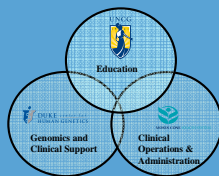


## What is GGMI?

The Guilford Genomic Medicine Initiative (GGMI) is a collaborative demonstration project involving Moses Cone Health System, The University of North Carolina at Greensboro, and the Duke University's Center for Human Genetics and Department of Medicine. The goal of this initiative is to develop a model system that integrates genomic medicine services into a community health system. GGMI is a comprehensive program, which includes clinical operations, research, and education component.



### Need for Community Survey

Education is an essential part of GGMI, as the integration of genomic medicine services into a community health system will hinge, in large part, on the public's perception, acceptance and utilization of these services. To monitor the effectiveness of the educational initiatives, a reliable instrument is required "...to assess the genetic knowledge, attitudes, and beliefs held by the public and to identify areas of misconception or concern that may benefit from public health intervention." (Wang et al., 2005) However, few surveys exist which assess all of these variables (Richards & Ponder, 1996; Jallinoja & Aro, 1999; Henneman, Timmermans, & van der Wall 2004; Lanie et al., 2004), and those that do are often disease-specific or limited in scope (Sanderson et al. 2004; Bortoff et al., 2002; Bunn et al., 2002; Furr & Kelly, 1999).

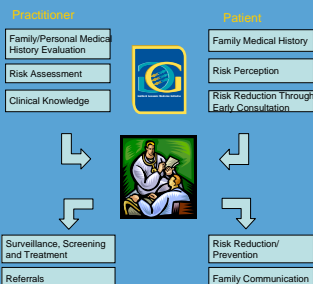
One goal of this project was to develop an instrument and conduct a baseline educational needs assessment of English speaking residents in Guilford County, over age 18. A pilot instrument was developed and modifications were made based on the pilot data. The modified instrument was then used to conduct the community survey. The instrument is posted on the GGMI website ([www.genomic-medicine.org](http://www.genomic-medicine.org)). For more information on GGMI or this survey please attend the presentation: Attitudes Regarding Genetic Testing.

## Methods

### Survey Development

The knowledge portion of the survey is based on the overall goal of our educational initiative, to facilitate point-of-service education between primary care providers and their patients. To promote these conversations, we developed three overarching themes for our community, patient and healthcare providers' education initiatives:

- Family health history is central to genomic medicine.
- Healthcare recommendations exist for people at increased risk for certain diseases that may reduce their risk or delay the onset of disease.
- At this time, genetic testing for susceptibility genes is appropriate for only a subset of people at increased risk.



## Considerations in Developing Educational Objectives

- NCHPEG Core Competencies in Genetics Essential for Health Care Professionals
- The role of family health history in the assessment of risk for the common complex diseases
- Lack of familiarity with genomic medicine on the part of the community and health care professionals
- The general perception among professionals and lay people that genetic testing is the first step in the risk assessment process
- The mistrust of the health care system expressed by people who participated in our focus groups

### Key Results From the Pilot Survey

The pilot survey was distributed to students enrolled in six courses on the UNCG campus:

- General Psychology (2)
- Principles of Microeconomics
- Economics of Entrepreneurship
- Teaching as a Profession
- Graduate Course in Nursing

301 students completed the survey. The respondents were predominately female (74.1%) and Caucasian (74.8%) with a median age of 23. This is representative of UNCG's campus.

