

Key findings

- The interest of 15-year-old students in pursuing careers as nurses has decreased in at least half of OECD countries between 2018 and 2022, according to the latest data from the Programme for International Student Assessment (PISA) survey. On average across OECD countries, the share of young people expecting to work as nurses fell from 2.3% in 2018 to 2.1% in 2022. This reduction is particularly marked in the United States and Canada, some Nordic countries (Norway and Denmark), Ireland, the United Kingdom and Switzerland.
- In many countries, the public image and perception of nurses during the pandemic was mixed: on the one hand, frontline health workers have been portrayed as “heroes” during the early parts of the pandemic in recognition of the hard work and risks, but on the other hand the heavy workload, difficult working conditions and low pay resulted in high job dissatisfaction and intention to quit the profession.
- One of the main reasons for the relatively low interest in the nursing profession is that it mainly attracts girls. Results from PISA 2022 show that over 90% of 15-year-old students expecting to work as nurses are girls in most OECD countries. A continuing challenge in all countries is to address the persistent stereotype that views nursing as a profession suited primarily for women, requiring extra efforts to attract male students. Addressing this bias would require efforts to change perceptions of traditional gender roles and better career guidance.
- More generally, improving the working conditions and pay of nurses is key to attracting more young boys and girls to the profession and to retaining them. If OECD countries are unable to attract a sufficient number of qualified and motivated young people into nursing, they will need to rely on international recruitment to fill their needs. To avoid exacerbating shortages in countries of origin that are struggling to meet their own healthcare needs, there will be a need for a fair and ethical management of such international recruitment.

Attracting more young people in health is crucial to address workforce shortages

The COVID-19 pandemic has reminded everyone of the crucial role frontline health workers play, but also highlighted how difficult and demanding the working conditions can be in the health sector. It revealed that various parts of health systems had been chronically understaffed, subjecting the existing workforce to prolonged overextension and severe stress, which in turn led to widespread job dissatisfaction, burnout and an increased desire to reduce work hours or leave the profession entirely (OECD, 2023^[1]).

Recent OECD work has highlighted the urgent need for new investments to bolster the number of frontline health workers to respond to growing healthcare needs and be better prepared to respond to any future shocks. The estimates called for a net increase of over 2 million additional nurses across OECD countries compared with the 2019 pre-pandemic level, a nearly 20% growth (Morgan and James, 2022^[2]).

Expanding nurse training programmes is the main policy lever for countries to increase their nursing workforce and prevent future shortages. Most OECD countries have recognised this approach by increasing the number of places in their respective nursing education programmes (OECD, 2023^[3]).

However, this policy presumes the existence of a sufficient pool of qualified candidates interested in taking up these training and education opportunities.

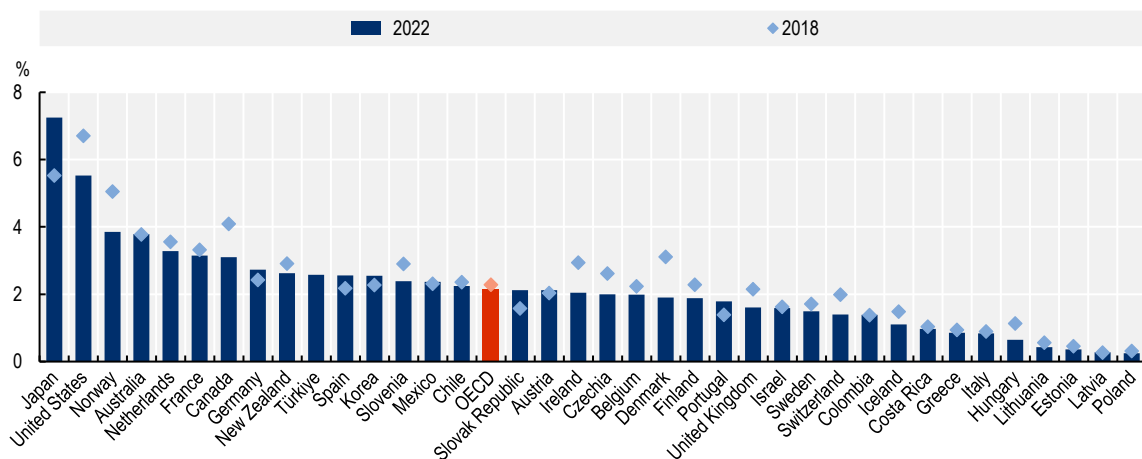
Many factors can influence the interest of young people in pursuing a career in nursing or in other occupations, including: 1) intrinsic factors, such as a desire to help others and an interest in the healthcare sector; 2) extrinsic factors, such as remuneration, job security, working conditions and the prestige of the profession; 3) socio-demographic factors, including gender and socio-economic background; and 4) interpersonal factors, including family influence and interactions with health professionals. Intrinsic factors generally play a particularly important role in choosing nursing as a career (Wu et al., 2015^[4]).

