SURVEY OF ADULT SKILLS (PIAAC)

What is the relationship between education, literacy and self-reported health?

- Highly-educated and highly-skilled individuals are more likely to report better health than the less-educated and less-skilled, even when comparing individuals with similar background characteristics.

- The difference in self-reported health that is associated with schooling is largest in Norway and the United States and smallest in France, Italy and Sweden. The association between self-reported health and literacy is highest in Austria and the United States.

- Cross-country differences in the association between schooling and self-reported health and between literacy proficiency and self-reported health suggest that healthcare and social welfare systems play an important role in shaping the association between schooling, literacy and health.

Tackling the high incidence of poor health and inequalities in health outcomes has risen to the top of policy agendas. Poor health is in fact a major burden for the affected individual, but also for governments: recent estimates suggest that health expenditures account for as much as 9% of GDP across OECD countries. Moreover, there are considerable disparities in health across population subgroups, with individuals with low socio-economic backgrounds and poor educational attainment being disproportionately more likely to be in ill health.

OECD

Disparities in self-reported health have important social and economic costs

The OECD Survey of Adult Skills (PIAAC) contains detailed measures of educational participation, literacy, numeracy and problem-solving skills applied to a technology-rich environment. The study also contains information on self-reported health, measured through the following statement: "How is your health these days?" to which respondents could answer on a five-point scale from "excellent", "very good", "good", "fair" to "poor". Self-reported health is an important predictor of mortality and of the onset of disability and stress levels.

On average, only around 4.1% of participating individuals between the ages of 25 and 65 reported being in poor health while as many as 18% reported being in excellent health. The majority reported being in either good or very good health (33% and

30%, respectively). However, self-reported health varies considerably across countries and tends to be poorer among older adults. For example, in Korea, around 9% of individuals between 25 and 65 years of age reported being in poor health, compared to around 2% of adults in Greece. Similarly, in Chile, Estonia, Jakarta (Indonesia), Japan, Korea, Poland, the Russian Federation, Singapore and Turkey, less than 10% of individuals reported being in excellent health, compared to almost 26% of individuals in Ireland and 42% in Israel. On average across OECD countries, as many as 26% of 16-34 year-olds report being in excellent health and only around 1% report being in poor health. Conversely, 9% of 55-65 year-olds report being in excellent health, the same percentage who reports being in poor health.

