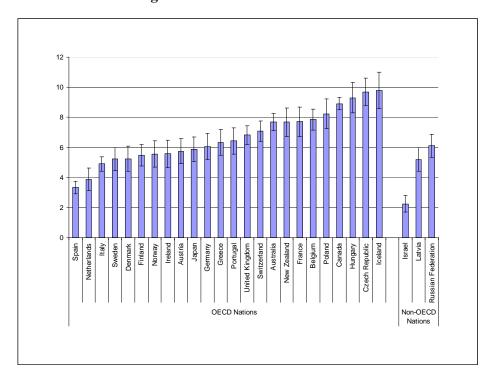
Age group: 15-year-olds

Missing countries: US

Comments: UK to be treated with caution because of low response rates.

Results: In Chart 4.5.4 pupils reporting that they feel like an outsider or left out of things vary from 3.3 per cent in Spain to 9.8 per cent in Iceland. There is no clear leader or laggard group in this scale, but Israel performs significantly better than any other country in either group.

Chart 4.5.4: Percentage of students, age 15 who agree with the statement 'I feel like an outsider or left out of things'.

Students who agree with the statement 'I feel awkward and out of place'

Source: PISA 2003
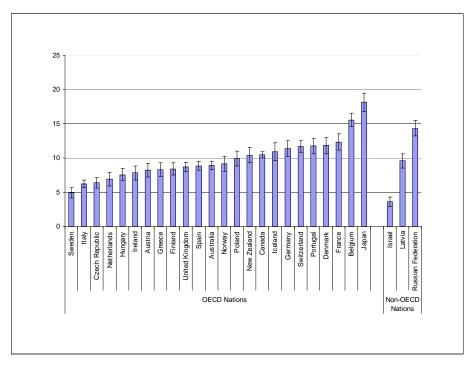
Age group: 15-year-olds

Missing countries: US

Comments: UK to be treated with caution because of low response rates.

Results: In Chart 4.5.5 the proportions of pupils reporting feeling 'awkward and out of place' in OECD nations vary from 4.9 per cent in Sweden to 18.1 per cent in Japan. Belgium and Japan are clear laggards on this scale, both with proportions significantly higher than any other OECD nation. In the non-OECD group Israel again is significantly better than any other country in either group. Latvia compares to the middle group of OCED nations, whilst the Russian Federation, though significantly better than Japan, is comparable to the OECD's worse performing countries.

Chart 4.5.5: Percentage of students age 15 who agree with the statement 'I feel awkward and out of place'

**Students who agree with the statement 'I feel lonely'**

Source: PISA 2003
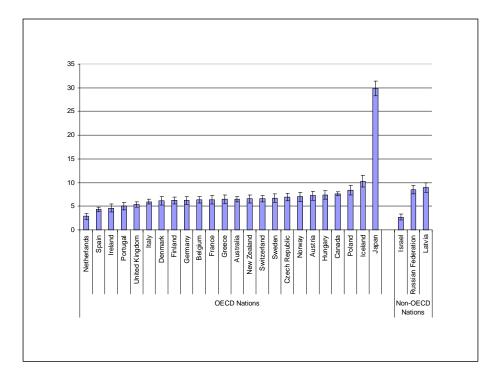
Age group: 15-year-olds

Missing countries: US

Comments: UK to be treated with caution because of low response rates.

Results: In Chart 4.5.6 the most striking result is the high proportion of Japanese pupils agreeing with the statement 'I feel lonely' (29.8 per cent). This is almost three times the proportion of the next country, Iceland (10.3 per cent). The rest of the OECD nations fall within the range of five to ten per cent, with the exception of Ireland, Spain and the Netherlands, which all report levels lower than five per cent. Among the non-OECD countries Israel is again performing very well with low levels of loneliness that are comparable only to the Netherlands. The Russian Federation and Latvia have high proportions of pupils feeling lonely, but still within the range reported by the OECD countries.

Chart 4.5.6: Students who agree with the statement 'I feel lonely'

Personal well-being composite

Unsurprisingly the correlation matrix in Table 4.5.1 shows a strong positive association between feelings of loneliness and feeling like an outsider. Higher scores of life satisfaction are also showing significant associations with feeling like an outsider, this time negatively.
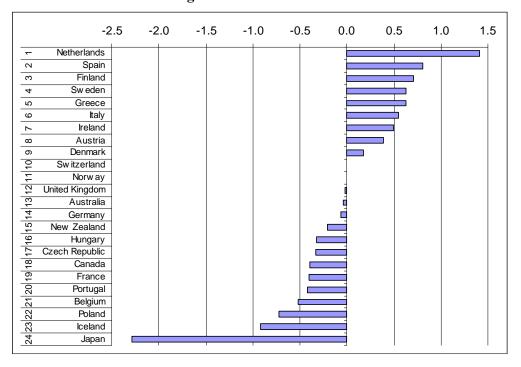
Table 4.5.1: Correlation matrix personal well-being

	Young people with scores above the middle of a life satisfaction scale (%)	Students who agree to 'I feel like an outsider (or left out of things)' (%)	Students who agree to 'I feel awkward and out of place' (%)	Students who agree to 'I feel lonely', (%)
Young people with scores above the middle of a life satisfaction scale (%)	1			
Students who agree to 'I feel like an outsider (or left out of things)' (%)	-0.44*	1		
Students who agree to 'I feel awkward and out of place' (%)	-0.10	0.25	1	
Students who agree to 'I feel lonely' (%)	-0.42	0.67**	0.12	1

** Significant at the 0.01 level.
* Significant at the 0.05 level.

Chart 4.5.7 presents the league table for the personal well-being indicator by averaging the z scores for the indicators. Children's personal well-being is best in the Netherlands, Spain, Finland and Sweden and worst in Poland, Iceland, and by some way, Japan.

Chart 4.5.7: Personal well-being

Children's subjective well-being in the OECD
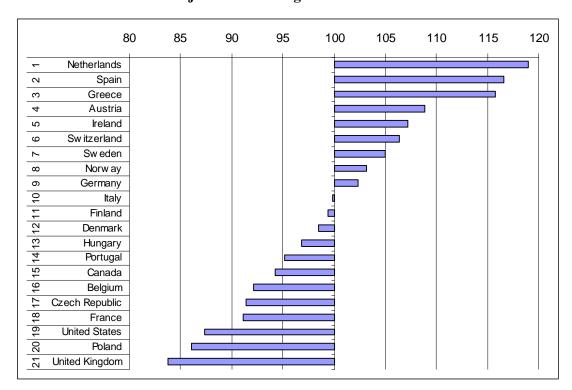
There are no significant associations between the children's subjective well-being component indicators in Table 4.5.2.

Table 4.5.2: Correlation matrix children's subjective well-being

	Subjective health well-being	Subjective educational well-being sub component	Subjective personal well-being
Subjective health well-being	1		
Subjective educational well-being sub component	-0.38	1	
Subjective personal well-being	0.21	0.16	1

Chart 4.5.8 presents a final children's Subjective Well-being league table based on the average of z scores for the components distributed around the mean of 100 for all countries with available data.[14] Netherlands, Spain, Greece and Austria do best on this dimension. France, the United States, Poland, and the United Kingdom do worst.

Chart 4.5.8: Children's subjective well-being in rich nations

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[14] The USA has been included in this analysis because it had data for two of the three components. However it was left out of the Report Card for this dimension.