There are growing concerns that nursing may become less attractive to young people, at least partly because of the difficult working conditions that the pandemic exposed and greater perceived opportunities in other occupations and sectors. For example, in the United States, for the first time since 2000, the number of applications to Bachelor degree programmes in nursing fell by 2.4% in 2022, while actual enrolment decreased slightly less by 1.4% (American Association of Colleges of Nursing, 2023^[5]).

PISA data show that young people’s interest in nursing decreased in half of OECD countries between 2018 and 2022

Interest in nursing among 15-year-olds has never been high in most OECD countries relative to medicine, and it has diminished between 2018 and 2022 in at least half of them according to the most recent PISA results (see Box 1 for more information about PISA data). The reduction in the share of young people anticipating to become nurses was particularly marked in the United States and Canada, some Nordic countries (Norway and Denmark), Ireland, the United Kingdom and Switzerland. Across OECD countries, the share of 15-year-olds expecting to become nurses fell from 2.3% in 2018 to 2.1% in 2022 (Figure 1).

Figure 1. Nursing interest among 15-year-olds fell in half of OECD countries between 2018 and 2022



Note: Luxembourg did not participate in PISA 2022. Data from Türkiye for PISA 2018 is not included due to low reliability.

Source: OECD, PISA 2018 and 2022 Database.

Box 1. PISA data on the career aspirations of secondary school students

Data on the career aspirations of young people come from the last two waves of the PISA survey in 2018 and 2022. Fifteen-year-old adolescents were asked the question: “What kind of job do you expect to have when you are about 30 years old?”. The responses to this question were coded using the International Standard Classification of Occupations 2008 (ISCO-08). The analysis of interest in working as health professionals and information and communications technology (ICT) professionals includes all health professional occupations with the exception of traditional and complementary medicine professionals, and all ICT professionals groups. The more specific analysis on interest in pursuing a career as nurse includes all categories of nurses, excluding those reporting interest in becoming midwives only. All respondents who did not respond to this question or did not provide sufficiently specific responses were excluded (this represented around 25% of all respondents). This brief covers all OECD countries that participated in PISA 2022 (only Luxembourg did not participate in PISA 2022).

What young people think as teenagers does matter as longitudinal studies suggest that early career aspirations in working in the health sector have a predictive character of where young people will end up working in (Schoon, 2001^[6]).

