Bringing women to the forefront of science and medicine

On March 8, 2012, the world celebrates International Women’s Day. Throughout the month, thousands of events will pay homage to the huge contribution women have made to society. As well as an opportunity to celebrate women’s achievements socially, politically, and economically, this day is also a sobering reminder of the continuing struggles women still face during their lives. One notable area is in science, in which many women have to overcome substantial barriers to flourish in their careers.

An inspiring story is that of Utako Okamoto, who with her husband Shosuke Okamoto discovered the antifibrinolytic drug, tranexamic acid, in the 1950s. Today, this drug is widely used in surgery and trauma to decrease bleeding and the need for blood transfusions. Ian Roberts, the chief investigator of the CRASH-2 study, which showed that the early administration of tranexamic acid to bleeding trauma patients reduces the risk of death, recently met Okamoto for the first time in Japan. Describing her as a “93-year old powerhouse”, Roberts was so impressed by her that he made a short film about this remarkable woman in science.

At the beginning of her research career, Okamoto was fortunate enough to work with a male neurophysiologist who understood the challenges women faced, and created many more opportunities for them than were otherwise available at the time. But Okamoto spoke about the long hours she put in the laboratory compared with her male counterparts, and when she moved to Keio University in Shinanomachi in Tokyo, things became even more difficult. One time, she and a female colleague were asked to leave a paediatric conference and were told that research was not a job for women. Okamoto recalled being ridiculed when she presented her research for the first time. “People said kindly that they wondered if I was going to dance for them!” She experienced further hardship when she became a mother. For example, there were no daycare options on campus so she had to keep the baby in the laboratory with her while she worked.

After the second Sino-Japanese war, her research group began working on blood, specifically on antiplasmins. Her aspiration was to work on something that would benefit humanity globally. Half a century later, the fruits of her scientific labour are turning into benefit for patients. Not only is the real public health impact of tranexamic acid in bleeding becoming apparent, but even more gratifying for Okamoto, it is now being trialled in the WOMAN trial as a treatment for postpartum haemorrhage, which kills about 100 000 women every year mainly in low-income and middle-income countries.

Okamoto’s story is indeed an extraordinary one. But how have opportunities for women to fulfil their potential in careers in science and medicine improved today? In the past few decades there have been dramatic gains in the proportion of women in scientific and medical professions. But studies have shown that not enough women progress to more senior positions, and they are under-represented at the top levels of academia. The last European Commission’s SHE (statistics and indicators on Gender Equality in Science) figures in 2009 showed that in the 27 countries making up the European Union, 59% of university graduates are females but only 18% of full professors are women. Furthermore, only 9% of universities have a woman at the top of the organisation. Failing to take advantage of half the population is believed to be damaging universities.

Similarly in medicine, a recent survey by The Times newspaper found that despite 42% of British doctors being women, less than a quarter of clinical academics and only 14% of clinical professors are women. Worse still, some university-based medical schools have no tenured female professors in their research departments. A welcome proposal to correct this appalling gender imbalance is that future funding to support medical research will only be allocated to those places that show a sizable achievement towards gender equality according to the Athena SWAN Charter. But achieving this goal should not simply be about stamping out traditional forms of discrimination that bias against women in academia, it should also be an opportunity to recognise what women can do for science and medicine. Research has shown teams solve problems and function better when they are gender-diverse. Women can bring different perspectives to research, which can lead to alternative and possibly better outcomes.

This International Women’s Day presents an opportunity to provide better ways of supporting women, and to develop enlightened policies that reflect societal patterns and structures, so that more women like Okamoto can pursue their dream of building a successful career that will benefit others. ■ The Lancet