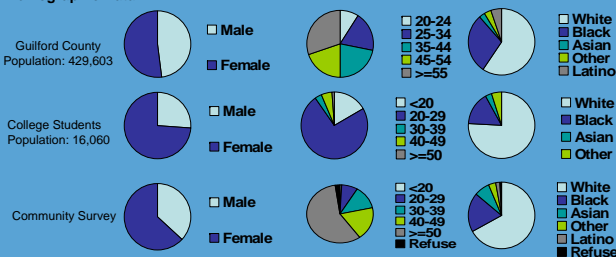
### Key Results From the Community Wide Telephone Survey

The telephone survey was a random digit dial survey of:

- English speaking
- Guilford County residents
- Aged 18 years or older

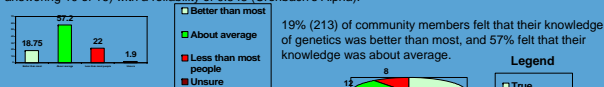
1136 residents completed the survey (14% response rate). The respondents were predominately female (63%) and Caucasian (73%) with a median age of 53.5. This is somewhat representative of the UNCG population and the Guilford County population which is 52% female, 63% Caucasian, and a median age of 36.8.

### Demographic Data.



### Knowledge: Community Survey

9.6% (109 out of 1136) of community members scored above a cumulative percentile of 90% (correctly answering 10 of 16) with a reliability of 0.543 (Cronbach's Alpha).



57% of respondents incorrectly answered the question "People are genetically more similar to their parents than to their brothers or sisters".

71% of the community members incorrectly answered the question "All women would benefit from getting a genetic test for breast cancer."

92% of community members correctly answered the question "Most health problems are caused by a combination of genes, the environment, and lifestyle."

58% of community members correctly answered the question "Genes play a part in almost all diseases."

### Knowledge vs. Attitudes: Community Survey

Question	Response	Attitude towards genetic testing (n=1136)	Attitude towards genetic testing (n=1136)	Attitude towards genetic testing (n=1136)	Attitude towards genetic testing (n=1136)	Knowledge (n=1136)
Attitude towards genetic testing (n=1136)	Produce Evidence	1027	1027	1027	1027	1027
	No. (n=1136)	1027	1027	1027	1027	1027
Wishes of genetic testing (n=1136)	Produce Evidence	1027	1027	1027	1027	1027
	No. (n=1136)	1027	1027	1027	1027	1027
Attitude towards genetic testing (n=1136)	Produce Evidence	1027	1027	1027	1027	1027
	No. (n=1136)	1027	1027	1027	1027	1027
Knowledge (n=1136)	Produce Evidence	1027	1027	1027	1027	1027
	No. (n=1136)	1027	1027	1027	1027	1027

Factor analysis found four (4) constructs that loaded together.

- Morals
- Worries about the technology
- Attitude on Genetic Policies
- Attitude toward future biology

### 1.) KNOWLEDGE & MORALITY (r = 0.246\*\*)

This positive correlation is significant and shows the direct relationship between knowledge score and morality. This tells us that as knowledge score increases, people tend to disagree more with the morality statements.

### 2.) KNOWLEDGE & WORRY (r = -0.065\*)

This negative correlation is significant but tells us that as knowledge score increases, worry decreases.

### 3.) KNOWLEDGE & POLICY (r = 0.144\*\*)

This correlation is positive and means that as knowledge score increases respondents tend to reply "very unlikely" to the policy based statements on genetics becoming mandated.

### 4.) KNOWLEDGE & FUTURE (r = -0.098\*\*)

This negative correlation means that as knowledge increases people tend to respond "very likely" to the statements about genetics bettering the future.

## Conclusions

Based on the analysis of the students' responses and their feedback, questions were reworded, added, or deleted for the community survey. Additional questions were added to the attitudes section to better capture respondents' confidence in regulatory agencies. The revised instrument was used to survey a random sample of 1136 Guilford County residents in July and August 2006.

Almost 10% of the community members scored well on the knowledge portion of the survey, receiving a cumulative percentile higher than 90%. The zip code a person lives in, their education level, and their age were all statistically significant in how well they scored on the knowledge section of the survey. This indicates that there is a need for education about genomic medicine in certain segments of the community.

We found that the higher the knowledge of the population, the less likely they were to feel morally against genetic technology, they were more likely to think that genetic becoming mandated was "very unlikely", and more likely to feel positively about genetics bettering the future.

The results of this survey will help structure the community educational intervention for Guilford County. This survey will be revised, based on the information obtained, and implemented again at the end of the community educational intervention.

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