

AL ARAB NEWSPAPER'S INTERVIEW WITH DR NAHLA

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Firstly, we would like to get to know Qatar Biobank.

Qatar Biobank is part of Qatar Foundation - Research, Development and innovation division, a long-term health initiative that gathers biological samples and information on the health and lifestyle of Qataris and residents of Qatar for more than 15 years and assist researchers, scientists and doctors in conducting health-related research. With this, we can help identify the latest discoveries in medical research and early diagnosis for various diseases in Qatar, which are reflected in the health of the citizens and residents of future generations.

Why is it important to collect these samples?

It is important to gather these samples in an organized scientific way to make sure that the conducted research is carried out in a correct scientific manner so if it is repeated again, the same results will be conclusive. This is very important in the long term agenda according to the state's health vision. In order to achieve extraordinary improvement in diagnostic and prognostic intelligence, it is required to deliver personalized health care for the benefits of the people in Qatar.

The role of Qatar Biobank comes within the improvement of health services as a strategy for the State of Qatar, so that in the future we will be able to avoid prescribing similar drug doses for all people. It can have the right effect on one group of people, but not the same effect on another group, as it can cause negative effects on a third group. Hence, our role at Qatar Biobank comes through participating in the study of genetics and accompanying environmental factors and life systems.

How will the population participate in research?

After signing the consent to participate, biological samples are gathered from the participants, as well as health information, information about their lifestyle, exercise and etc., in a detailed questionnaire, so that these samples and information are used to enable research towards the discovery and development of new healthcare interventions.

How many participants have been recruited in Qatar Biobank so far?

More than 26,000 participants, including more than 20,000 Qataris, and 6,000 Arab and non- Arab residents who have been in Qatar for at least 15 years.

What is the impact of gathering such samples for the future of the medical sector?

The participants undergo a series of tests and give blood samples for analysis by performing 66 tests in the laboratories of HMC, which are internationally accredited. Based on the results we study on the function of the kidney and liver, their blood analysis and their hormones to obtain comprehensive information about the participants' health that will be provided and explained in the case they have any health problems. Also, if required, we refer them to HMC or the health center they are registered in.

Can this be an early detection for several diseases?

Yes, it is an early diagnosis of many diseases, as 2% of the participants discovered that they had diabetes through Qatar Biobank tests, as well as 11% of them suffering unstable blood sugar levels. Also 4% were not aware that their blood pressure was high and other cases that Qatar Biobank discovered and referred to the concerned clinics and health centers.

How can a common lifestyle have a role in the spread of certain diseases in society?

Every disease has two main factors; either it is caused by the genes or the lifestyle. Lifestyle is affected by exercise, exposure to the sun, diet, and other important factors. Also the influence of the environment, along with genes, may cause disease. Thus, if the lifestyle is likely to cause disease but the person has genes that prevent it, the person may not develop the disease, and vice versa.

Tell us about your cooperation with Qatar Genome

Among the 20,000 Qatari participants, 17,000 participated in Qatar Genome Program, which is responsible for generating the whole genome sequencing and other omics data and integrating them with the comprehensive phenotypic data collected by the Qatar Biobank. Since we have medical and lifestyle information, researchers have the required data to conduct any required comparisons. For example, if a person has diabetes or is more likely to develop the disease, by examining the cumulative blood sugar levels we can find the effect of the person's diet and lifestyle to cause diabetes.

We have also found that a large percentage of people with cancer, especially breast cancer, have genetic causes, so we seek to find out whether the genetic causes are more than others, or if there are other effects to be considered as well.

Also one of the projects we're currently working on is the Qchip, which will be used in identifying patients and mutation carriers. As we have conducted 17,000 genetic analyses in cooperation with Qatar Genome, it is already known that different genes cause different diseases.

So instead of examining all the genes of all members of society, we took these different gene samples and examined their presence in people to facilitate the diagnostic process, especially since there are diseases that have a certain connection to genes. This technique only takes 5 days, but with genome testing it takes longer and costs more.

You have a large number of samples .. What is the most prominent research that uses these samples, and what are the results?

In Qatar Biobank, we have an office which receives requests for research, and so far we have received more than 230 research requests, of which more than 120 have already received samples and information for their use. So far 30 research papers on the samples collected in Qatar Biobank have been published in highly influential scientific and medical journals. We have also provided data and samples for more than 81 research studies by students at Qatar University and Hamad Bin Khalifa University, including 5 PhD students, 7 Master students, and 41 Bachelor's students. These students have published nearly 80 posters in international conferences, and 15 posters in scientific journals.

After providing the samples and information to the researchers, we follow up with them to track their progress and most of the current research revolves around the effect of diabetes, methods of detection and prediction of the factors that cause injury and problems at a remote level.

Tell us about aspects of your cooperation with health institutions in the country

We collaborate with HBKU's Qatar Biomedical Research Institute, part of Qatar Foundation, as well as Qatar Computing Research Institute. We contributed with them on a research paper about the predictions of the impact of diabetes on patients, like the effect on the eyes, kidneys and more as some people develop certain complications while others do not. The institute carries out a computerization process through which risks

that may occur to a diabetic patient in the future are expected to be able to prevent it before it happens.

Is there a cooperation between Qatar Biobank, the Ministry of Public Health, HMC and PHCC?

Of course, we have a strong cooperative relationship with the Ministry of Public Health. We share statistical information about the participants, hence we determine for the Ministry of Public Health the percentage of people with blood pressure, diabetes and other diseases among the samples gathered by Qatar Biobank as well as participating in the national survey program.

Are there projects recently conducted with the MOPH?

The latest project carried out in cooperation with the Ministry of Public Health is a research project to collect samples from Coronavirus "Covid-19" patients in Qatar, where the MOPH and HMC chose Qatar Biobank since the center has the ability to collect samples and information in an organized manner. Then we follow up with them every month to monitor the impact of the virus on their health and immunity.

We provide this information for researchers to work on data related to the complications and impact of Covid-19 on the human's body and health, determine the reasons behind the variation of this impact from one patient to another and other information related to this virus.

Qatar cares about the health of the whole society, including the health of women and children. Are there studies that you are working on at the moment similar to the Qatar Birth Study Group?

Qatar Biobank is currently working on 3 basic projects with the same goal, which is to achieve extraordinary improvement at raising the efficiency in diagnostic medicine methods and future expectations. With this in consideration, we can provide personalized health care services that focus on the individual characteristics of each patient, for the benefit of the Qatari community and this region and the world. These projects are: Qatar Population Cohort Study Group - Qatar Birth Study Group - Covid-19 Research.

What are your future plans?

Our future plans are based on expanding our role within the country's precision medicine strategy, and for us, Qatar Biobank, to have a fundamental role in providing services, analyzing samples and achieving new scientific discoveries in the field of precision and personalized medicine.

Sources:

Al Arab Newspaper's interview with Dr Nahla | Qatar Biobank. (retrieved on July 1st, 2021).

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