Behaviour and risks

The behaviour and risks dimension is represented by three components:

1. Health behaviour
2. Risk behaviour
3. Experience of violence.

Health behaviour

Children's health behaviour in terms of nutrition, oral health and physical exercise has both short-term and long-term impacts on young people's health and is also a predictor for health behaviour in adulthood (Currie et al. 2004, Astrom 2004). Positive health behaviour is thus an important resource for children's well-being and a crucial aspect of prevention.

Physical activity is beneficial for children's aerobic fitness, blood pressure, blood lipids, skeletal health and psychological well-being and prevents obesity (Currie et al. 2004). The current recommendation for young people's participation in moderate physical activity has been set at one hour per day (Pate et al. 1998). Girls tend to be less active than boys and in many countries physical activity declines over time (Currie et al. 2004). We include an indicator on children's physical activity.

Nutrition is another major determinant of children's health and development. Healthy eating is linked to a reduced risk of chronic diseases, like cardiovascular diseases, cancer, non-insulin-dependent diabetes mellitus and osteoporosis, as well as to the prevention of immediate health problems like obesity, dental caries and anaemia. Children who do not eat breakfast may experience midmorning fatigue and problems with cognition and learning. They are also more likely to consume snacks during the day that are high in fat and sugar and low in fibre (Currie et al. 2004). There are substantial gender differences in young people's eating habits that are closely related to the different perceptions girls and boys have of their body. More girls than boys are concerned about their body weight and try to reduce their weight. This goes along with girls being more likely than boys to eat fruit and vegetables but also to skip breakfast more often than boys (Currie et al. 2004). We include indicators on children's fruit consumption and breakfast.

The increasing number of overweight and obese children has become a major public health concern. Overweight is associated with psychosocial problems such as poor body image, low self-esteem and experiences of bullying. Health risks include asthma, sleep apnoea, diabetes mellitus and the early development of risk factors for coronary heart diseases and arteriosclerosis. Overweight and obesity in childhood often persist into adulthood (Currie et al. 2004, AIHW 2005).

Health behaviour is represented here by four indicators all from the HBSC. These are:

- Young people who eat breakfast every school day
- Young people who eat fruit every day

- Mean number of days when young people are physically active for one hour or more of the previous/typical week and
- Young people who are overweight according to the BMI.

Young people who eat breakfast every school day

Source: HBSC 2001.
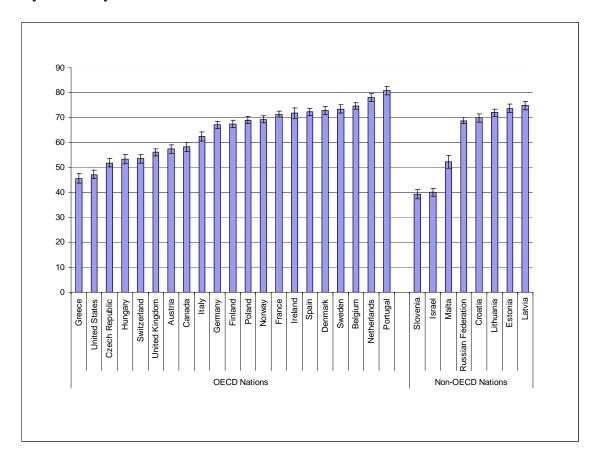
Age group: 11, 13, 15-year-olds.

Missing countries: Australia, Iceland, New Zealand.

Comments: Differences across countries might be influenced by cultural differences regarding eating habits.

Results: The percentage of children having breakfast regularly in Chart 4.6.1 ranges from 45.6 per cent in Greece to 80.8 per cent in Portugal. Along with Greece the United States has rates of young people eating breakfast every school day below 50 per cent. Non-OECD countries compare with the mid to high range of OECD countries with the exceptions of Israel and Malta who have significantly lower rates than any other country.

Chart 4.6.1: Percentage of young people age 11, 13 and 15 who report eating breakfast every school day

Young people who eat fruit every day

Source: HBSC 2001
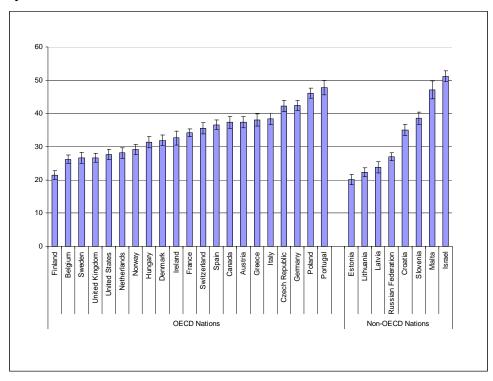
Age group: 11, 13, 15-year-olds

Missing countries: Australia, Iceland, New Zealand

Comments: Differences across countries might be influenced by the availability and prices of fruit across countries. The authors of the HBSC report also point to seasonal differences in the timing of fieldwork that might have impacted on the results (Currie et al. 2004).

Results: In Chart 4.6.2 between a fifth and a half of young people eat fruit daily. Children in Finland have levels of eating fruit every day significantly lower than any other country in the OECD group (21.5 per cent). Poland and Portugal have the highest rates at 46.1 per cent and 47.8 per cent respectively. Non-OECD nations report a similar range to the OECD group, and perhaps unsurprisingly the likelihood of children eating fruit in Malta and Israel is significantly higher than in the other non-OECD nations.

Chart 4.6.2: Percentage of young people age 11, 13 and 15 who report eating fruit every day

Mean number of days when young people are physically active for one hour or more of the previous/typical week

Source: HBSC 2001.

Age group: 11, 13, 15-year-olds.
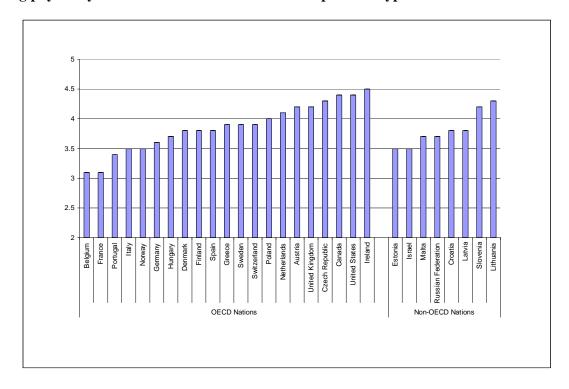
Missing countries: Australia, Iceland, New Zealand.

Comments: There is a range of factors that might influence children's physical activity within and across countries, including the amount and organisation of physical education at school, children's mode of travel to school and the availability and accessibility of leisure facilities.

Results: In Chart 4.6.3 on average children are physically active on 3 to 4.5 days. In Belgium, France and Portugal children have physical activity on less than 3.5 days while children in Ireland, the United States, and Canada are the most active. Non-OECD countries have rates of physical activity within the range of the OECD group.

Chart 4.6.3: Mean number of days on which young people age 11, 13, and 15 report being physically active for one hour or more of the previous/typical week

Young people who are overweight according to BMI

Source: HBSC 2001.

Age group: 11, 13, 15-year-olds.

Missing countries: Australia, Iceland, New Zealand.