Figure 1 / **Self-reported health in countries participating in the Survey of Adult Skills**
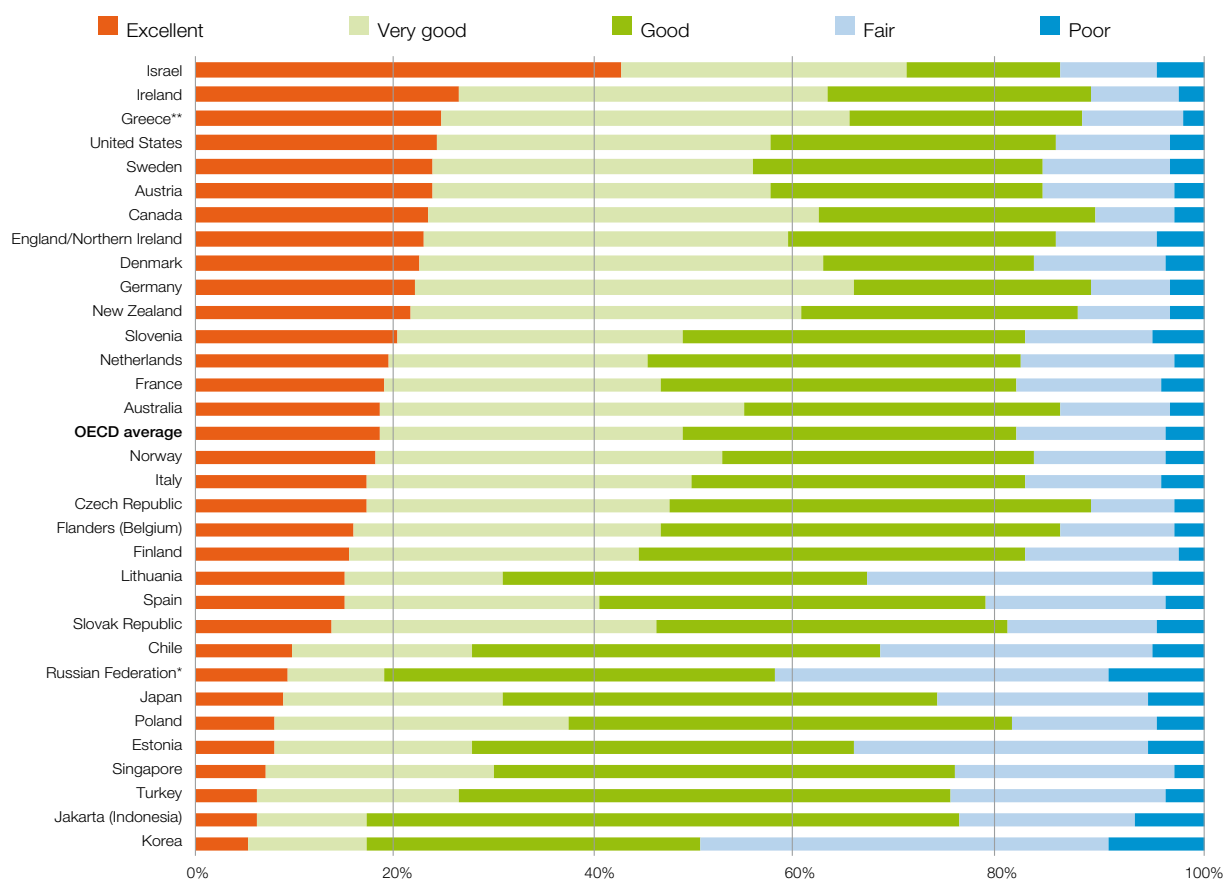
Notes:
Percentage of 16-65 year-olds, by level of self-reported health.
Countries and economies are ranked in descending order of the percentage of 16-65 year-olds who report being in excellent health.
* The sample for the Russian Federation does not include the population of the Moscow municipal area.
** The data for Greece include a large number of cases (1 032 out of 4 925) in which there are responses to the background questionnaire but where responses to the assessment are missing.
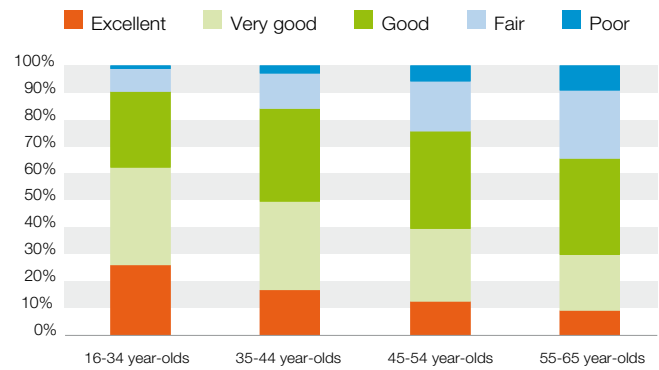*Source:* OECD Survey of Adult Skills (2012, 2015), www.oecd.org/skills/piaac/publicdataandanalysis.

Better educated and better skilled individuals generally report to be in better health than their less educated and skilled counterparts...

Better-educated individuals are more likely to report better health than less-educated individuals, even after controlling for a variety of individual background characteristics. The strength of the association between years of schooling, literacy and self-reported health is reduced, but remains large and statistically significant after controlling for individuals' background characteristics. However, the strength of the relationships between education and self-reported health and literacy and self-reported health differs greatly across countries. When comparing individuals with similar socio-economic and demographic characteristics, the difference in self-reported health that is associated with schooling is largest in Chile, the Czech Republic, Denmark, Estonia, Greece, the Slovak Republic, Slovenia, and the United States and smallest in France and Spain. Similarly, the relationship between literacy and health is strongest in

Figure 2 / **Self-reported health declines with age**

Note: The figure shows the percentage of individuals who report being in excellent, very good, good, fair and poor health (OECD average).
Source: OECD Survey of Adult Skills (2012, 2015), www.oecd.org/skills/piaac/publicdataand analysis.

Austria and the United States, while no association can be observed, after controlling for years of education as well as other individual characteristics, in the Czech Republic, Greece and Italy.

... but countries vary considerably in how strong these associations are...

No causal claims can be made on the basis of evidence on correlations between schooling, cognitive skills and self-reported health. However, the between-country variations in the strength of the associations between years of schooling and health, and literacy and health support the notion that such associations may be context dependent. The amount of resources invested in healthcare provision, the organisation of healthcare systems, levels of economic development and the level of social cohesion that different communities enjoy may determine not only the overall health and well-being of populations, but may also have important distributional implications. These factors may in fact not only shape access to resources, but also vary the cognitive demands individuals face when they engage in lifestyle choices and when they interact with healthcare providers.