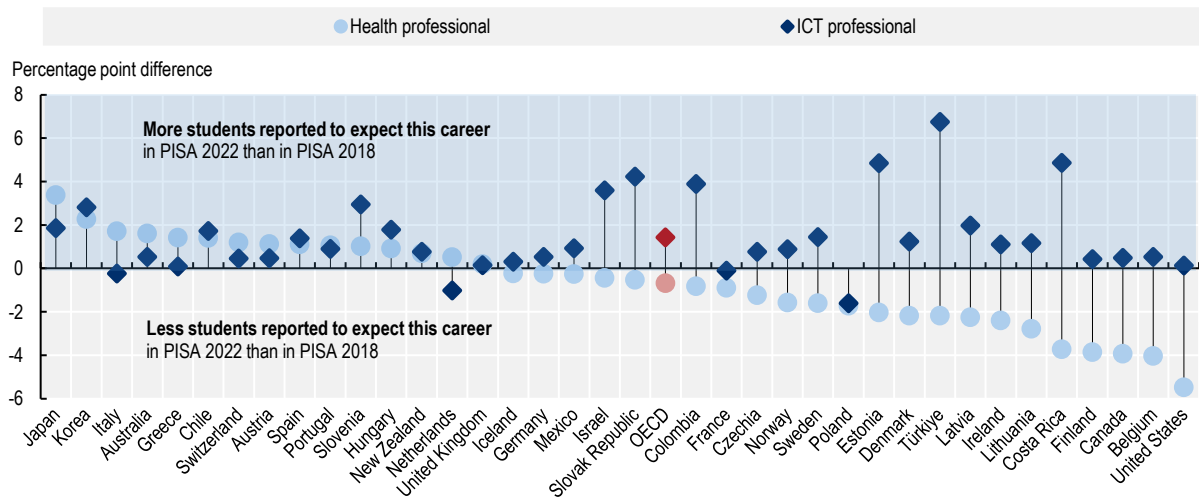
On a more positive note, the share of 15-year-olds expecting to work as nurses has increased in some countries between 2018 and 2022, most notably in Japan, but also to a lesser extent in Korea, the Slovak Republic, Spain and Portugal. In Japan, this increase was also reflected in national surveys conducted among Japanese high-school students (aged 15 to 18) where girls’ interest in becoming a nurse has increased since 2019, and nursing ranked as the most popular profession among female high-school students in 2021 and 2023 (Sony Life Insurance Company, 2023^[7]). As highlighted below, longstanding efforts of nursing faculties to offer regular open campus activities and greater respect for this profession are among the key factors in Japan to explain this interest in nursing. However, the popularity of the profession among students appears to diminish by the time they enter undergraduate education, as the number of applications to nursing schools have fallen since 2018 (Government Statistics Office, 2024^[8]).

In Poland, the Baltic countries (Latvia, Estonia and Lithuania), Hungary, Italy and Greece, less than 1% of 15-year-olds anticipated working as nurses in 2022. Japan and the United States had the highest share of young people expecting to become nurses, despite the sharp reduction in the United States between 2018 and 2022.

Nursing is not the only the healthcare profession that witnessed a dip in popularity among 15-year-olds between 2018 and 2022. This trend also extended to other health occupations, including medicine. Despite this, the share of young students aspiring to become doctors continues to be about four times greater than for nurses. This ratio is not reflected in the actual distribution of health workers in healthcare, where on average OECD countries have about two-and-a-half times more nurses than doctors (OECD, 2023^[3]). By contrast, as shown in Figure 2, the desire to pursue a career in ICT has risen in nearly all OECD countries.

Figure 2. Students' interest in health professions fell in half of OECD countries between 2018 and 2022

Percentage-point change of students who expect to work as the following when they are about 30 years old



Note: ICT-related professions refer to jobs such as software and web developers. Health professions refer to jobs such as doctors, nurses, midwives and dentists. Countries are ranked in descending order of the change between 2018 and 2022 in the percentage of students who expect to work as a health professional.