Comments: The authors of the HBSC study note that for some countries there is a lot of missing data. The BMI was calculated based on self-reported weight and height. Some children may not have known their weight. However, an analysis of cases with missing data showed that young people who did not report their height and weight were less likely to come from higher socioeconomic groups, less likely to be physically active and to consume fruit, vegetables and – perhaps surprisingly – sweets and in many countries more likely to be dieting or to feel the need to lose weight. It is therefore likely that the prevalence of overweight is underestimated (Currie et al., 2004). Confidence intervals have been calculated using response rates adjusted for missing data on this indicator.

Results: In Chart 4.6.4 there is considerable variation in the proportion of young people who are overweight with rates ranging from 7.1 per cent in Poland to 25.1 per cent in the United States. Of the non-OECD nations the Baltic States and the Russian Federation have rates of overweight young people either significantly lower or equal to the best-performing OECD nations. In contrast Maltese children have levels of obesity and pre-obesity on a par with the United States.

Chart 4.6.4: Percentage of young people age 13 and 15 who report being overweight

Health behaviour composite

The correlation matrix in Table 4.6.1 shows a significant negative correlation between proportions of children who are physically active and those who eat breakfast every school

day. The proportion of children eating breakfast on a school day is also negatively associated with higher levels of obesity and pre-obesity. The other health behaviour indicators are not significantly associated.
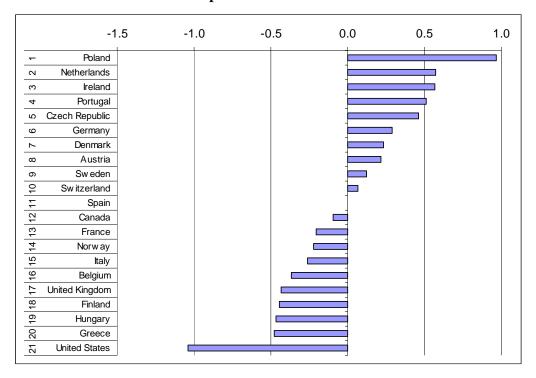
Table 4.6.1: Health behaviour composite

	Eating fruit	Eating breakfast on a school day	Physical activity	Young people who are overweight according to BMI
Eating fruit	1			
Eating breakfast on a school day	-0.03	1		
Physical activity	-0.03	-0.45*	1	
Young people who are overweight according to BMI	-0.12	-0.43*	0.27	1

* Significant at the 0.05 level.

Chart 4.6.5 shows that children in Poland and the Netherlands have the healthiest behaviour, followed closely by Ireland and Portugal. At the bottom of the league are Hungary, Greece and the United States.

Chart 4.6.5: Health behaviour composite

Risk behaviour

Adolescence is a time in development when risk behaviour is very common and young people often engage in it hoping for some positive gains like acceptance in their peer group. In this they tend to underestimate the risks they take and their behaviour can also be seen as a health risk.

While the impact of tobacco, alcohol and cannabis on young people's health is evident, experimenting with these substances or taking up regular use during adolescence has to be seen in the context of young people's development, their peer relations and coping strategies. Alcohol and tobacco use among children and young people has been extensively researched. The factors that influence children's decision to take up drinking or smoking are complex and do not allow us to identify a single high risk group. Children's personal situation (e.g. financial resources, psychosocial problems and school performance) is as important as social factors. Mediating factors are the behaviour of parents, such as their use of tobacco and alcohol and their monitoring of their children's behaviour, but also the behaviour of peers. Peer pressure however often seems to work indirectly rather than through direct persuasion. Young people who want to belong to a group of peers try to conform to the behaviour they perceive as normative. Alcohol and tobacco in this context are also used to create a sense of togetherness within the peer group, for example by sharing cigarettes (Chuang et al. 2005; Stewart-Knox et al. 2005, Conwell et al. 2003). Young people who do engage in risk behaviour often do so in more than one way, e.g. they consume alcohol and have unprotected sex. Research also shows that risk behaviour is influenced by stress experiences that young people cannot manage successfully with positive coping strategies (Klein-Hessling et al. 2005, Essau 2004).

The latest HBSC report (Currie et al. 2004) suggests changing gender patterns regarding smoking, alcohol and cannabis use. With the exception of some Eastern European countries girls tend to have higher rates of smoking than boys, particularly among the 15-year-olds. Alcohol on the other hand is more frequently and more heavily consumed by boys across the whole region. The same is true for cannabis use though data suggests that the gender gap may become smaller.

Sexual intercourse at a young age is likely to be unplanned and therefore unprotected (Currie et al. 2004). Qualitative research with Swedish teenage girls shows that many were underestimating the risks of unprotected sex, unsure about the use of contraceptives and sometimes embarrassment and carelessness prevented discussions about the use of condoms with their partner. This was particularly true for casual sex and under the influence of alcohol (Ekstrand et al. 2005). We therefore include an indicator on the percentage of 15-year-olds who had already had sexual intercourse as well as an indicator on the use of condoms during the last intercourse. While the use of contraception in general mainly points to the prevention of pregnancies, the use of condoms more specifically gives information on young people's risk-taking behaviour regarding HIV/AIDS and other STDs. The number of teenage pregnancies is our third indicator on sexual behaviour. Teenage pregnancies in today's societies are seen as a major policy concern, as they are linked to a range of disadvantages, including school drop out and lack of educational qualifications, poverty and unemployment (UNICEF 2001). That Report Card however also suggests that the reasons for

teenagers becoming pregnant and deciding not to abort their child are complex, depending much on the girls' social background, sexual education at school, the availability of contraception and the availability of social services and benefits (ibid.). This view is supported by British qualitative research. Interviews with teenage mothers in England showed that many girls had low expectations and a weak attachment to education before becoming pregnant. Pregnancies were unplanned and many girls actually were using contraception, but it either failed or was not used correctly. However, many girls had a strong orientation towards motherhood and did not perceive having a child as a major obstacle in their lives (Arai 2003). In the same way discussions with young people about their views of teenage pregnancies showed that well-off students were more likely than their disadvantaged peers to consider an abortion, as they saw a pregnancy as a major obstacle for their education and future life chances and thought they would not get support from their family, friends and school. While the disadvantaged students shared a negative view on teenage pregnancies they were more likely to consider having the child and to expect support from their families, partner and friends (Turner 2004).

Risk behaviour in this paper is represented by:

- Cigarette smoking at least once per week
- Young people who have been drunk two or more times
- Cannabis use in the last 12 months
- 15-year-olds who have had sexual intercourse
- Young people who used condoms during their last sexual intercourse
- Teenage fertility rate, births per 1000.
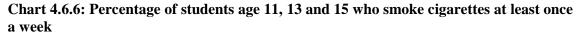
Cigarette smoking at least once per week
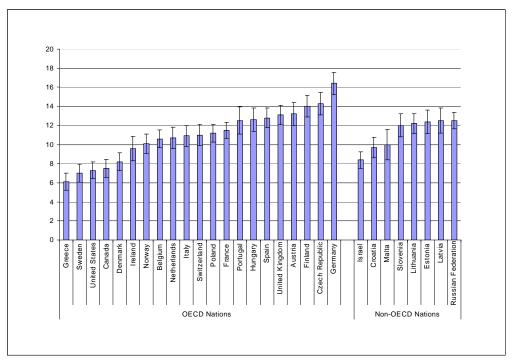
Source: HBSC 2001.

Age group: 11, 13, 15-year-olds.

Missing countries: Australia, Iceland, Japan, New Zealand.

Results: In Chart 4.6.6 the proportion of young people who smoke at least one cigarette per week ranges from 6.1 per cent in Greece to 16.4 per cent in Germany. The non-OECD nations all have rates within the range of the OECD group.

