

GENETIC TESTING IMPLICATIONS FOR INSURANCE MARKET

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Introduction. Today genetic testing technologies is a new and advanced method for risk assessment in insurance that has big experience applying in, for example, in the United States, Canada, Australia, Germany, Netherlands, Norway etc. Thus, it is important to study the benefits for insurance market and health care system, and also through the general, health status and mortality factors influencing the insurance market:

Materials and methods. The critical literature review of genetic testing and insurance was conducted through the analyzing about 100 articles and research papers on PubMed, Google Scholar, ResearchGate, ScienceDirect and other internet-based resources with various permutations of the following keywords: “insurance”, “genetic testing”, “life insurance”, “health insurance”, “human genetics”, “information asymmetry” and “genetic test”.

Research results. Applying genetic testing for underwriting in insurance can be a significant step for improving both the health care system and risk assessment in life and health insurance. The research results of its topic were explored by Knoppers & Joly [1]. The other discussions were related to the genetic discrimination in insurance [2]; cancer treatment and diagnosing [3]; personal and health insurance [4].

The history of genetic implication for insurance market is still not very long. Nowadays we exactly know that in the early 1970s some insurers in the U.S. denied of insurance protection or increased insurance rates (premiums) for African Americans who

had a gene for sickle cell anemia [5]. The expansion of applying genetics in insurance became possible after realized of the international Human Genome Project (NHGRI, 2003). In addition, using the genetic testing in insurance also includes a lot of challenges, for example, genetic discrimination [6] and information asymmetry [7].

The main benefits of applying genetic testing technologies in insurance include the opportunities for defining and predicting genetic diseases, because the different genetic testing technologies and genetic tests show very important information for insurance and risk assessment and it creates a lot of benefits for disease risk predictions and it also can have a very big impact for improving health care system [8].

The results of reviewing of the factors influencing the insurance (life and health) markets shows that there are a lot of different of its. For example, *firstly*, economic factors: management expenditure, interest rate, size, leverage, Real GDP [9]; inflation [10]; unemployment rate, wages and interest rate [11]; *secondly*, demographic factors: age structure [12]; and, *thirdly*, health status and mortality factors [13].

Conclusion. The research results of this paper provided the description of main advantages and disadvantages for life and health insurance markets based on the foreign experience where this technology has already been applied. The findings show that genetic testing technologies is a new underwriting method at the insurance market, but has a lot of benefits both for insurance market and for health care system as a method disease risk prediction. In addition, the main problems (issues) are related to the genetic discrimination of insureds (policyholders) and adverse selection at the insurance market.

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