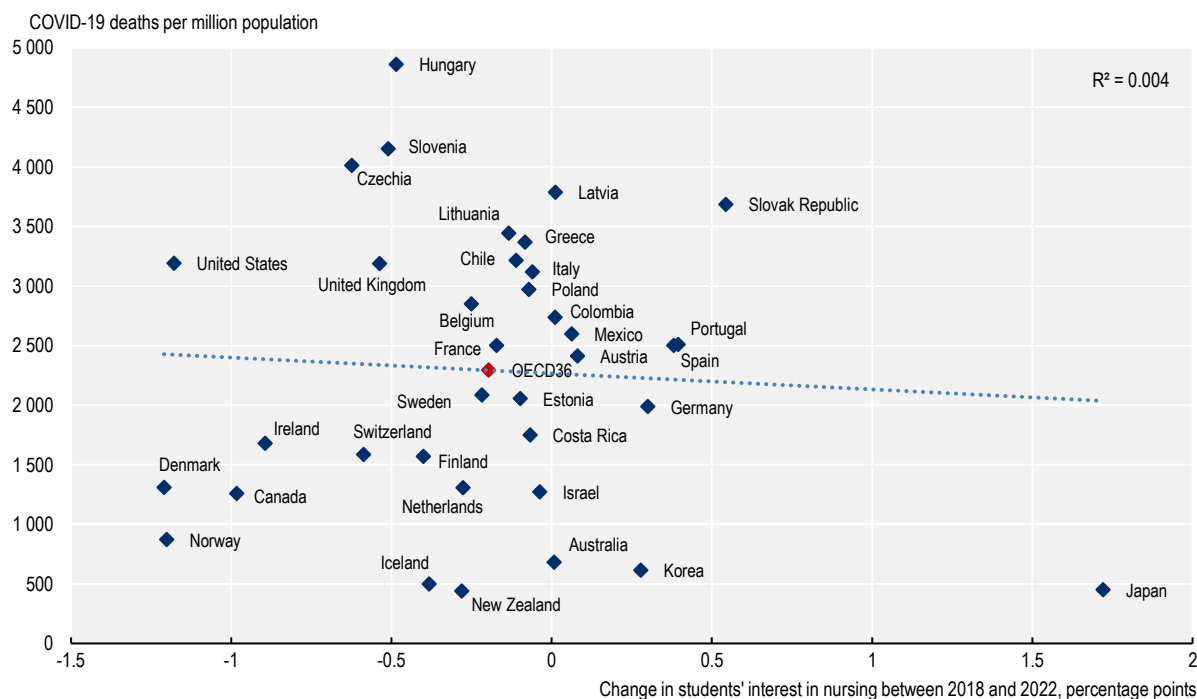
Source: Adapted from the publication PISA 2022 Results: Learning During – and From – Disruption (Volume II).

The pandemic has had mixed effect on young people's perception of nursing

While the public perception of the importance of frontline health workers increased greatly during the COVID-19 pandemic with health workers often being applauded and depicted as “healthcare heroes”, the pandemic also shed light on the difficult working conditions of many health workers and heavy workload, the physical and mental health risks associated with the job, along with a relatively low financial reward for nurses and healthcare assistants. This reinforced the image of nurses and healthcare assistants as a vocation involving self-sacrifice. Recent reviews of changes in the public perception of health professions, and nursing in particular, following the pandemic shows mixed results across countries. In Italy, an online survey conducted among the Italian population between August 2022 and January 2023 found that despite the perception that nurses play a crucial role in the national health system, the attractiveness of the profession remains exceedingly low and nursing is still perceived as a stressful and financially undervalued job (Rubbi et al., 2023^[9]). In the United States, an online survey of around 1 000 adults in 2021 found that COVID-19 had heightened positive perceptions of nursing, but also highlighted negative perceptions related to occupational safety, work-life balance and inadequate compensation. While over half of all survey respondents reported that they held a more favourable opinion of nursing following the pandemic, the perception of the profession was less favourable among younger people (NurseJournal, 2022^[10]). The results from a survey of nurses in the United States carried out in 2022 also showed a serious degradation in working conditions. The share of nurses who experienced feelings of burnout every day more than doubled from 12% in 2019 to 26% in 2021, while job dissatisfaction nearly doubled from 11% in 2017 to 20% in 2022 (National Center for Health Workforce Analysis, 2024^[11]).