Chart 4.6.6: Percentage of students age 11, 13 and 15 who smoke cigarettes at least once a week

Alcohol: young people who have been drunk two or more times

Source: HBSC 2001

Age group: 11, 13, 15-year-olds

Missing countries: Australia, Iceland, Japan, New Zealand
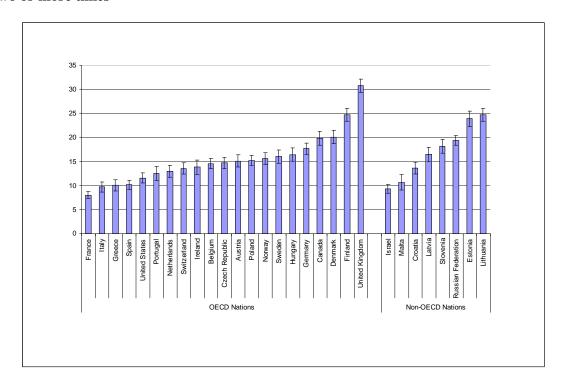
Results: In Chart 4.6.7 the proportion of young people who have been drunk two or more times range from 8.0 per cent in France to 30.8 per cent in the United Kingdom, significantly higher than any country in either group. The non-OECD nations all report rates within the range of the OECD group.

Chart 4.6.7: Percentage of students age 11, 13 and 15 who report having been drunk two or more times

Cannabis use in the last 12 months

Source: HBSC 2001
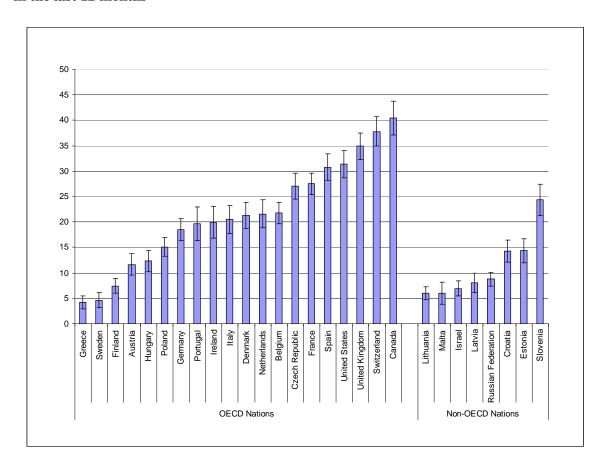
Age group: 15-year-old

Missing countries: Australia, Iceland, Japan, New Zealand, Norway

Results: The use of cannabis varies widely in Chart 4.6.8 from 4.2 per cent in Greece to 40.4 per cent in Canada. The majority of countries have levels of cannabis use significantly lower than 25 per cent. Apart from Canada, Switzerland, Spain, the United States and the United Kingdom are the exceptions. The majority of non-OECD nations report levels of cannabis use comparable to the lowest levels found in the OECD group. Slovenia is an exception here with levels significantly higher than 20 per cent.

Chart 4.6.8: Percentage of students age 11, 13 and 15 who report having used cannabis in the last 12 months

15-year-olds who have sexual intercourse

Source: HBSC 2001

Age group: 15-year-olds

Missing countries: Australia, Denmark, Ireland, Iceland, Japan, New Zealand and the United States

Comments: Some countries participating in HBSC did not include questions on sexual behaviour so that the number of missing countries for this indicator is relatively high.

Results: In Chart 4.6.9 rates vary between 15.1 per cent in Poland and 38.1 per cent in the United Kingdom. The non-OECD nations all report rates within the range of the OECD group
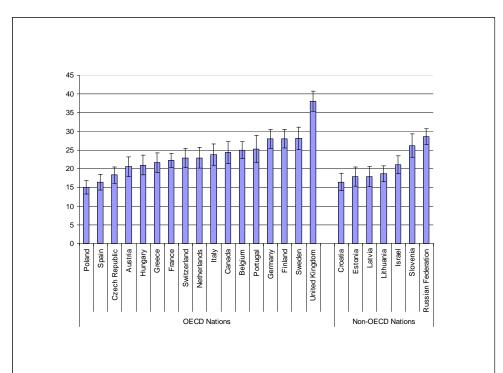
Chart 4.6.9: Percentage of 15 year-olds who report having had sexual intercourse

Young people who used condoms during their last sexual intercourse

Source: HBSC 2001.

Age group: 15-year-olds.
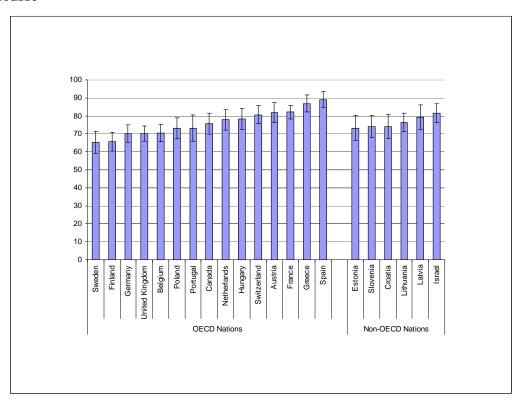
Missing countries: Australia, the Czech Republic, Denmark, Ireland, Iceland, Italy, Japan, New Zealand and the United States.

Comments: There is a relatively high number of missing countries as not all countries that participated in HBSC included questions on sexual behaviour. This question was only answered by the subsample that already had sexual relationships so that sample sizes are reduced for each country to 15-38 per cent of the original sample. Confidence intervals are calculated using numbers of young people responding to having sexual intercourse.

Results: Chart 4.6.10 shows that condoms are used by 65.2 per cent in Sweden to 89.1 per cent in Spain. The non-OECD nations all report rates within the range of the OECD group.

Chart 4.6.10: Percentage of 15 year-olds who used a condom during their last sexual intercourse

Teenage fertility rate, births per 1000

Source: WDI 2003.

Age group: 15-19-year-olds.

Missing countries: Iceland.

Results: Results differ widely in Chart 4.6.11, with the United States having the by far highest teenage fertility rate with 48 births per 1000 and Japan having the lowest rate with four births per 1000. The majority of countries fall within the range of 5 to 25 births per 1000. The non-OECD nations all have rates within the range of the OECD group, but the Russian Federation matches rates found in the United States.
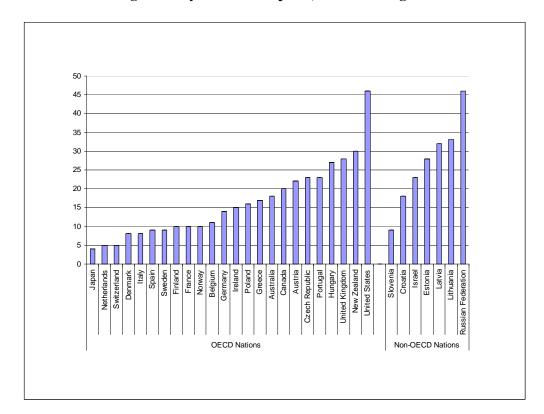
Chart 4.6.11: Teenage fertility rate: births per 1,000 women age 15 – 19

Gaps in data availability

There is a lack of data on the use of illicit drugs other than cannabis as well as on the amount of tobacco, alcohol and other drugs young people consume. A better data source in this respect is ESPAD but it only covers the EU countries. They include the following set of indicators:

- Cigarette smoking: Lifetime use 40 times or more (%).
- Alcohol consumption: Lifetime use 40 times or more (%).
- Drunkenness: Lifetime 20 times or more (%).
- Binge drinking (last 30 days 3 times or more) (%).
- Cannabis: Experience of use in Lifetime (%).
- Amphetamines: Experience of use in Lifetime (%).
- LSD: Experience of use in Lifetime (%).
- Ecstasy: Experience of use in Lifetime (%).
- Tranquillisers or sedatives: Experience of use in Lifetime (%).
- Inhalants: Experience of use in Lifetime (%).

