

Women's unique strength in scientific research and social development should be fully emphasized

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Abstract

China's experience in fighting COVID-19 pandemic shows that women have played a prominent role: women medical workers have rushed to affected areas, and women scientists have carried out rapid research and achieved remarkable results. However, in terms of the impact of the pandemic, women researchers and girls have been negatively affected: women researchers' publication rate and the number of research projects undertaken have both decreased, and girls are at greater risk of dropping out of school. The paper analyzes how to treat and solve these problems.

Women make medical treatment warmer

In China's fight against COVID-19 pandemic, tens of thousands of medical workers, experts and scientists have been actively engaged in the battle. Among them, the power of women cannot be underestimated. It is reported that 42,600 medical workers have rushed to Wuhan and other cities in Hubei province, where the outbreak began, and 28,000, or about two-thirds, were women¹.

At the same time, women researchers have also been racing against time to contribute to research and development. Academician Li Lanjuan's team successfully isolated the virus strain. Academician Chen Wei's team was granted the patent of COVID-19 vaccine (Sun, 2020). Dr. Guo et al. (2020) analyzed the clinical application status of ribavirin in severe COVID-19 patients. Professor Xu, Wuhan University, found that dihydroorotate dehydrogenase (DHODH) inhibitors could strongly inhibit novel coronavirus replication at the cellular level (Xiong et al., 2020). Yan Jinghua's team from Institute of Microbiology, Chinese Academy of Sciences, isolated two specific human monoclonal antibodies from a patient convalescing from the disease (Shi et al., 2020). These are all remarkable contributions made by women in the context of COVID-19 pandemic, which cannot be adequately described or covered in a few words.

The advantages and difficulties of women's career choice

Zhang (2018) pointed out that women were responsible for taking care of the elderly and the sick in the family in matrilineal society, who were caregivers of "loving mothers". The lady with the lamp, also known as Nightingale, founded nursing and provided a new concept of nursing education, so that the spirit of

dedication and kindness can be passed on from generation to generation. During the war, nursing ranked the most important position among the work that women could undertake (Zhao, 2015). Similarly in the fight against COVID-19 pandemic, women tend to be more attentive, patient and gentle in gender terms, making them better suited to care for patients. Taking the Affiliated Hospital of Shanghai Jiao Tong University as an example, women doctors accounted for 52.2%, and the proportion of nursing staff reached 96.5% (Chen, 2020).

STEM (science, technology, engineering and mathematics) education is often thought of as the discipline foundation for cultivating scientists. The stereotype is that STEM belongs to men's areas of expertise (UNICEF, 2020). The stereotype prevents women from developing and perfecting their skills, sometimes making it difficult for them to come up with their own opinions and solutions with confidence, thus negatively influencing women's STEM learning and applying abilities (ITU, 2019). Although women make up about 45.8% of China's scientific and technological workers, the proportion is gradually decreasing with the increase of professional and technical positions². Studies show that women make up only 28% of the global tech industry (Ababa, 2019).

With the continuous development of information technology, people with high education and IT skills are easier to be favored by the employment market. However, Global Findex database data show, women (37%) in developing countries at the same time the proportion of the use of mobile phones and the Internet were less than men (43%) in 2017³. As marginalized young women transition from the home to the workforce, child-care responsibilities and domestic work make them vulnerable to unequal opportunities,

¹ See: http://k.sina.com.cn/article_5324777856_13d61a98001900qu75.html?from=health&sudaref=www.baidu.com&display=0&retcode=0

² See: http://www.gov.cn/zhengce/2021-07/19/content_5625975.htm

³ See: <https://globalfindex.worldbank.org/>

inadequate payoff and unstable working conditions, limiting their application of STEM skills (UNICEF, 2020). The COVID-19 pandemic has also further exposed gender gaps in digital technologies (IATT, 2021).

The impact of COVID-19 on women researchers

According to UNESCO statistics for 2021, the proportion of women engineering graduates in many OECD countries is below the global average (about 28%). For example, France (26.1%), Australia (23.2%), the United States (20.4%), South Korea (20.1%) and Canada (19.7%). The huge impact of COVID-19 pandemic on women in science and engineering shows that they have less job security and less time for research. One intuitive result is that women (2.7%) were publishing fewer preprints than men (6.4%) and initiating fewer research projects than before the outbreak began (Viglione, 2020).

One study, conducted by the Organization for Women Scientists in Developing Countries (OWSD), involved 1,470 women researchers in 85 countries. Among them, 67% believed COVID-19 prevented them from attending meetings or other important work activities, 52% believed they spent much more time on housework, and 61% believed they spent significantly more time on childcare and family education (OWSD, 2020). Not only do women researchers face the burden of their social roles and the negative impact of COVID-19 pandemic, but girls, especially adolescent girls, are also under the dual pressure of gender inequality and the pandemic, at greater risk of dropping out of school. The hard truth is that girls tend to be less valued by families than boys in some countries (Babb & Pasic, 2020). In the wake of the pandemic and its unprecedented disruption of education, UNESCO estimates that 11 million girls might not be able to return to school⁴. This huge threat resulted from the budget cuts in education, especially in low- and lower-middle-income countries. Undoubtedly, Girls' equal and timely access to education will determine the number and quality women scientists in the future.

Conclusion and recommendations

In the fight against COVID-19 pandemic, women scientists and women medical workers have made efforts and contributions, which profoundly reflects the power of women. To some extent, it shows that women can play a unique role in certain industries and scientific research fields, and women's power is definitely indispensable. Worryingly, women still lack equal

access to higher education and the use of IT, especially in developing and low-income countries.

Policy suggestions are recommended that governments should pay more attention to the equal status of women in education, skills training, as well as in scientific research, and ensure that girls have access to basic education, especially STEM education. Specific measures include improving incentives for women scientists and clearing accordance to consummate selection mechanism for them. Governments can encourage women to participate in science through material rewards and moral propaganda, and even give priority to women when selecting top talent in STEM fields. For example, Ministry of Science and Technology of China (2021) has formulated relevant policies to stimulate the innovation vitality of women scientific and technological talents, including increasing incentives for them and publicizing typical deeds of women scientists.

Education needs to be more inclusive provided by the government. China, for instance, has opened up free MOOC platforms to ensure equal access to STEM education for girls in less developed areas, in response to uneven regional development.

Another way to promote the role of women researchers is to provide them with equal opportunities to participate in decision-making, including on the COVID-19 pandemic and strategic decision-making at all levels of the organizations. It is also worth advocating to encourage the relevant organizations to host salons and conferences for women scientists with the help of non-governmental organizations. For example, during the Ebola crisis, women had fewer opportunities than men to participate in the decision-making process, so their needs could not go unmet at work (UNESCO, 2020). OWSD President Jennifer Thomson (2020) stressed that women scientists brought a different perspective to scientific work and social development, which was becoming more visible and important as they gained their rightful place in their own research field. The United Nations should play a more active role in supporting gender equality and strengthening international exchanges and cooperation.

⁴ See: <https://zh.unesco.org/covid19/educationresponse/girlseducation>

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