

## **Knowledge, Attitude and Preferences Towards Genetic Testing for Personalized Medicine Among Students and Adults in Klang Valley - A Survey**

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### **Structured Abstract**

**Background:** Personalized medicine, driven by advancements in genetic testing, represents a transformative approach to healthcare by tailoring diagnosis, treatment, and prevention strategies to an individual's genetic, environmental, and clinical characteristics. This precision-based method ensures that the right patients receive the right treatments at the right time, enhancing effectiveness, reducing toxicity, and improving affordability. However, to fully realize its potential, there is a need to address gaps in patients' knowledge, attitudes, and preferences toward this paradigm.

**Methods:** A convenient sampling method was used to conduct the survey. A total of 385 respondents were obtained and their answers for the survey were collected. The survey involved four sections, demographic profile and knowledge, attitude and preferences in utilizing genetic testing for personalized medicine. Then, the reliability of the developed questions was determined, and several analyses were performed which are Pearson correlation test, one-way analysis of variance (ANOVA) test and Chi-test.

**Results:** The survey resulted in respondents that showed a significant positive correlation ( $r = 0.02$ ) for knowledge of genetic testing with the age group, particularly those who aged between 22 to 36 years old, though education level ( $r = 0.047$ ) had minimal impact. Attitudes showed no significant gender-based concerns about ethics in personalized medicine, while the respondents aged from 18 to 21 years old and from 22 to 25 years old were more aware of the testing services. Preferences linked ethnicity, specifically Malay, to willingness to pay and highlighted financial considerations for lower-income groups.

**Conclusion:** The study highlights the transformative potential of genetic testing in advancing personalized medicine in Klang Valley, with participants showing positive attitudes but varying levels of knowledge influenced by demographic factors. While there is strong demand for genetic testing due to its perceived benefits, outreach is essential to promote its effective integration into healthcare.

**Keywords:** Genetic screening, individualized treatment, awareness, perspective, choices

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