Risk behaviour composite

The correlation matrix in Table 4.6.2 shows a significant positive association between drunkenness and sexual activity, a significant negative association is also found for drunkenness and condom use. A negative association is found between the proportions of young people using condoms as contraception and the proportions of young people who have had sexual intercourse by age 15.
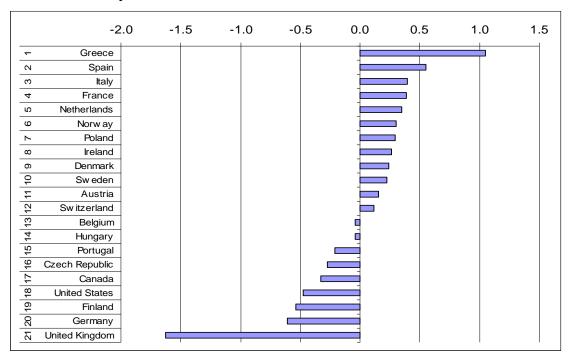
Table 4.6.2: Correlation matrix risk behaviour

	Cigarette smoking: young people who smoke at least once a week	Alcohol: young people who have been drunk two or more times	Cannabis: young people who have used cannabis on the last 12 months, age 15	Young people who have had sexual intercourse, 15-year-olds	Young people who used condoms during their last sexual intercourse, 15-year-olds	Teenage fertility rate, births per 1000 women 15 – 19
Cigarette smoking: young people who smoke at least once a week	1					
Alcohol: young people who have been drunk two or more times	0.24	1				
Cannabis: young people who have used cannabis on the last 12 months, age 15	0.04	0.07	1			
Young people who have had sexual intercourse, 15-year-olds	0.07	0.71**	0.09	1		
Young people who used condoms during their last sexual intercourse, 15-year-olds	-0.16	-0.64**	0.21	-0.62*	1	
Teenage fertility rate, births per 1000 women 15 – 19	-0.04	-0.14	0.16	0.16	-0.06	1

* Significant at the 0.05 level.

Chart 4.6.12 below summarises the average of the z scores for these indicators. Children in Greece, France, and Norway are least risky in their behaviours. Children in the United States, Finland and Germany are most likely to be involved in risky behaviour, along with the United Kingdom which lags behind other countries by over one standard deviation.

Chart 4.6.12: Risky behaviour

1	Greece	
2	Spain	
3	Italy	
4	France	
5	Netherlands	
6	Norw ay	
7	Poland	
8	Ireland	
9	Denmark	
10	Sw eden	
11	Austria	
12	Sw itzerland	
13	Belgium	
14	Hungary	
15	Portugal	
16	Czech Republic	
17	Canada	
18	United States	
19	Finland	
20	Germany	
21	United Kingdom	

Scale: -2.0 -1.5 -1.0 -0.5 0.0 0.5 1.0 1.5

Experience of violence

Bullying and fighting are different facets of violence among children and young people. The boundaries are not always clear though. Verbal and physical violence can mix and children can be either victims or aggressors or both. Experiences of peer violence are associated with a range of negative outcomes. In the short term victimised children tend to experience higher levels of social anxiety and depressive symptoms; they tend to feel lonely and have lower self-esteem. These symptoms and particularly anxiety at the same time make children more vulnerable to bullying and can reinforce the bullies' behaviour so that children may get caught up in a cycle of victimisation (Craig 1998). Victimised children are at risk of being victimised in later life as well. In the same way is bullying in childhood associated with antisocial behaviour in adulthood and difficulties in maintaining stable social relationships and long-term employment (Currie et al. 2004).

We include two indicators on peer violence, one on involvement in physical fighting, and the other on being victim of bullying.

Young people involved in physical fighting in previous 12 months

Source: HBSC 2001.
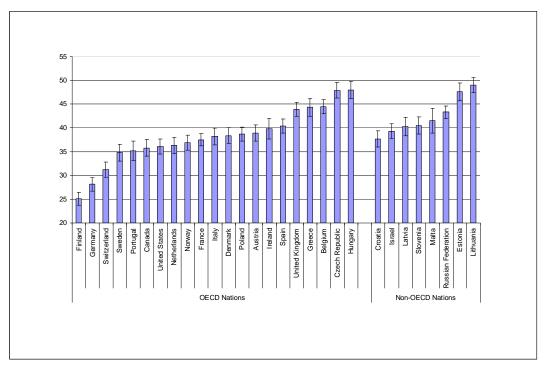
Age group: 11, 13, 15-year-olds.

Missing countries: Australia, Iceland, Japan and New Zealand.

Results: In Chart 4.6.13 proportions of young people who have been involved in physical fighting in the previous year range from 25.1 per cent in Finland to 48 per cent in Hungary. The non-OECD

nations all report similar rates, comparable to the mid to high range of the OECD group, and of these Estonia and Lithuania have rates significantly higher than other non-OECD countries.

Chart 4.6.13: Percentage of young people age 11, 13 and 15 who report having been involved in fighting in the previous twelve months

Young people who were bullied at least once in the last 12 months

Source: HBSC 2001.

Age group: 11, 13, 15-year-olds.
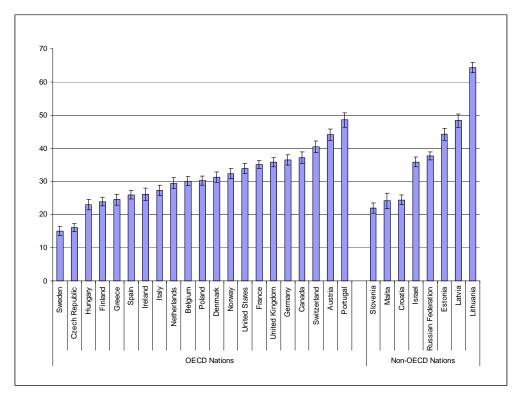
Missing countries: Australia, Iceland and New Zealand.

Results: There is considerable variation in the proportions of young people reporting being bullied in Chart 4.6.14, ranging from 15 per cent in Sweden to 48.5 per cent in Portugal. Of the non-OECD nations Lithuania is notable with almost two-thirds of young people having an experience of bullying. The other non-OECD nations all have rates within the range of the OECD group.

Chart 4.6.14: Percentage of young people age 11, 13 and 15 who report being bullied in the previous two months
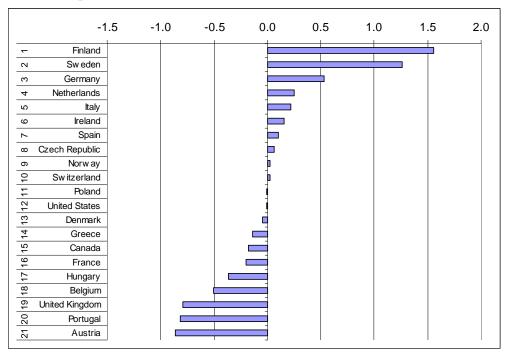
Experience of violence composite

There is no statistically significant relationship between these two indicators (r=-0.31 ns).

