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Texas physicians' perceptions of genomic medicine as an innovation.

Clin Genet 2004;65:368–377

DOI: 10.1159/000086762

Physicians' Perception of Genomic Medicine

Screening, counseling and referring are activities that make primary health care providers (PCPs) important professionals for incorporating genomic medicine (GM) into primary care. Nevertheless, only few studies have examined PCPs' beliefs regarding genetics and the incorporation of GM into practice. Given this dearth of empirical data, Suther and Goodson assessed whether and to what extent PCPs' perceptions of genetic medicine as an innovation influence their likelihood of adopting this innovation into primary care. A random sample of 400 Texas PCPs participated in the study by completing the 35 questions of the mailed surveys measuring the perceptions, i.e. beliefs and values, of the five characteristics of GM as an innovation. Responses consisted of 5-point Likert scales.

Starting from the diffusion of innovations theory, the authors distinguish five characteristics of GM as an innovation: its relative advantage, its compatibility with existing values, practices or needs, the ability to experiment with the innovation, and the observability of others incorporating the innovation. The likelihood of adopting GM was operationalized by ordering a carrier test for an autosomal recessive disorder, ordering a preimplantation diagnosis on an embryo, ordering a predictive test for a patient, providing pre-conceptional counseling and referring a patient for genetic consultation.

Among the five characteristics examined, the physicians' perception of its compatibility with current practice was the strongest predictor of likelihood to adopt GM tasks, followed by perceptions of the complexity of GM. For example, 73.8% of the respondents strongly agreed that offering predictive testing for diseases with no available treatment was consistent with both their professional and personal beliefs. The relative advantage and observability of GM were also significant predictors of likelihood of adoption. Texas PCPs believe that one of the best advantages of GM is supplementing a family history (91% of agreement), and taking a more detailed history is perceived as being easy to incorporate into existing practices. This contrasts with other studies which found that taking a detailed family history can be a barrier to incorporating GM into practice.

Despite the advantages and consistency of GM with professional practice, the complex nature of GM tasks seems to reduce their implementation. More than half (54.3%) of the PCPs believed that staying updated on genomic-related knowledge is (extremely) difficult. Moreover, tasks such as ordering genetic testing and providing genetic counseling do not fit easily into their current practice. In line with other studies, lack of time and knowledge about genetic counseling seem important barriers for the provision of genetic services in primary care.

Comments

With the important limitation of self-selection bias as a result of more interested and knowledgeable responders than non-responders, the findings of the present study indicate that Texas PCPs are most willing to adopt GM into their practice and strongly believe that GM provides important advantages above traditional forms of medical practice. However, very few physicians were already providing specific genetic services to their clients, such as ordering carrier testing (3%) or referring clients for a genetic consultation (2.8%), and none of them were ordering preimplantation diagnosis to check for genetic diseases in embryos. In this light, it could be questioned to what extent the responses were biased by socially desirable answers of the respondents. On the other hand, lack of time and knowledge about the complex GM tasks seem to be important barriers for adoption, as also found in other studies [1].

As the authors suggest, educational efforts aimed at promoting GM should take into account physicians' openness to the advantages and compatibility of GM with professional practice. Taking into account the influence of the barriers for the implementation mentioned and the important role of PCPs in the adoption of GM in primary care, more emphasis should also be placed on the interaction between physicians and the producers of innovations during the innovation process itself. This interaction could be directed at improving the observability of GM tasks and making GM a more physician-oriented innovation.

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Reference

- 1 Haylick SJ, Eiff MP, Carpenter L, Steinberger J: Primary care physicians' utilization and perceptions of genetic services. *Genet Med* 1998;1:13–21.