A nationwide cross-sectional study in Saudi Arabia for the assessment of understanding and practices of clinicians towards personalized genetic testing

Data Collection Form

1. Background

1. I provide direct patient care:
   - Yes
   - No

(If yes, then continue; if no, thank-you for your time, the survey is only for practicing physicians)

2. My medical specialty is:
   - General Medicine
   - Family Medicine
   - Emergency Medicine
   - Critical Care
   - Cardiology
   - Pulmonology
   - Gastroenterology
   - Endocrinology
   - Hematology
   - Oncology
   - Immunology
   - Nephrology
   - Rheumatology
   - Dermatology
   - Neurology
   - Ophthalmology
   - Pediatrics
   - Psychiatry
   - Surgery
   - Urology
   - Radiology
   - Anesthesia
   - Obstetrics & Gynecology
   - Infectious Disease
   - Medical Genetics
   - Other, please specify _____

3. My current position / professional title is:
   - Consultant

Associate Consultant
Assistant Consultant
Staff Physician / Registrar
Resident
Fellow
Other, please specify _____

4. My age is:
   Under 35
   36 to 45
   46 to 55
   56 to 65
   Over 65

5. I am: Male □ Female □

6. I received my undergraduate medical degree since:
   Less than 5 years
   5-10 years
   11-20 years
   More than 20 years

7. I completed my **most recent** postgraduate medical training (i.e., residency / internship) since:
   Less than 5 years
   5-10 years
   11-20 years
   More than 20 years

8. I practice in the following work settings:
   Primary Healthcare Clinic
   Private Clinic
   Private Healthcare Center (Poly Clinic)
   Secondary Governmental Hospital
   Tertiary Governmental / Semi Governmental Hospital / Medical City
   Private Hospital
   University Hospital

8.1. If you selected 'Other' or your work setting is not listed above, please mention it here: ____

9. I predominantly practice in the following city: _____-_____

10. I have a university / academic appointment: Yes □ No □

11. Please estimate the number of patient visits you have *in a typical week* ***(excluding*** **while you are on call)** _____ (insert #)

12. Have you participated (as a study team member) in medical research related to genetic testing before? Yes □ No □

2. Training in Personalized Genetic Testing

13. Please select 'Yes' or 'No' for the following questions.

	Yes	No
I received undergraduate medical education in personalized genetic testing		
I received post-graduate medical education in personalized genetic testing		
I attend informal university lectures and/or self-study		
I would like to receive continuing professional education in personalized genetic testing		

3. Practice Experience with Genetic Testing

14. If I believe a personalized genetic test is appropriate for my patient, I am the person responsible for ordering the test: Yes □ No □

(If yes, go to question 15, if no, go to question 18)

15. The last time I ordered a genetic test for a patient was:
    - In the past month
    - In the past 2-3 months
    - In the past 4-6 months
    - More than six months ago

16. I have ordered the following genetic tests for the following indications (select all that apply):
    - BRCA1 / BRCA2
    - CYP2C9
    - Whole Exome Sequencing
    - Whole Genome Sequencing
    - CGH Microarray
    - Carrier Gene Testing
    - Fragile X Testing
    - Single Gene Sequencing
    - Gene Panel Testing
    - Karyotyping Test
    - Other:

17. Before ordering a genetic test, I consult with:

	Always	Sometimes	Never
Geneticist			
Specialist			
Other			

17.1. If you selected 'Specialist' above, please specify the professional title here: _____

17.2. If you selected 'Other' above, please specify the professional title here: _____

(Please skip to question 18)

18. Who is responsible for ordering genetic tests for your patients (select all that apply)?
    Geneticist
    Specialist
    Other

18.1. If you selected 'Specialist' above, please specify the professional title here: _____

18.2. If you selected 'Others' above, please specify the professional title here: _____

19. Please indicate your level of agreement/disagreement with each of the following statements regarding personalized medical testing (please mark the appropriate box):

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Do not Know
I am sufficiently informed about genetic testing						
I am comfortable talking with my patients about personalized genetic tests						
I am able to interpret the results of genetic tests						
There is insufficient evidence to compel me to order / request personalized genetic testing for my patients						

Knowing a patient's genetic profile can influence treatment decision-making						
Genetic profiles can improve patient outcomes						
Patients are asking me about personalized genetic tests						
Personalized genetic tests I have ordered / requested have influenced patient treatment plans						
Personalized genetic tests I have ordered / requested have identified genetic predisposition or high risk for disorders						
Personalized genetic tests I have ordered / requested for my patients have increased therapeutic benefit						
Patients are fearful of being discriminated against because of genetic test results						
Medical Informatics is key to delivering personalized genetic tests						
Routine adoption of personalized genetic tests requires too many changes in clinical practice						
Genetic tests that I believe would be useful in my practice are not readily available to me						

20. I believe the main barriers preventing physicians from ordering / requesting personalized medical tests are (please check all that apply):

    Lack of evidence-based clinical information to support a test's benefit given the patient's diagnosis

    Too much paperwork/bureaucracy to order genetic tests

    Results take too long for a treatment decision

    Cost of tests is prohibitive

Lack of reimbursement for tests

Lack of clinical practice guidelines on personalized genetic tests

Approval process for tests takes too long

Test results will not affect treatment decisions

Lack of resources/time to educate patients regarding genetic testing

Increase in patient anxiety/fear regarding test results

Insufficient regulatory framework concerning use of genetic test result data (e.g., privacy legislation)

Limited provider knowledge, attitudes and awareness of the benefits of personalized genetic tests

Public insurance coverage for personalized genetic tests

Other (please specify) _____

21. If I wanted to obtain more information on personalized medical testing, my preferred sources for this information would be (please check all that apply):

Genetic labs

Health portals

Internet search tools

Peer-reviewed literature

Colleagues

Other, please specify _____

22. Name of Hospital / Clinic / Medical City (Optional)

_____

Thank you very much for your time and participation.