Online Appendix

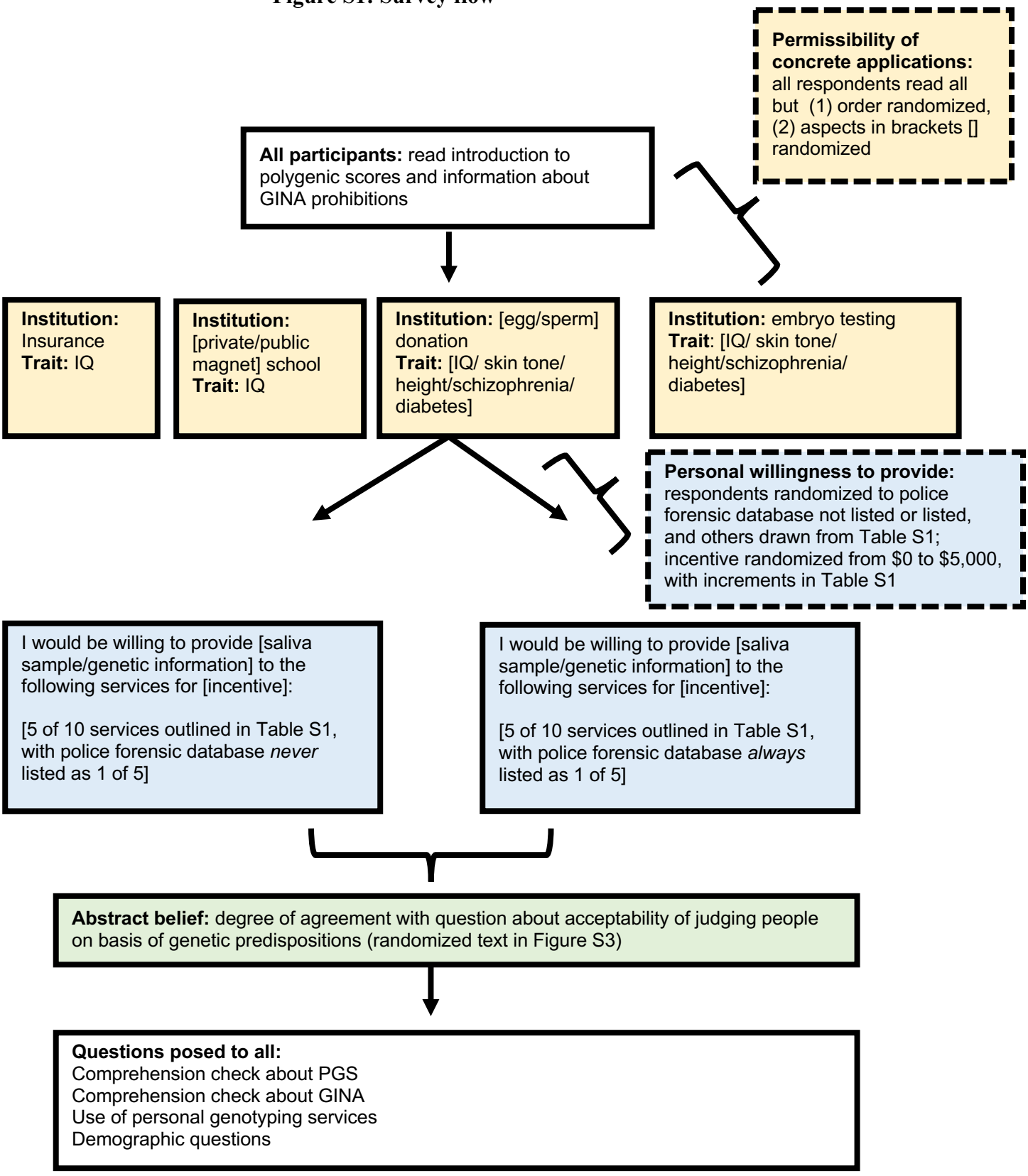
I. Survey Design Overview

The survey followed the question flow below:

