

Profile

Lihadh Al-Gazali: a leading clinical geneticist in the Middle East

In 1976, one of the passengers on a flight from Baghdad to London was a terrified young doctor who, with her husband and child, was fleeing Iraq. 30 years later, Lihadh Al-Gazali is a leading geneticist in the Middle East, based in the United Arab Emirates (UAE). She is one of the few qualified clinical geneticists in her region, and one of only a handful of women at the UAE University's Faculty of Medicine and Health Sciences, in Al-Ain.

Born and brought up in Baghdad, Iraq, Al-Gazali wanted to leave to further her medical education. Once in London, she was required to prove her medical competence by sitting a set of examinations and restarting her paediatric training at a lower level than she had achieved in Baghdad. Her interest in genetics had already been piqued before she began an MSc in genetics at Edinburgh University—working in Iraq, she often saw children with genetic abnormalities that none of her colleagues was able to diagnose. Al-Gazali joined Bob Mueller's clinical genetics department at Leeds University in 1986. At the time, Mueller was studying genetic disorders in Bradford's Pakistani population, among whom marriage between close relatives was fairly common. With such a small gene pool to draw from, the children of such consanguineous couplings have a higher than normal frequency of recessive diseases. It was during this period that Al-Gazali's interest in such diseases was firmly established.

Al-Gazali's move back to the Middle East in 1990 was only intended to be temporary—mainly to familiarise her three young children with Arabic culture. 16 years later, however, she is still there. She joined the UAE University in 1990. At the time, "no-one really knew what a clinical geneticist was", she says. Al-Gazali's first move was to raise awareness of her specialty. She established genetics clinics and a laboratory, and began diagnosing genetic disorders, offering counselling, and giving lectures and workshops.

Now a professor in clinical genetics and paediatrics at the university, Al-Gazali has pioneered research in genetic disorders that are prevalent in the UAE and has built collaborations with international centres worldwide. Since Arab countries have a high frequency of certain genetic disorders that are rare in the west, and many people from these countries have large consanguineous families, the region is an ideal place to study the dynamics of these disorders, and so attracts frequent international collaborations.

Scientific collaborations between countries in the Middle East, however, are less common. One initiative that is striving to change the insular nature of Arab genetic research is the Centre for Arab Genomic Studies. Al-Gazali is an executive committee member of this organisation, which was set up in Dubai, in 2003, and aims to create the first comprehensive database of genetic diseases in the

Arab world. Cooperation between Arab countries will be key to the success of the database.

Despite this positive development, much of Al-Gazali's research takes place in a fairly isolated environment. But where many would have been driven out by such seclusion, Al-Gazali thrives, fuelled by "the excitement of gathering clues to solve genetic mysteries". She believes she was born with the characteristics of "problem-solving and logical deduction" that are integral to working in this specialty.

Such problem-solving is essential, since Al-Gazali encounters many genetic disorders that are scarcely seen in western populations or that are found only in Arab populations and have not been previously described in the medical literature. She has identified and described several disorders that are unique to the UAE population. In 1994, her work uncovered a new syndrome that has since been named after her: Al-Gazali syndrome is characterised by eye and skeletal abnormalities and a short life expectancy.

Al-Gazali needs to be resourceful in her work, since raising an awareness of genetic disorders can be challenging. In some communities, marriage between close relatives is an accepted and longstanding cultural practice. Explaining notions of genetic probability can, therefore, be difficult, she says. Since abortion is illegal in the Middle East, the procedure is not an option for potential parents who have been told that their child has an untreatable genetic disorder. Al-Gazali says that one way to tackle the high incidence of genetic disorders in the region is pre-implantation genetic diagnosis, although this technique can be costly and is not always successful. But she believes that education is an even more important approach. "Education is top of the list—people need to understand what genetics is, and what effect these diseases have on their community." Al-Gazali envisions the main forum for this education to be local health workers and counsellors from the region who can talk to people directly about this issue.

Despite working in science and being based in one of the world's more conservative societies, Al-Gazali denies that she has had to work harder to get to where she is than her female counterparts in the west. For working women worldwide, she says, the dilemma is the same "how to raise children and build a career at the same time". Al-Gazali's professional success is, however, tinged with one personal regret—that 30 years on, she has not yet been able to return to Iraq. "It would be a dream for me to see Iraq at some point in my lifetime, but I think it will take a long time. It is still a dangerous place".

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For Centre for Arab
Genomic Studies see
[http://www.cags.org.ae/
index.html](http://www.cags.org.ae/index.html)