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Foreword

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A study focusing on the genomics of behavioral and mental disorders began following the annual meeting of the European Society of Human Genetics (ESHG) in December 2008. The purpose of the study was to examine the clinical utility of genetic testing in psychiatry, the advantages and disadvantages of using genetic tests and to establish regulations and guidelines for the use of such tests. The study was initiated by the Professional and Public Policy Committee (PPPC) (http://www.eshg.org), which organizes draft texts and proposals for the application of genetics on behalf of ESHG. The first draft text was discussed at the Amsterdam meeting (PPPC ESHG Workshop 10-11 December 2008), which was attended by PPPC members. This text will be discussed on-line in the near future.

Tests used in the diagnosis and treatment of mental disorders have recently come onto the market for use by consumers, rendering a discussion necessary. No doubt, the use of genomics is rapidly expanding in the study of human behavior. Developments in genomics radically influence the practice of psychiatry. Some modifications to diagnostic criteria of schizophrenia on the findings of genomic research are planned with the publication of DSM-V in 2012. The Consortium on the Genetics of Schizophrenia suggest that endophenotypes, the hereditary characteristics that are related to schizophrenia within a population and often appear in the patients' families, but do not change in response to treatment, should be added to DSM-V for the diagnosis of schizophrenia, claiming that these endophenotypes reflect the genetic etiology of schizophrenia better than clinical diagnosis. Additionally, the assertion that environmental factors (place of residence, migration, drug use, season of birth, and trauma) should be integrated to diagnostic systems within the framework of the genetic model of schizophrenia continues to find support.

On the other hand, from a research or clinical perspective, research findings that demonstrate the benefits of genetic testing to the diagnosis, prevention, and treatment of psychiatric disorders are quite inadequate. Even though genetic risk factors are identified, as gene-gene and gene-environment interactions are complicated, it is not entirely possible to precisely determine the risk of disease occurrence. In other words, a genetic test to help clinicians and patients, that is ready to be introduced into the market, with sufficient data do not as yet exist; however, even though these problems will be overcome in the future, not much is known about how mental health professionals, patients, and society at large will respond to the use of tests that can determine the risk of developing a mental disorder. Whereas, some people who approach this matter from a financial stand point obviously see a commercially valuable market to exploit.

Pharmacogenetic tests that determine the genomics of behavior have recently been evaluated. The Evaluation of Genomic Applications in Practice and Prevention (EGAPP) study group in the USA prepared a report about CYP450 enzyme polymorphism testing in patients with non-psychotic depression that were about to begin taking selective serotonin reuptake inhibitors. This report stated that more studies are needed before CYP450 enzyme polymorphism testing could be used in clinical application, and that there was insufficient evidence of a relationship between the test and clinical outcome. Among the reported disadvantages of the test, which is currently used routinely at some institutions, is its increased cost in the absence of improvement in patient care.

On-line tests for alcohol dependence, bipolar disorder, and cognitive/behavior subjects, such as intelligence assessment, are currently available. Test advertisements commercially oriented directly towards the consumer have created a new aspect with respect to their effects on people taking them and research based on these tests. An individual that takes a genetic test needs to supply some type of bodily secretion, such as saliva, and DNA obtained from this secretion is conserved for use in future research to be conducted by the company offering the genetic test. In this way, consumers pay (indirectly) to become part of a research sample. Some companies encourage their customers to share their DNA analysis results with others. So, participants share data on their risk of becoming ill with others. This new use of genetic testing is referred to as recreational genomics. With this new use, the decision to apply genetic tests is now made outside the confident and protective environment of the patient-doctor relationship. People become the director of the information about their own health, and they constantly receive information about their own data through new research.

It remains unknown to what extent knowing the risk of becoming mentally ill would influence a person's stress level. A case in point is the Risk Evaluation and Education for Alzheimer's Disease (REVEAL) study. Many people wanted to participate in this study even though they knew that there was no treatment for Alzheimer disease and that the predictive power of the apolipoprotein E test was low. Therefore we can say that some individuals may want to receive information about their risk of having an incurable illness and prepare for the future, although this information is not 100% accurate. This highlights that restricting the use of genetic tests for incurable illnesses in order to protect people from psychological damage is not warranted. It is difficult to differentiate between beneficial and harmful information and, therefore, it is difficult to advise an individual to take a test or not take a test. The difficulty lies in keeping up with the fast improvements in this area while counter-balancing those improvements with great care.

Are we prepared for the improvements brought about by the information age and for the ethical issues associated with these improvements? The genetic information that consumers receive on-line might be presented to us and we may be asked for our opinion any time. Are we well-equipped to comment on this kind of information? It is crucial that genetic testing be discussed among Turkish mental health professionals in a similar manner as it has been in Europe under the auspices of the European Society of Human Genetics (ESHG).