An important finding is that the associations between years of schooling and health, and

literacy and health are related but are both conceptually and empirically distinct. In around half of the countries covered, the relationship between education and health, and literacy and health are both large or both small, showing high levels of disparities or equality in self-reported health among individuals with different levels of education and literacy. However, in other countries the relationship between education and health (controlling for literacy) is large and the relationship between literacy and health (controlling for education) is small and vice versa. In countries where the association between education and health (controlling for literacy) is strong – and the association between literacy and health is weak - access to resources may be at the root of disparities in health. In countries where the association between literacy and health (controlling for education) is strong – and the association between education and health is weak – disparities may be more associated with the (in)ability to effectively acquire and process information.

… as well as in the reasons that determine such associations

In countries with higher health expenditures as a percentage of GDP, the relationship between literacy and health tends to be steeper. This relationship may have to do with the different organisational features and funding arrangements of countries with greater health expenditures. These countries tend to have market-based systems for the provision of healthcare services which may place a greater burden on individuals to acquire information and use such information to make effective choices. For example, the health and social welfare system of the United States require individuals to make choices, such as selecting a health insurance plan or a healthcare provider, that may affect their health outcomes. While this offers greater choice and freedom to individuals, it also requires that individuals have the skills that are necessary to effectively acquire, process and react to information. Healthcare in systems where coverage is offered in an open market implicitly assumes high levels of literacy among individuals, and it may be more difficult to serve effectively the health needs of individuals with poor cognitive skills.

Education is associated with health in all countries even when controlling for cognitive ability. The steepness of this association, after controlling for any differences in the cognitive ability of individuals who attended school for a different number of years, is a clear indicator of how much social status and social class give some individuals (preferential) access to goods and services, such as good primary and specialist care, short waiting lists for key procedures, or a home in a safe neighborhood with good air quality and outside spaces in which to exercise. It can also signal differences in the employment opportunities individuals with different levels of education enjoy in different countries, and other factors, such as work-related stress and sense of agency, that can negatively affect the health of individuals with low social status.

Figure 3 / **Cross-country variation in the education and literacy gradients in self-reported health**
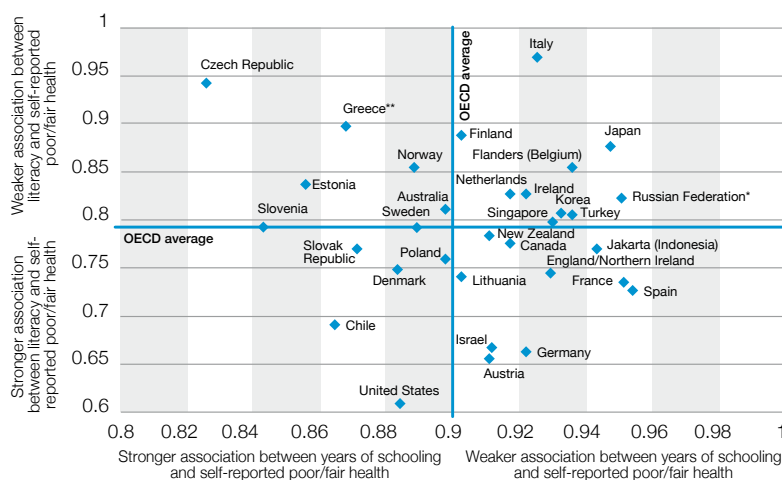
Note: The figure shows the odds ratios for the change in self-reported poor/fair health that are associated with a difference of one year of schooling and 50 PIAAC score points controlling for gender, age (introduced as a series of 10 year bands indicators), if at least one parent of the respondent obtained a tertiary degree, if the repondent is working and if the respondent was born in the country of the assessment.
* The sample for the Russian Federation does not include the population of the Moscow municipal area.
** The data for Greece include a large number of cases (1 032 out of 4 925) in which there are responses to the background questionnaire but where responses to the assessment are missing.
Source: OECD Survey of Adult Skills (2012, 2015), www.oecd.org/skills/piaac/publicdataandanalysis.

The bottom line »

Reducing education and skill disparities in health, particularly in systems that have no universal provision of health care, requires that all individuals have at least basic levels of literacy to be able to understand and act upon health-related information.

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> **FOR MORE INFORMATION:** Borgonovi F. and A. Pokropek (2016), "Education and self-reported health: Evidence from 23 countries on the role of years of schooling, cognitive skills and social capital", *PLoS ONE*, Vol. 11/2, http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0149716.

> **VISIT:** www.oecd.org/site/piaac
Education Indicators in Focus - PISA in Focus - Teaching in Focus

The Survey of Adult Skills is a product of the OECD Programme for the International Assessment of Adult Competencies (PIAAC).