

ropean Molecular Biology Laboratory in Heidelberg (n=2), the Max Planck Society (n=1.5), and the Jülich Research Centre, a member of the Helmholtz Association of German Research Centers (n=1).

In Israel (n=4.5), the Technion Institute of Technology (n=3) in Haifa is an important institution for Nobel Prize research. Other countries where Nobel Prize winning work was done are Australia, Canada, the Netherlands, Russia, and Sweden, and further down the list, with at least one Nobel Prize winner, Belgium, China, Denmark, Finland, Norway, and Switzerland.

PATENT WORK LEADS TO NOBEL PRIZE

Another way of becoming an elite researcher and Nobel Prize winner is to innovate with patents. We identified at least one Nobel Prize winner, the engineer Jack Kilby (Nobel Prize in Physics, 2000) who pursued this route. Kilby developed the integrated circuit at the company Texas Instruments (Bell licensee), and registered a US patent in 1959, leading to the Nobel Prize.

LAUREATES FROM EAST ASIA

In recent years, several laureates have done their research in East Asia. In the past 16 years, twelve Japanese and the only laureate from China, Tu Youyou, made their prize-winning discoveries in their home countries. The University of Tokyo and the University of Nagoya stand out with n=3, as well as the University of Kyoto (n=2.5). The physician Shin-ya Yamanaka conducted research at the University of Kyoto with CREST, a government program at the Japanese Science and Technology Agency. The microbiologist Satoshi Omura did his research at Kitasato University, but sent his later discovery, cultured new strains of soil bacteria, to the Merck Sharp & Dohme research laboratories, a company in Kenilworth, New Jersey, in the United States.

ELITE UNIVERSITIES FOR DOCTORAL TRAINING SUPPORT FUTURE "NOBELISTS"

Not surprisingly, the United States is home to most universities and research institutions at the top of the list of institutions where scientists, who later became Nobel laureates, did their PhD or M.D.: Harvard University (n=14), the University of California, Berkeley (n=8), and the Massachusetts Institute of Technology (n=6) ranking first. In the United Kingdom, the University of Cambridge and the Medical Research Center, Cambridge come in first with n=7.5. A number of elite universities selected and/or trained five future Nobel laureates: University of Chicago, Cornell University, Stanford University, and Yale University in the United States; the University of Oxford in the United Kingdom; and Nagoya University in Japan.

LAUREATES WITHOUT A DOCTORAL DEGREE

Several laureates received the Nobel award without having a doctoral degree. Besides Kilby and Youyou, the Belgian "Nobel" Yves Chauvin finished his education with only an undergraduate degree in chemical engineering. He wrote that, in retrospective, he regretted the fact that most of his life. Nobel physicist Koichi Tanaka finished his university education with only a degree in engineering, before starting to work at Shimadzu Corporation, a company for scientific and industrial instruments in Kyoto.

CONCLUSION

Overall, our results show that Nobel laureates are mostly affiliated with elite institutions. Most of them have an outstanding university education, did their decisive work at famous research institutions, and were affiliated with excellent institutions or universities when they received the Nobel award. The future will show if Nobel Prize winners will be educated and work increasingly at smaller and less-known institutions inside and outside the United States. ■

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Higher Education, Student Health, and Obesity in Developing Countries

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The world is experiencing a rapid rise in obesity rates. The World Health Organization (WHO) reports that global obesity has more than doubled since 1980. In developing countries, obesity rates have tripled over the past 20 years, due to increased consumption of high caloric foods and a sedentary lifestyle. Obesity, excessive weight, and their corresponding ailments are responsible for 5 percent of global mortality.

Fighting this alarmingly rapid rise in obesity is now a policy priority for the WHO. In May 2004, the WHO published the "WHO Global Strategy on Diet, Physical Activity and Health." In an address on February 8, 2017, Dr. Margaret Chan, director-general of the WHO, notes that while hunger remains a global issue, "most of the world got fat"

over the last decade.

This is an issue for everyone, irrespective of education or income level. However, it is particularly salient for institutions of higher education throughout the world, as they are charged with educating and developing the young adults of tomorrow. Further, these institutions possess the resources and facilities to develop programs to foster and promote cultures of health.

In North America, there is a positive correlation between education and income and a decrease in obesity; data indicates that people with more than high school education are less likely to have a problem with excessive weight. The Organization for Economic Co-operation and Development (OECD) reports that among their member states, adults with higher literacy and a higher level of education regard themselves as being in good health 33 percent more than those with lower literacy and educational attainment.

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This is less the case in the developing world, where the younger generation arising from a new and rapidly growing middle class is experiencing a growth in obesity rates. In a 2014 study published in the *International Journal of Environmental Research and Public Health*, covering 15,746 undergraduate students at 22 universities in low-income, middle-income, and emerging economy countries, researchers found that, on average, 22 percent of the sample population was either overweight or obese. Higher education institutions in developing countries provide students with improved economic prospects. They are also responsible for addressing the trend of increased higher education without corresponding drops in obesity.

THE CASE OF EGYPT

According to a 2010 WHO report, 70 percent of Egyptians are overweight or obese, the highest rate in Africa. The highest rates within Egypt are among the educated and wealthy. Thus, Egypt is a suitable developing country to study.

