

A Social Network Analysis of Communication about Hereditary Nonpolyposis Colorectal Cancer Genetic Testing and Family Functioning.

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Hereditary cancers are relational diseases. A primary focus of research in the past has been the biological relations that exist within the families and how genes are passed along family lines. However, hereditary cancers are relational in a psychosocial sense, as well. They can impact communication relationships within a family, as well as support relationships among family members. Furthermore, the familial culture can affect an individual's participation in genetic counseling and testing endeavors. Our aims are (a) to describe the composition of familial networks, (b) to characterize the patterns of family functioning within families, (c) to analyze how these patterns relate to communications about genetic counseling and testing among family members, and (d) to identify influential family members. Specifically, we asked how the relationship between mutation status, kinship ties, and family functioning constructs, e.g., communication, cohesion, affective involvement, leadership, and conflict, was associated with discussions about genetic counseling and testing. We used social network analysis and random graph techniques to examine 783 dyadic relationships in 36 members of 5 hereditary nonpolyposis colorectal cancer (HNPCC) families interviewed from 1999-2000. Results suggest that in these five HNPCC families, two family members are more likely to discuss genetic counseling and testing if either one carries the mutation, if either one is a spouse or a first-degree relative of the other, or if the relationship is defined by positive cohesion, leadership, or lack of conflict. Furthermore, the family functioning patterns suggest that mothers tend to be the most influential persons in the family network. Results of this study suggest encouraging family members who act in the mother role to take a "team approach" with the family proband when discussing HNPCC risks and management with family members.

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