1) Introduction to polygenic scores
2) Introduction to the Genetic Information Nondiscrimination Act (GINA)
3) Five vignettes about the permissibility of institutional uses of genetic prediction (order randomized)
    a. School (kindergarten)
    b. Insurance
    c. Sperm/egg donation
    d. Embryo selection
    e. Dating app: *we exclude these results due to paper's focus and will report them in another manuscript.*
4) Personal willingness to provide genetic information questions
5) General attitude toward acceptability of judging based on genetic predispositions
6) Understanding checks and experience with genotyping services
7) Demographic and background questions

Figure S1 on the next page shows the flow through conditions, and what was randomized. The following sections provide the precise wording for each question.

Figure S1: Survey flow

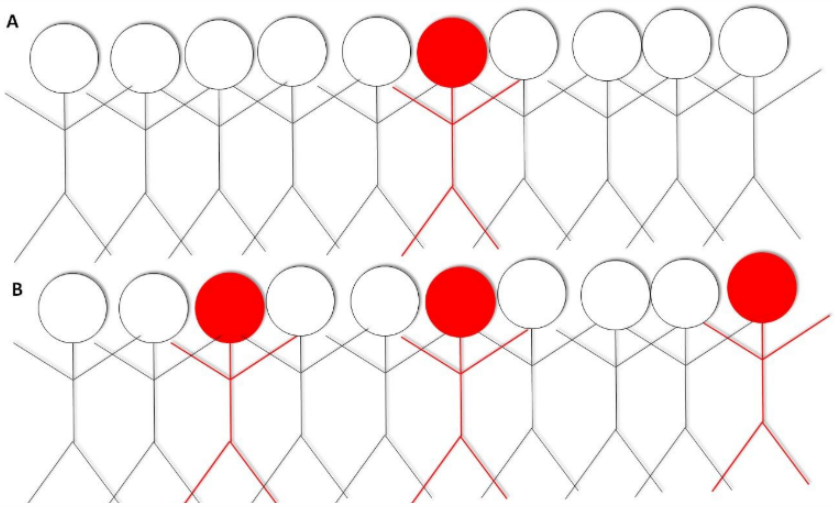


The introductory screens consisted of the following:

Figure S2: Introductory screen

Scientists have found that there's no one gene that determines most diseases and traits; instead, they're finding that many genes contribute to explaining human differences. As a result, scientists have developed measures called polygenic scores (PGS) that attempt to capture the effects of all of a person's genes on a given outcome.

For example, there is a score that predicts the risk of depression: The higher your score on the depression PGS, the greater the chance you will be diagnosed with depression at some point in your life. As shown in the pictures below, one in ten Americans with low scores (group A) will experience depression in their lifetimes, while three out of ten with a high score (group B) will experience depression in their lifetimes.



Today, scientists can calculate polygenic scores for outcomes such as IQ, height, skin tone, diabetes, and the likelihood of getting schizophrenia--just to name a few.

Science is steadily improving how accurately these scores predict people's outcomes.

Currently, the Genetic Information Nondiscrimination Act of 2008 (GINA) outlaws the use of genetic information for health insurance or hiring purposes but does not cover other areas of life.

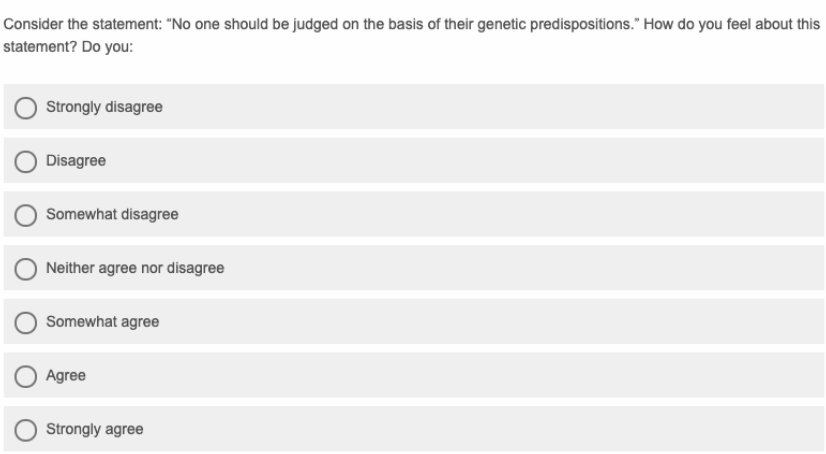
What follows is a series of questions about the potential uses of these polygenic scores.