The Egyptian government itself is aware of this rising health epidemic. The ministry of health and population conducted an “Egypt Health Issues Survey” in 2015 in order to understand the extent of health issues among the population. The results are astonishing. For ages 15–59, the rate of excessive weight or obesity among women is 76 percent and among men 60.7 percent. Contrary to Europe and the

United States, in Egypt, higher education does not shield against obesity. For Egyptian men with no education, the rate of obesity or excessive weight is 60.9 percent, compared to 68.2 percent among those that have completed secondary education or higher education. Egyptian women with no education are found to be overweight or obese at a rate of 83.1 percent, but the rate is still a disturbing 77.3 percent for those who completed secondary education or higher education—again, an issue that higher education institutions should address.

Furthermore, as wealth increases in Egypt, rates of excessive weight or obesity also rise. When comparing the lowest wealth quartile to the highest quartile, rates for men move from 51.9 percent to 67.8 percent, respectively, and for women from 70.9 percent to 78.4 percent, respectively. As Egypt is increasing access to higher education, aiming to increase enrollment from 32 percent to 40 percent by 2021–2022, and as the enrollment growth is expected to be absorbed principally by fee-based private universities, higher education institutions, especially private universities, will enroll those most at risk of being overweight or obese: the educated and wealthy.

CURRENT PHYSICAL ACTIVITY INITIATIVES IN EGYPT

Lack of physical activity is one of the main contributing factors to overweight and obesity. Egyptian universities already recognize the importance of physical activity. Cairo University, the country’s flagship institution, includes athletics in its student activity mission. The private American University in Cairo (AUC) incorporates a Western system of athletics and recreation into its approach to education. The availability—and careful use—of suitable facilities is at the core of any strategy to increase opportunities for physical activity among students.

Compared to Western universities, however, access hours for available resources are limited. Universities need to develop plans to increase usage of their facilities. The usage of AUC fitness facilities by undergraduate students is very low, at only 10 percent. If this is the case at AUC, the elite private Egyptian university, one could conclude that the other private and public institutions in Egypt are seeing similar or even lower levels of engagement by students. In contrast, in North America, 75 percent of students use on-campus recreation facilities and programs. If Egyptian universities could increase the number of hours of access and develop specific physical activity and health educational programs, they would increase physical activity among students and address one of the main contributing factors to obesity.

CONCLUSION

Developed countries show positive correlations between

higher education levels and lower levels of excessive weight and obesity. This correlation is not causation. Developing countries may encounter the opposite, so it is important for universities in these countries to make health and wellness central to their institutional mission. Developing countries must intensify their efforts to increase student engagement in physical activity programs, a key plank in dealing with an obesity crisis that can only be halted and reversed through education and participation. Developing countries lag behind in regard to economic performance and education levels; in addition, the overall health of their populations will continue to fall behind if educational institutions do not prioritize the health of their students. ■

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Requiem for a Dream: Academic Freedom under Threat in Democracies

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Academic freedom is both a core value and a governing principle of higher education institutions. It is so ingrained in research and teaching—especially in democratic states—that it has been taken for granted. More recently, there have been a number of retaliatory actions taken by democratic governments toward academics and higher education institutions.

ACADEMIC FREEDOM AND DEMOCRATIC GOVERNMENTS

In Poland, President Andrzej Duda is threatening to strip a renowned historian of a high state decoration because his work uncovered Polish involvement in the Holocaust. More worryingly, the recently elected right-wing government has proposed legislation that would impose a five-year prison sentence on anybody who imputes that Poland is in any way responsible for Nazi or Stalinist crimes. Hungary fast-tracked a legislative amendment to Act CCIV of 2011 on National Higher Education that is officially aimed at regulating the 28 international universities that function in

the country. However, as observers have noted, it specifically targets one particular international higher education institution that has been immune to traditional tools of influence: Central European University or CEU. So much so, that the law has been dubbed “Lex CEU.” CEU played a central role in rebuilding democracy in Central and Eastern Europe and forwarding the ideals of an “open society.”

Governments often treat universities akin to political opposition. Since their inception, universities have fostered critical thinking, debate, and—as a result—dissent against the status quo. Traditionally, democratic governments have perceived universities as important and worthy opponents that play a vital role in the metabolism of any healthy democracy. Nondemocratic governments have perceived them as threats and have tried to steer their activities through a variety of means (i.e., curtailing academic freedom, reducing institutional autonomy, cutting funds, closing universities). However, more recently, governments in places generally deemed democratic have started to perceive universities as threats. The recent legislative change in Hungary represents a particularly worrying example.

Academic freedom is both a core value and a governing principle of higher education institutions.

RECENT DEVELOPMENTS IN HUNGARY

The legislation directly threatens the existence of the university in Hungary. It requires CEU to set up a campus in the state of New York in the United States (where all its programs are registered, but where it does not operate), stops CEU from issuing US degrees to its graduates (even though all its programs are accredited by the Middle States Commission on Higher Education in the United States), imposes work permit vetting by the Hungarian government on CEU faculty from outside the European Union (they are currently exempt from these procedures), and precludes CEU from functioning under its present name.

The Hungarian government argues that the amendment is meant to regulate cross-border higher education programs in order to ensure quality. However, considering that the legislation disproportionately targets CEU—a university that ranks 39th in the category of top universities worldwide founded less than 50 years ago (according to the *Times Higher Education* ranking)—this justification is inapplicable. These are not quality assurance measures, but