Chart 4.6.15 presents the experience of violence league table derived as the average of the z scores for these indicators. Finland and Sweden do best by some margin, followed by Germany and the Netherlands. Belgium, the United Kingdom, Portugal and Austria do worst.

Chart 4.6.15: Experience of violence

Child behaviours and risks in rich nations
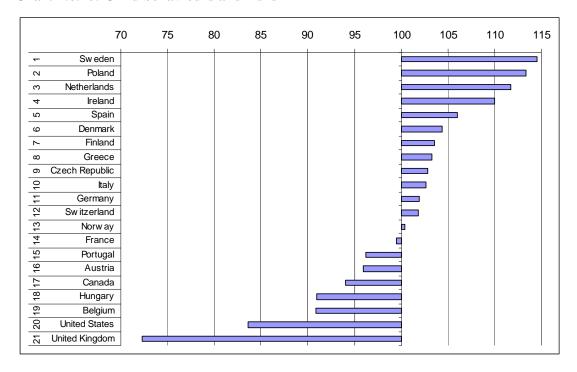
The matrix in Table 4.6.3 shows that there are no significant associations between these components of child behaviours and risks.

Table 4.6.3: Child behaviours and risks

	Health behaviour	Risk behaviour	Experience of violence
Health behaviour	1		
Risk behaviour	0.21	1	
Experience of violence	0.00	0.21	1

Chart 4.6.16 presents the dimension league table for behaviours and risks. Sweden, Poland, the Netherlands, and Ireland perform best in this dimension. Belgium, the United States and, by some margin, the United Kingdom perform worst.

Chart 4.6.16: Child behaviours and risks

		70	75	80	85	90	95	100	105	110	115
1	Sweden										
2	Poland										
3	Netherlands										
4	Ireland										
5	Spain										
6	Denmark										
7	Finland										
8	Greece										
9	Czech Republic										
10	Italy										
11	Germany										
12	Switzerland										
13	Norway										
14	France										
15	Portugal										
16	Austria										
17	Canada										
18	Hungary										
19	Belgium										
20	United States										
21	United Kingdom										

5. CONCLUDING DISCUSSION: LIMITATIONS OF THE ANALYSIS

This is a first attempt to develop a set of indicators of child well-being in OECD countries and we are confident it will not be the last attempt. There are a number of weaknesses with this attempt that are worth highlighting as a guide to future work.

- It is too adolescent focussed. Too many of the indicators come from the WHO Health Behaviour of School Children Survey, which is a sample of 11, 13 and 15-year-olds, and the OECD PISA survey, which is a sample of 15-year-olds. One danger of this is that these indicators might steer the reader to matters that are important to adolescent children rather than children of other ages.

- The analysis does not cover all the dimensions of child well-being. For example in this version there is nothing on housing and the environment of children or their participation in civic activities, though the EU index we have produced (Bradshaw, Hoelscher and Richardson 2006) was able to draw on the European Quality of Life Survey for data on housing conditions and the Civic Education Study for citizenship type indicators.

- The analysis has used official administrative sources and survey data and does not adequately represent the well-being of minority and particularly excluded children, who may not feature in administrative series or sample surveys or be too small a minority in both to feature. Among the indicators that are not but should be included in this paper are data on abandoned children, violence within the family, children from ethnic minorities, child prostitution, children in and leaving care, child handicap, childcare, child mobility.

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- The analysis is weak on dispersion. It uses thresholds and estimates the proportions of children above or below the threshold. However, this only gives part of a picture - what is hidden is the dispersion or degree of difference within a country. It is possible to produce measures of dispersion if we have access to the micro-social data such as the PISA data. However, it was not possible with administrative data and for the main survey used, the Health Behaviour in School Aged Children Survey, for this we used reported data as the source because the raw data from the 2001/02 survey was only made available after our analysis had been completed (in June 2006). So for example we give the proportion lacking x items in a list but this hides the degree of difference in the proportions lacking none and lacking all items.

- This is associated with another problem. Some of the data is really too old. International comparative surveys are not repeated regularly enough - HBSC every four years, PISA every three years, the Luxembourg Income Study every five years.

- For some of the dimensions there are obvious data missing that would ideally be included. So for example in the Material well-being dimension we are lacking data on poverty gaps, on persistent poverty and income poverty measures using a more absolute measure. In the EU index we were able to include poverty gaps because such data is available from the European Community Household Panel and the Survey of Income and Living Conditions.

- The surveys we have used were not designed to study the well-being of children though HBSC and PISA are at least comparative surveys of children and actually fill a gap in the many countries that do not have a survey of children of their own. There are other international comparative household surveys which could contribute more if they made more effort to collect data on children. For example the European Social Survey is a very welcome new survey, quick to be published, easily accessible, and covering 22 countries but we were unable to use it for a single indicator in either this analysis or the EU version because despite the second sweep of ESS focussing on families it does not collect any data on children.

- Of course this analysis involved making choices about which indicators to include, how to organise them into components and dimensions. It was also decided to give indicators and dimensions equal weight. Anybody may disagree with the choices and the weighting assumptions and indeed undertake their own analysis. To help them do that the data set may be obtained by email from djr113@york.ac.uk.

- Finally there is not trend data here: the analysis is purely cross sectional. Analysis of change in well-being over time remains a challenge for future research.

