

# Global Challenges and Population's health; Report on the International Conference on 19-20 November 2021

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The Karakalpakstan Medical Institute in Nukus, Uzbekistan as host, in close collaboration and partnership with the Medical University of Vienna, Austria, the Shahid Beheshti University of Medical Sciences, Iran, Tehran and local authorities, ministries and universities in November 2021 organized an international conference "Global challenges and population's health", devoted to its 30-years anniversary.

International experts, scientists, medical doctors came together to local communities in Karakalpakstan to share knowledge and experience in solving medical problems, discuss COVID-19 pandemic and other global challenges which has impact to human health.

As it was mentioned by WHO, the situation with COVID pandemic and its consequences made the last 2 years devastating for global health. A previously unknown virus raced around the world, rapidly emerging as one of its top killers, laying bare the inadequacies of health systems. Today, health services in all regions are struggling to both tackle COVID-19, and provide people with vital care. In another blow, the pandemic threatens to set back hard-won global health progress achieved over the past two decades - in fighting infectious diseases, for example, and improving maternal and child health [1].

Unfortunately, the COVID pandemic has added to the already existing global challenges and problems, which are a serious threat to the health of the population and the planet as a whole. As it is well known, last century the planet faced a number of global challenges. Climate is warming, pollution is affecting ecosystems and human health, and human societies now face new risks in terms of sea level changes, new diseases, food security, water scarcity, climate extremes and many others [2].

The conference location in Nukus is very symbolic. As it is well known, the Aral Sea crisis is one of example of manmade environmental disasters of the last century. During his visit to the Aral Sea (Muinak in Uzbekistan in June 2017), the UN Secretary-General António Guterres stated: "Visiting the Aral Sea and seeing what was the fourth largest inland sea in the world almost dead has caused a tremendous shock. This is probably the biggest ecological catastrophe of our time. And it demonstrates that men can destroy the planet" [3].

There are two UN Initiatives implementing in order to solve the Environmental problems and secure populations life in this catastrophe region. A special UN Multi-Partner Human Security Trust Fund for the Aral Sea region in Uzbekistan (MPHSTF) was created in 2018 under the aegis of

the UN, will serve as a unique unified platform for international development cooperation and the mobilization of donor resources to implement integrated measures [4]. The UN General Assembly within its 75th plenary session on May 18 2021 unanimously adopted a resolution declaring the Aral Sea region a zone of ecological innovations and technologies, through which it encouraged research and scientific advisory activities to recover and improve the environment, preserve natural resources and enhance the quality of life in the region [5]. The Republic of Karakalpakstan is the epicenter of the Aral Sea crisis. It was interesting for the participants of the conference to learn the experience of the medical institute in Nukus, its activities and achievements, the success of the team working in such difficult conditions created by the consequences of the Aral Sea catastrophe, as well as in the context of the layering of the pandemic. 30 years ago, in the Republic of Karakalpakstan, in order to train qualified medical doctors and improve public health protection in the epicenter of the Aral environmental disaster, the Nukus branch of the Tashkent Pediatric Medical Institute was established. During this period, there was a dynamic and qualitative development of the Institute. The institute team managed to achieve good results in the development of areas of medical education, conducting scientific research on assessing the state of public health, assessing risk factors for health, training medical doctors, establishing international cooperation, etc.

Thanks to the implementation of the reform program in the education and healthcare system in the country, the Nukus branch of the Tashkent Pediatric Medical Institute has turned into a modern university, the largest center for training qualified medical personnel in the Aral Sea region, and in 2020 it was transformed into the Karakalpakstan Medical Institute (KMI). Currently, KMI is one of the most successful higher educational institutions in Uzbekistan.

Now more than 2,500 boys and girls from all regions of Uzbekistan, as well as from neighboring countries (Turkmenistan and Kazakhstan) receive education here. Education consists 8 directions of bachelors, 5 direction of master's, and 32 directions of clinical residency. There are several joint master and residency Programs with Russian universities. The institute has a dissertation council in 3 specialties.

For many years, the institute has been conducting governmental scientific research programs on topical regional issues of children's and adolescents' health, reproductive health of the population of the Aral Sea region. The institute's staff are leading experts in the development and implementation of scientific research in the field of maternal and child health, reproductive health, pediatrics, regional pathologies, the impact of environmental factors on health, etc. [6-9].

KMI participates in a number of international educational and research projects, within which partnerships have been established with leading universities of the CIS countries and far abroad, and is a member of the Association of Medical Universities in Europe (AMSE). During its activity, more than 4,000 medical personnel have been trained, who work in more than 15 countries of the world.

In 2021, a modern university clinic was opened at the institute, the main goal of which is to provide highly qualified medical care to children in the Aral Sea region affected by environmental factors (congenital developmental anomalies). One of the priorities of the clinic is the introduction of advanced innovative technologies into medical practice, the integration of the educational, scientific and innovative process into clinical medicine. The staff is working on further improvement of the institute's activities and its integration into the international network of universities.

Conference participants shared their knowledge and experience on following themes – COVID-19 pandemic, Children's health, Oncological problems, Tuberculosis, Climate change, Sustainable Development, Environmental Health, etc. The conference started with the presentation «Global challenges and Sustainable Development» by Dr. Kazbekov J.S., Deputy Chair of the State Committee on Ecology and Environmental Protection of Uzbekistan. Within this presentation he introduced the National programs and activities going on to reach goals of Sustainable

Development. Prof. Hanns Moshhammer, Vienna Medical University, Austria, made a presentation on «Lessons from the pandemic», highlighting the difficulties of providing expert advice in the face of uncertainty and shifting knowledge base. The presentation of our partner from Iran – Prof.

Alireza Masavi Jarrahi, Shahid Beheshti University of Medical science, Iran, on “Oncological diseases as global challenges” touched on issues of epidemiology and causes for spatial and temporal differences, early diagnostic and effective treatment of oncological pathologies. The presentation of Dr. Saeed Yari, Tehran University, Iran, on “Climate change and its impact to Health” introduced the one of main global environmental problem and its impact to population’s health. The next speaker, Prof. Prof. Ashirova V., Uzbekistan, introduced the topic on “Tuberculosis – prevention and treatment, new guides”. She presented data on treatment of tuberculosis in Uzbekistan following new WHO guidelines and achieved results. This experience is very important because patients with TB were the most vulnerable group for COVID-19 and needed additional attention. The Plenary session was finished by the presentation of Prof. Oral Ataniyazova on “COVID pandemic and its impact on Reproductive Health”. The overview has shown that women’s and men’s reproductive systems are very sensitive to SARS-Cov-2, as well youth and pregnant women. About 45% of pregnant women with COVID-19 have complications during pregnancy. Pregnant women with COVID-19 are in high risk to preterm birth and high maternal and fetus mortality. About 39% of newborns from women with COVID-19 have clinical symptoms of pneumonia, distress syndrome, etc. (10,11). Different disorders of reproductive health during COVID-19 pandemic were observed, e.g. disorders of the menstrual cycle in 49% of women, libido disorders, infertility, etc. [12]. Systematic research has shown that the virus was identified in many human organs - larynx, trachea, lungs, blood, heart, veins, intestines, male genitals, brain and kidneys. In some organs SARS-Cov-2 could persist for quite a long period [13]. In conclusion, reproductive health, pregnant women and newborn are at the highest risk for coronavirus SARS-Cov-2. It is important to continue comprehensive investigations on long term impact of COVID-19 on reproductive health.

The conference was closed by approving Resolution of the conference on developing joint activities on Environmental Health, joint educational and training programs, developing mobility of staff and students, etc.

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