Across countries, changes in students' interest in nursing between 2018 and 2022 do not seem to be closely related with the severity of the pandemic measured either in terms of reported COVID-19 death rates (Figure 3) or reported COVID-19 infection rates (not shown). In Japan, a relatively low number of reported COVID-19 death rates (and infection rates) was associated with an increase in students' interest in nursing between 2018 and 2022, whereas in the United States relatively high death rates from COVID-19 was associated with reduce interest in nursing. However, in most other countries, there is no clear correlation.

Figure 3. Changes in students' interest in nursing are not associated with COVID-19 death rates



Note: COVID-19 deaths include deaths that occurred in 2020, 2021 and 2022. Luxembourg did not participate in PISA 2022. PISA 2018 data from Türkiye is not included due to low reliability.

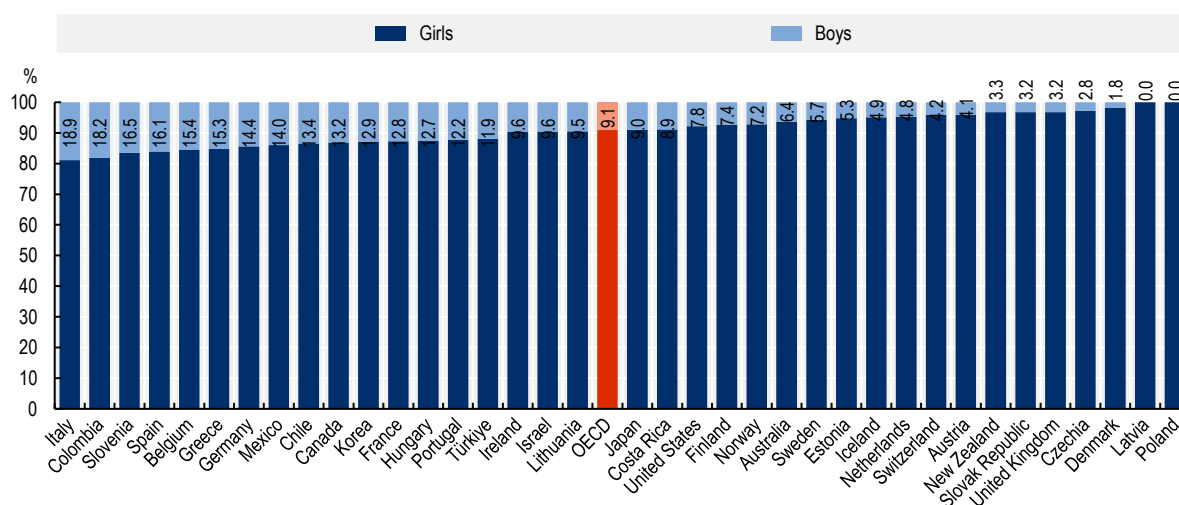
Source: PISA 2018 and 2022 survey for change in students' interest and WHO for COVID-19 death rates.

Girls remain the overwhelming majority of students interested in nursing

Earlier analysis of PISA 2018 data showed that the prospect of becoming a nurse was mostly appealing to 15-year-old girls, and more specifically to girls who scored lower on the PISA academic assessments in mathematics, science and reading and who originated from lower socio-economic classes (Mann et al., 2020_[12]). The results from the PISA 2022 survey confirm again that nursing continues to be a career aspiration mainly for girls, with very few boys showing interest in this occupation.

On average across OECD countries, over 90% of 15-year-old students who have expected to work as a nurse at age 30 were girls in 2022 (Figure 4). This proportion has remained stable between 2018 and 2022. In countries such as Latvia and Poland, almost none of the boys expressed any interest in nursing. Some countries, such as Italy, Colombia, Slovenia and Spain, were slightly more successful in attracting the interest of young boys in nursing, although even in these countries less than 20% of all students expecting to work as nurses were boys.

Figure 4. Over 90% of 15-year-old students expressing an interest in becoming nurses are girls in most OECD countries



Note: Luxembourg did not participate in PISA 2022.

Source: OECD, PISA 2018 and 2022 Database.

