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Dr. Kholoud, to begin, we would like to learn more about your academic and professional journey in pharmacy and precision medicine, as well as the key milestones that have shaped your scientific and research expertise.

My academic journey began with a strong interest in precision medicine and translational research aimed at improving treatment outcomes. After studying pharmacy and specializing in clinical pharmacy, I developed a deeper interest in why patients respond differently to the same medication, which led me to pharmacogenomics and precision medicine.

Throughout my career in clinical practice, academia, and research, I have bridged the gap between scientific discovery and healthcare application. A key milestone was becoming one of the early researchers in Qatar focusing on pharmacogenomics and translating it into clinical practice.

I have also received research grants in precision medicine and pharmaco-multi-omics, and contributed to national efforts to integrate genomics into healthcare.

As one of the early and first Qatari specialists in pharmacogenomics, what motivated you to pursue specialization in clinical pharmacy and genomic medicine?

My motivation stemmed from a simple but important clinical observation: patients receiving the same medication often experience very different outcomes. Some achieve excellent therapeutic benefits, while others experience treatment failure or serious adverse drug reactions. Traditional prescribing approaches do not always account for these differences. Pharmacogenomics offered a powerful scientific framework to understand how genetic variations influence drug response and provided an opportunity to move beyond the “one-size-fits-all” approach to healthcare.

As the field evolved, I became increasingly interested integrating multiple layers of biological information, including genomics, metabolomics, microbiomics, and epigenetics, to better understand treatment response. This led me to focus on pharmacomultiomics, which I believe represents the next generation of precision medicine.

How do you describe your role in the Health Hackathon hosted by Qatar University, and what impact did this experience have on your future directions?

I have always been a strong believer in advancement, particularly in healthcare, where many of the challenges we face require creative, interdisciplinary, and technology-driven solutions. One of my aspirations has been to position Qatar University as a hub for healthcare transformation by bringing together healthcare professionals, researchers, students, engineers, entrepreneurs, and industry experts to collaboratively address real-world healthcare challenges.

With this vision in mind, I had the privilege of leading and chairing one of the first health-focused hackathons in Qatar. The hackathon was designed to foster a culture of innovation, entrepreneurship, and multidisciplinary collaboration, providing participants with an opportunity to transform ideas into practical healthcare solutions. My role involved developing the vision of the event, building strategic partnerships, engaging mentors and experts, and creating an environment that encouraged creativity and problem-solving.

This experience further strengthened my belief that scientific research should be translated into practical solutions that improve patient care and enhance healthcare systems.

How do scientific hackathons contribute to enhancing research, innovation, and the development of the healthcare sector in the State of Qatar?

For me, the real value of a hackathon is that it pushes students to move from theory to action. In a short time, they learn how to define a problem, work with people from different backgrounds, accept feedback, and improve their ideas. This is exactly the kind of mindset we need to strengthen research and innovation in Qatar’s healthcare sector. These experiences also help foster a culture of innovation and encourage the development of new healthcare solutions that address real-world needs.