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Dimensions	Material well-being					Health and safety					
Components	Child income poverty	Deprivation			Joblessness	Health at birth		Immunisation			Child mortality
Countries / Indicators	Relative income poverty: percentage of children (0-17) in households with equivalent income less than 50 per cent of the median	Percentage of children age 11, 13 and 15 reporting low family affluence	Percentage of children age 15 reporting less than six educational possessions	Percentage of children age 15 reporting less than ten books in the home	Percentage of individuals in working-age households with children without an employed adult OECD	Infant mortality rate (deaths before the age of 12 months per 1000 live births)	Low birth weight rate (% births less than 2500g)	Measles, % children aged 12-23 months: 2003	DPT3, % children aged 12-23 months: 2002.	Pol3 %, children aged 12-23 months : 2002.	Accidental and non-accidental deaths under 19 per 100,000 (average of latest three years available)
Australia	11.6		16.4	4.9	9.5	4.8	6.4	93	93	93	15.1
Austria	13.3	16.8	16.7	9.3	2.1	4.5	7.1	79	83	82	15.0
Belgium	6.7	16.9	21.0	11.7	4.0	4.3	6.5	75	90	95	15.1
Canada	13.6	10.7	21.9	6.4	3.0	5.4	5.8	95	91	89	14.8
Czech Republic	7.2	40.2	27.8	1.9	7.2	3.9	6.6	99	98	97	18.7
Denmark	2.4	13.5	27.2	7.4	4.1	4.4	5.5	96	98	98	
Finland	3.4	17.8	20.5	5.1	3.1	3.1	4.1	97	98	95	14.9
France	7.3	16.1	25.4	9.1	6.2	3.9	6.6	86	97	98	12.5
Germany	10.9	16.4	17.6	6.9	8.8	4.2	6.8	92	89	95	13.4
Greece	12.4	28.7	61.8	7.2	2.4	4.8	8.3	88	88	87	13.5
Hungary	13.1	38.7	44.1	4.1	11.3	7.3	8.7	99	99	99	16.1
Iceland			8.4	3.3		2.4	3.1	93	95	91	11.6
Ireland	15.7	20.7	31.0	10.4	6.9	5.1	4.9	78	85	84	15.0
Italy	15.7		25.8	9.0	3.8	4.3	6.5	83	96	96	9.2
Japan	14.3		53.3	9.8	0.4	3.0	9.1	99	96	81	12.8
Netherlands	9.0	9.0	18.3	12.6	5.7	4.8	5.4	96	98	98	9.0
New Zealand	14.6		21.9	6.1	7.1	5.6	6.1	85	90	82	23.1
Norway	3.6	5.8	11.9	4.6	4.6	3.4	4.9	84	91	91	13.0
Poland	14.5	43.1	42.5	8.4	9.3	7.0	5.9	97	99	98	18.3
Portugal	15.6	28.9	33.9	12.9	1.7	4.1	7.4	96	98	96	19.9
Spain	15.6	22.4	24.7	4.4	4.2	4.1	6.8	97	96	96	12.1
Sweden	3.6	9.2	18.2	4.5	2.7	3.1	4.5	94	98	99	7.6
Switzerland	6.8	13.1	22.7	10.9	1.8	4.3	6.5	82	95	94	12.3
United Kingdom	16.2	15.3	20.1	9.4	7.9	5.3	7.6	80	91	91	8.4
United States	21.7	13.1	24.2	12.2	2.3	7.0	7.9	93	94	90	22.9
Mean	11.2	19.8	27.0	7.9	5.0	4.6	6.4	90	94	93	14.3
Standard Dev	5.1	10.7	12.2	3.1	2.9	1.2	1.4	8	5	6	4.1
REVERSED	YES	YES	YES	YES	YES	YES	YES	NO	NO	NO	YES
Non - OECD Countries											
Croatia		43.5				6.0	6.0	95	95	95	17.7
Estonia		40.1				8.0	4.0	95	97	98	39.4
Israel		27.5	13.1	8.8	5.0	5.0	8.0	95	97	93	60.0
Latvia		55.9	58.4	3.3		10.0	5.0	99	97	98	43.3
Lithuania		53.1				8.0	4.0	98	95	97	31.7
Malta		43.1				5.0	6.0	90	95	95	7.3
Russian Federation		58.3	72.7	4.4		16.0	6.0	96	96	97	56.1
Slovenia		20.5				4.0	6.0	94	92	93	23.3

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Dimensions	Educational well-being						Peer and family relationships				
Components	Achievement			Participation	Aspirations		Family structure		Family relations		Peer relations
Countries / Indicators	Reading literacy achievement, age 15	Mathematics literacy achievement, age 15	Science literacy achievement, age 15	Percentage of 15-19 year-olds in full time or part time education	Percentage of 15-19 year-olds not in education, training or employment	Percentage of pupils age 15 expecting to find work requiring low skills	Percentage of young people (age 11, 13 and 15) living in single parent families	Percentage of young people (age 11, 13 and 15) living in step families	Percentage of 15 year-olds who eat the main meal of the day with their parents 'several times per week'	Percentage of 15 year-olds whose parents spend time 'just talking to them' several times per week	Percentage of young people age 11, 13 and 15 who find their peers 'kind and helpful'.
Australia	525	524	525	82.1	6.8	24.6			69.9	51.3	
Austria	491	506	491	77.3	10.2	33.1	12.5	7.5	68.2	47.1	77.2
Belgium	507	529	509	93.9	7.1	19.1	9.2	8.1	89.7	55.1	70.1
Canada	528	532	519		6.7	22.0	14.6	10.5	71.8	46.9	64.0
Czech Republic	489	516	523	90.1	5.8	39.3	13.4	12.2	72.9	72.0	43.4
Denmark	492	514	475	84.7	3.0	21.9	16.5	13.5	85.6	71.2	73.4
Finland	543	544	548	86.0	9.8	27.3	14.6	11.0	59.8	78.8	70.4
France	496	511	511	87.2	14.0	41.2	11.0	9.7	90.4	63.9	53.7
Germany	491	503	502	89.0	4.7	34.1	12.8	9.2	81.5	42.5	76.1
Greece	472	445	481	82.6	9.3	18.3	7.5	1.2	69.6	58.1	60.2
Hungary	482	490	503	83.4	6.8	30.7	13.4	7.0	74.7	90.2	64.9
Iceland	492	515	495	83.0	4.3	32.9			90.8	43.9	
Ireland	515	503	505	84.4	5.2	24.2	10.3	3.5	77.1	62.0	67.0
Italy	476	466	486	77.8	10.5	25.1	7.0	2.2	93.8	87.2	55.1
Japan	498	534	548			50.3			85.6	60.2	
Netherlands	513	538	524	84.9	4.6	34.0	10.7	6.1	90.0	70.6	73.2
New Zealand	522	523	521	67.0		24.5			64.4	51.9	
Norway	500	495	484	85.3	2.7	29.8	16.2	12.5	87.3	64.0	74.3
Poland	497	490	498	88.2	3.3	17.1	10.2	2.4	78.4	49.7	60.2
Portugal	478	466	468	70.9	8.8	18.5	9.8	5.8	86.2	70.6	80.0
Spain	481	485	487	78.5	7.3	25.3	9.1	3.0	83.4	60.2	59.2
Sweden	514	509	506	86.8	4.2	28.7	16.8	12.7	84.1	51.6	76.7
Switzerland	499	527	513	83.1	8.0	39.7	12.5	6.7	89.9	48.6	81.4
United Kingdom	507	508	518	75.9	9.4	35.3	16.9	14.5	66.7	60.5	43.3
United States	495	483	491	75.4	7.0	14.4	20.8	16.0	65.7	67.9	53.4
Mean	500	505	504	82.5	6.9	27.5	12.7	8.3	79.4	62.8	65.6
Standard Dev	18	24	19	6.3	2.8	7.6	3.5	4.4	9.8	13.1	11.3
REVERSED	NO	NO	NO	NO	YES	YES	YES	YES	NO	NO	NO
Non - OECD Countries											
Croatia							7.4	2.8			72.5
Estonia							17.7	8.8			57.5
Israel	452	433	434	65.6	25.2	35.2	9.3	3.9	58.3	36.9	63.9
Latvia	491	483	489			23.5	18.6	9.0	82.9	63.7	54.4
Lithuania							13.5	6.8			51.7
Malta							4.8	1.7			69.2
Russian Federation	442	468	489	29.3		30.5	16.9	6.8	90.6	78.4	45.6
Slovenia							8.7	3.8			74.3