Countries use different strategies to attract more young people into nursing

Among OECD countries, Japan stands out for not only having sustained high levels of interest in nursing among 15-year-olds before the pandemic, but also for having subsequently increased it, as evidenced by PISA 2022 results. Similar to most other OECD countries, over 90% of Japanese students interest in nursing are female, but Japan is unique in having an unusually large proportion of female students expressing interest in this field: 14%, or one in seven – making nursing the most popular profession among them. Part of Japan’s success in fostering interest in nursing by such a large number of female students’ can be attributed to the longstanding efforts of nursing faculties to offer regular open campus activities. These activities allow prospects to interact with current students, experience nursing on medical manikins and discuss career opportunities with faculty staff. Nursing also continues to be a well-respected and regarded occupation in Japan. However, although Japanese nurses earn slightly above the national average wage, the ratio of their salary to the country’s average wage remains below the OECD average, suggesting that their income is not a key driver of their greater interest (OECD, 2023^[3]). Despite the positive results from PISA 2022 and ongoing efforts to attract young people in nursing, it is also important to note that actual applications to nursing programmes have decreased in recent years in Japan (Government Statistics Office, 2024^[8]).

In the United Kingdom, the NHS Long Term Workforce Plan released in June 2023 outlined some strategies to increase the attractiveness of health professions. The English Government seeks to train more health professionals and nurses by increasing educational capacity, including by offering more online nursing degrees, and encouraging apprenticeship routes for nurses and other allied health professionals (NHS England, 2023^[13]). The government also announced funding for students in health-related programmes to cover accommodation and travel expenses during their clinical placements for the 2023-24 academic year (Nursing Times, 2023^[14]; NHS England, 2023^[13]). Before the pandemic, NHS England had launched the “We are the NHS” public awareness campaign in 2018, aiming to attract more boys into nursing. This campaign contributed to a small initial increase of male applicants, but the number of male applicants then fell in 2022 and 2023 (UCAS, 2023^[15]).

In other OECD countries, recent measures have focused on enticing more students into nursing education programmes through financial incentives. These incentives include reducing tuition fees or awarding scholarships to students – especially targeting those from economically disadvantaged families, and in some instances, to all students regardless of their financial status. In Australia, the national government announced in 2021 a reduction of about 40% in course costs for nursing students in university programmes (Department of Health, 2021^[16]). In Canada, some provinces also offer financial incentives to attract more students in nursing and other health education programmes. For example, the Government of Ontario announced in 2022 a new “Learn and Stay Grant Program” that provides funding to eligible students in nursing to cover tuition fees and other education costs in exchange for a return-in-service agreement (Government of Ontario, 2022^[17]).

Across all countries, effectively attracting more young people into the nursing field should also focus on increasing male students, dismantling the long-standing stereotype that views nursing as a low-status, poorly paid profession suited primarily for women. Overcoming biases would require better career counselling and more customised interventions to enable hands-on experience and personal knowledge-building among students of modern nursing jobs (Williams et al., 2019^[18]).

Attracting more young boys and girls to nursing will require improving the overall perception of the profession through better working conditions and pay. While the remuneration of nurses in real terms has increased significantly over the past few years in some OECD countries (such as Czechia, Hungary, Slovenia and the Slovak Republic), it has stagnated or even decreased in several other countries (OECD, 2023^[3]). Ensuring that the wage growth of nurses at least keeps pace with inflation and the wages of other workers in professions with similar levels of education and training is critical to maintain the attractiveness of the nursing profession.

If OECD countries are not able to attract a sufficient number of talented and motivated young people into nursing, they may increasingly have to rely on international recruitment to meet their needs. However, this may simply exacerbate shortages of nurses in countries of origin. To avoid this, there will be a need for a fair and ethical management of international recruitment of nurses. Furthermore, the capacity of some of the key nurse-supplying countries to OECD countries, such as India and the Philippines, to export nurses is not unlimited. As these countries continue to grow economically and boost their health spending, their domestic demand for nurses and other health workers will rise, thereby tightening their capacity to make up for the shortfall in other countries.

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