

## SIGNIFICANCE OF GENETIC AND GENOMICS IN NURSING

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### **Abstract**

Genetics nursing is a nursing specialty in nursing that focuses on providing genetic healthcare to patients. The progress in genetics and genomics is applicable to the entire spectrum of health care and all health professionals and as such to the entire nursing profession. All nurses need to be adequately educated in genetics and understand disease processes, practice appropriate prevention techniques, reduce adverse drug reactions, and provide optimal patient care. In this era the scope of nursing practice had great demands in genetic and genomic literacy. As I belong to nursing professional with community health nursing specialty working under academic sector I wish to share the importance of genetic in nursing. In this article you can get in depth knowledge on genetics in nursing, its importance in nursing education, nursing practice and in nursing research. I hope this article will be useful for nursing professionals to apply the genetic advancements in screening at risk patients and addressing the needs of the patient or family facing a genomic health compromise also help them to bring change in their patient care and provide quality care in health promotion and disease prevention and attain the goal of health for all.

**Keywords:** Genetics, Genomics, Nursing, Community Health Nursing, Education

### **INTRODUCTION**

The term genetics defined as the study to find out how in all living things, the characteristics and qualities of parents are given to their children by their genes. It also refer as the study of a particular gene-its function, effects, and heredity. Genomics is the study of all of a person's genes (the genome), including interactions of those genes with each other and with the person's environment. Nowadays we know about many diseases are transmitted from the parents to the children. The progress in genetics and genomics is applicable to the entire spectrum of health care and all health professionals and as such to the entire nursing profession. All nurses need to be adequately educated in genetics and understand disease processes, practice appropriate prevention techniques, reduce adverse drug reactions, and provide optimal patient care. In this era the scope of nursing practice had great demands in genetic and genomic literacy.

### **IMPORTANCE OF LEARNING GENETIC NURSING FOR NURSING STUDENTS**

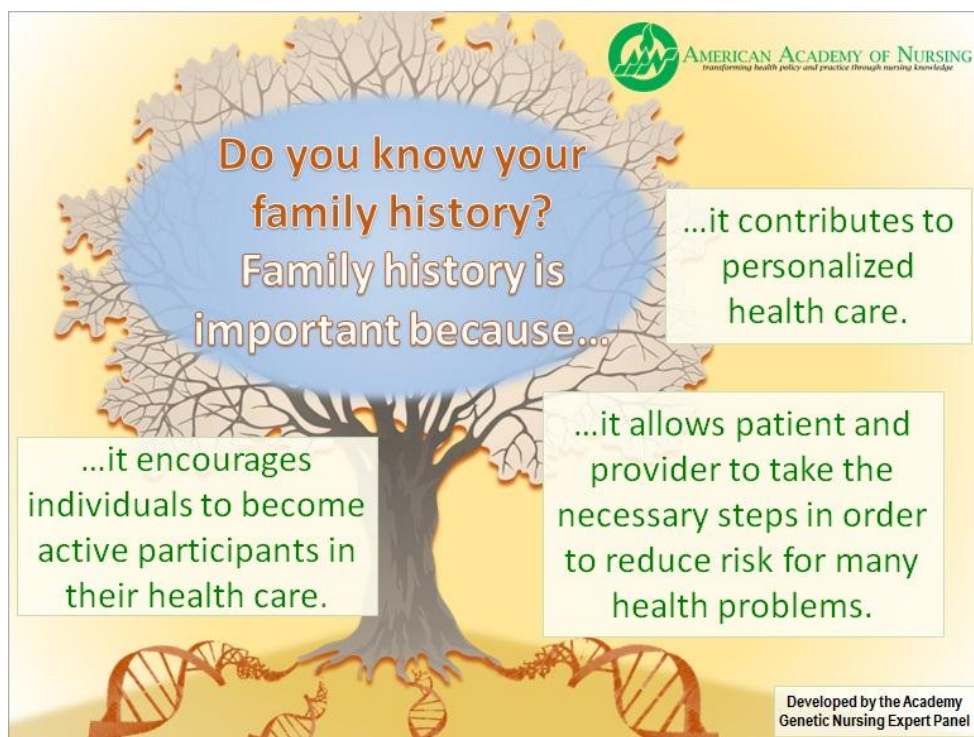
The nursing students are our future nurses; they should be trained and educated with advancement in patient care to protect the humanities from illness. Genetic in nursing education helps the nursing students to gain adequate knowledge on genomics and also help them to implement the genetic information and genomic treatment into practice. Currently, many practicing nurses lack genomic literacy which inhibits effective patient care, so our nursing students should be educated with advancement in genetic nursing. In nursing profession, nursing must increase the genetic and genomic competencies of nursing graduates and those

within practice to meet the needs of patients and families facing genetic disorders.