Dimensions	Behaviours and risks											
Components	Risk behaviour						Experiences of violence		Health behaviour			
Countries / Indicators	Percentage of students age 11, 13 and 15 who smoke cigarettes at least once a week	Percentage of students age 11, 13 and 15 who report having been drunk on two or more occasions	Percentage of students age 11, 13 and 15 who report having used cannabis in the last 12 months	Teenage fertility rate: births per 1,000 women age 15 - 19	Percentage of 15 year-olds who report having had sexual intercourse	Percentage of 15 year-olds who used a condom during their last sexual intercourse	Percentage of young people age 11, 13 and 15 who report having been involved in fighting in the previous twelve months	Percentage of young people age 11, 13 and 15 who report being bullied in the previous two months	Percentage of young people age 11, 13 and 15 who report eating fruit every day	Percentage of young people age 11, 13 and 15 who report eating breakfast every school day	Mean number of days on which young people age 11, 13, and 15 report being physically active for one hour or more of the previous/typical week	Percentage of young people age 13 and 15 who report being overweight
Australia				18.0								
Austria	13.2	15.1	11.7	22.0	20.6	81.9	38.9	44.0	37.4	57.4	4.2	11.9
Belgium	10.6	14.5	21.8	11.0	25.0	70.5	44.5	30.1	26.2	74.6	3.1	10.4
Canada	7.5	19.8	40.4	20.0	24.4	75.8	35.8	37.2	37.3	58.2	4.4	19.5
Czech Republic	14.3	14.7	27.1	23.0	18.3		47.9	16.1	42.2	51.8	4.3	9.4
Denmark	8.2	20.1	21.3	8.0			38.4	31.3	31.9	72.8	3.8	10.3
Finland	14.0	24.7	7.5	10.0	28.1	65.6	25.1	23.9	21.5	67.5	3.8	13.3
France	11.5	8.0	27.5	10.0	22.2	82.0	37.5	35.1	34.2	71.4	3.1	11.2
Germany	16.4	17.7	18.5	14.0	28.0	70.0	28.1	36.5	42.4	67.0	3.6	11.3
Greece	6.1	10.0	4.2	17.0	21.6	86.9	44.3	24.5	38.1	45.6	3.9	16.0
Hungary	12.6	16.4	12.4	27.0	21.0	78.2	48.0	23.0	31.3	53.4	3.7	12.8
Iceland												
Ireland	9.6	13.8	20.0	15.0			39.8	26.1	32.6	71.8	4.5	12.1
Italy	10.9	9.7	20.5	8.0	23.9		38.2	27.3	38.4	62.4	3.5	15.2
Japan				4.0								
Netherlands	10.7	12.9	21.6	5.0	22.9	77.9	36.3	29.4	28.1	78.0	4.1	7.6
New Zealand				30.0								
Norway	10.1	15.6		10.0			36.9	32.3	29.1	69.3	3.5	11.8
Poland	11.2	15.2	15.1	16.0	15.1	73.0	38.7	30.2	46.1	69.0	4.0	7.1
Portugal	12.5	12.6	19.7	23.0	25.3	73.2	35.2	48.5	47.8	80.8	3.4	14.3
Spain	12.8	10.2	30.8	9.0	16.4	89.1	40.4	26.0	36.6	72.2	3.8	16.9
Sweden	7.0	16.1	4.7	9.0	28.1	65.3	34.8	15.0	26.7	73.4	3.9	10.4
Switzerland	11.0	13.6	37.8	5.0	22.9	80.7	31.2	40.5	35.5	53.5	3.9	8.5
United Kingdom	13.1	30.8	34.9	28.0	38.1	70.2	43.9	35.8	26.7	56.1	4.2	15.8
United States	7.3	11.6	31.4	46.0			36.1	33.9	27.7	47.2	4.4	25.1
Mean	11.0	15.4	21.4	16.0	23.6	76.0	38.1	31.0	34.2	64.4	3.9	12.9
Standard Dev	2.7	5.2	10.4	9.8	5.3	7.2	5.8	8.2	7.0	10.4	0.4	4.2
REVERSED	YES	YES	YES	YES	YES	NO	YES	YES	NO	NO	NO	YES
Non - OECD Countries												
Croatia	9.7	13.6	14.3	18.0	16.5	74.2	37.7	24.5	35.0	69.9	3.8	10.4
Estonia	12.4	23.9	14.4	28.0	18.0	73.2	47.6	44.2	20.1	73.7	3.5	7.1
Israel	8.4	9.3	7.0	23.0	21.1	81.5	39.3	35.8	51.2	40.1	3.5	11.3
Latvia	12.5	16.5	8.0	32.0	18.0	79.2	40.3	48.4	23.8	74.8	3.8	6.0
Lithuania	12.2	24.7	6.0	33.0	18.6	76.3	49.0	64.3	22.3	72.0	4.3	4.4
Malta	10.0	10.7	6.0				41.5	24.1	47.1	52.2	3.7	25.5
Russian Federation	12.5	19.4	8.8	46.0	28.7		43.3	37.7	27.0	68.8	3.7	5.2
Slovenia	12.0	18.2	24.4	9.0	26.2	74.0	40.5	21.9	38.5	39.2	4.2	13.4

Dimensions	Subjective well-being					
Components	Health	Personal well-being				Education
Countries / Indicators	Percentage of young people age 11, 13 and 15 who rate their health as fair or poor.	Percentage of young people age 11, 13 and 15 who rate themselves above the middle of the life satisfaction scale.	Percentage of students age 15 who agree with the statement 'I feel like an outsider or left out of things'.	Percentage of students age 15 who agree with the statement 'I feel awkward and out of place'.	Percentage of students age 15 who agree with the statement 'I feel lonely'.	Percentage of students age 11, 13 and 15 who report liking school a lot.
Australia			7.7	8.9	6.5	
Austria	15.6	88.1	5.8	8.2	7.2	36.1
Belgium	13.1	87.8	7.9	15.6	6.4	17.9
Canada	13.7	86.3	8.9	10.5	7.6	21.9
Czech Republic	11.8	83.4	9.7	6.4	7.0	11.6
Denmark	14.8	87.7	5.3	11.8	6.2	21.4
Finland	11.0	91.6	5.5	8.4	6.2	8.0
France		85.1	7.7	12.3	6.4	21.7
Germany	14.9	85.4	6.1	11.4	6.2	29.5
Greece	10.1	92.2	6.3	8.3	6.5	29.5
Hungary	14.9	84.4	9.3	7.6	7.3	26.3
Iceland			9.8	10.9	10.3	
Ireland	12.9	86.8	5.6	7.8	4.6	22.3
Italy	12.5	85.2	4.9	6.2	6.0	13.0
Japan			5.9	18.1	29.8	
Netherlands	17.2	94.2	3.9	6.9	2.9	34.4
New Zealand			7.7	10.4	6.6	
Norway	18.5	82.9	5.6	9.1	7.0	38.9
Poland	14.4	80.0	8.2	9.9	8.4	17.3
Portugal	19.1	80.5	6.4	11.7	5.0	31.1
Spain	9.0	87.8	3.3	8.9	4.4	22.8
Sweden	13.2	86.0	5.2	4.9	6.7	21.6
Switzerland	9.1	89.0	7.1	11.7	6.6	22.3
United Kingdom	22.6	83.5	6.8	8.7	5.4	19.0
United States	19.8	83.1				23.4
Mean	14.4	86.4	6.4	9.7	7.3	23.3
Standard Dev	3.6	3.6	1.7	3.1	5.3	7.9
REVERSED	YES	NO	YES	YES	YES	NO
Non - OECD Countries						
Croatia	20.0	81.3				11.5
Estonia	17.5	76.7				11.1
Israel	9.2	89.1	2.3	3.6	2.7	22.2
Latvia	27.4	77.0	5.2	9.6	9.0	28.4
Lithuania	32.4	75.2				25.8
Malta	21.2	83.0				34.3
Russian Federation	31.9	76.2	6.1	14.3	8.5	15.8
Slovenia	12.7	85.6				32.1

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Note: Greyed-out figures are not used in the calculation of components.