### IMPORTANCE OF GENETIC IN NURSING PRACTICE

Competent nursing practice now requires the incorporation of genetic and genomic knowledge and skills in order to advocate clients to access the desired genetic/genomic services and/or resources including support groups. Knowledge in genetic nursing helps to recognize when one's own attitudes and values related to genetic and genomic science may affect care provided to clients. The nurse can able to examine competency of practice on a regular basis, identifying areas of strength, as well as areas in which professional development related to genetics and genomics would be beneficial. She can incorporate genetic and genomic technologies and information into nursing practice. Nurse can demonstrate in practice the importance of tailoring genetic and genomic information and services to clients based on their culture, religion, knowledge level, literacy and preferred language. Advocate for the rights of all clients for autonomous, informed genetic and genomic-related decision-making and voluntary action

Nurses awareness on genetics helps to identifying patients who might benefit from referral to genetics services or related information. Skills in family history-taking help to identify people potentially at risk. Knowing how and where to refer patients for specialist advice .Nurses knowledge on genetic in nursing helps in her ongoing nursing **care** and support which is a fundamental part of nurses' role. It includes knowing or finding out about the condition, listening to patients and families, helping them to understand the concept of risk, explaining prognosis, finding out about support groups and acting as a patient advocate. The psychosocial impact of genetic information or diagnosis on patients and families may require longer term support from nurses involved in ongoing care. Feelings of guilt and blame, loss and bereavement are not uncommon and require sensitive, empathic nursing care.



The community health nurse can communicate genetic information in a way patients/families can understand is crucial given the complexity of the field during her home visit and in health education and health awareness programme. Families understanding may be influenced by media reports, or their own beliefs about how conditions run in families. While genetic counselors are highly skilled at communicating information, patients spend relatively little time with them compared with nurses especially community nurses. Sometimes patients may not even be referred to genetics services. The nursing role here is to inform and support decision making about genetic testing, reproductive and lifestyle choices, and direct them to further information.

**Reflecting on practice** is particularly important where new knowledge and skills are being acquired and applied to practice. Reflection helps maintain awareness of the limitations of knowledge, and to be aware of the wider implications of genetic information for patients, families and wider society

### **IMPORTANCE OF GENETIC IN NURSING RESEARCH**

The goal of nursing research in clinical genetics and genomics is to improve the quality of health care for patients and families. Nursing research on genetics and genomics can provide a foundation of content for maintaining wellness through prevention and health promotion. Nursing research in genetics investigates the behavioral, social, and physiological benefits and risks for individuals and families is needed to verify the value of this new science to patient and family care.

There is an urgent need for nursing research that provides evidence for genetic/genomic practice guidelines and to document outcomes of genetic/genomic based nursing care. Nurses, other health care professionals and their employers will ultimately face significant liability for failing to incorporate genetic/genomic discoveries into practice. The integration of genetics and genomics information into all facets of health care provides the tools to treat patients as truly unique individuals and implement novel screening, diagnostic, and therapeutic interventions all aimed at improving population health. Application of nursing research on health disparities to research on genetic and genomics helps to bring good health outcomes for patients and their families.

### **CONCLUSION**

The integration of genetics and genomics information into all facets of health care provides the tools to treat patients as truly unique individuals and implement novel screening, diagnostic, and therapeutic interventions all aimed at improving population health. The integration of genetics and genomics information into all facets of health care provides the tools to treat patients as truly unique individuals and implement novel screening, diagnostic, and therapeutic interventions all aimed at improving population health.

The knowledge gap associated with the sensitivity, specificity and clinical utility of the broad array of genetic tests available to the public. This gap can be closed through education about the relevancy of these discoveries and the translation to practice, education, and policy. Practicing nurses should be adequately prepared to apply genetic advancements in screening at risk patients and addressing the needs of the patient or family facing a genomic health compromise.

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