II. Survey Items Analyzed

II.a - Acceptability of judging based on genetic predispositions

To capture general attitudes toward the use of genetic information to render judgments, we asked respondents the following question:

Figure S3: Question on judging based on genetic predispositions

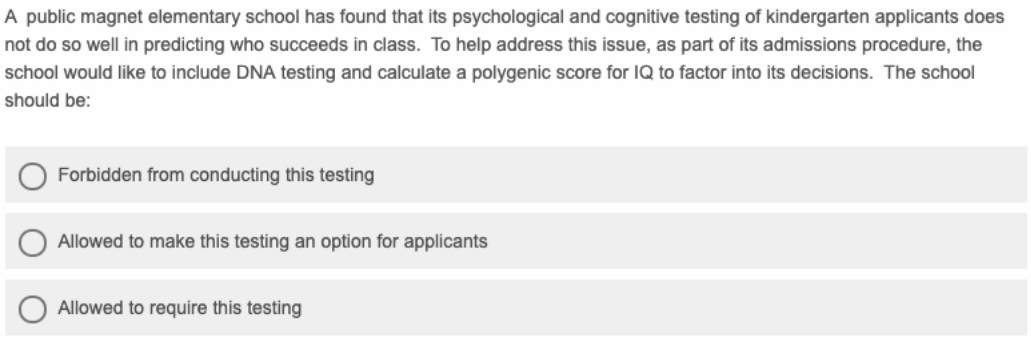


We randomized the wording of the central statement to be either "No one should be judged on the basis of their genetic predispositions" or "It's normal and acceptable to judge individuals on the basis of their genetic predispositions." In our analysis, we pooled all responses, reversing answers when respondents saw the first version of the statement (for example, responses of "agree" were converted to "disagree").

II.b - Permissibility of institutional uses of genetic prediction

School vignette

Figure S4: School vignette

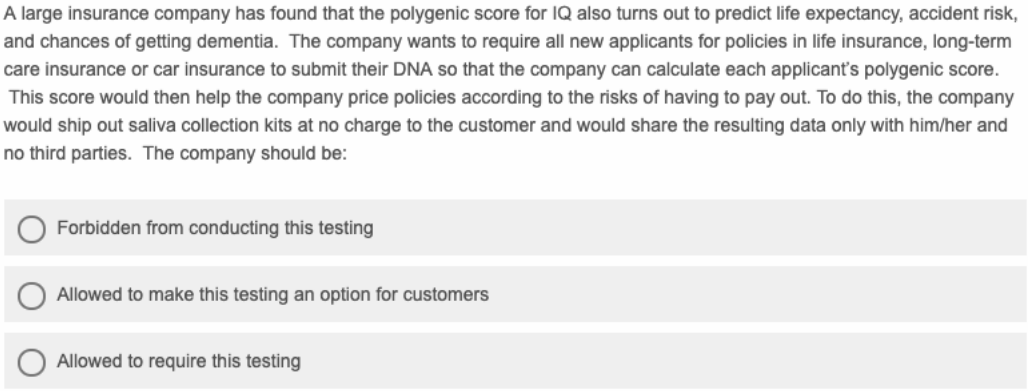


We randomized the school to be either "private" or "public magnet." The trait predicted by polygenic scoring is set as IQ.

We coded responses of "Allowed to make this testing an option for applicants" and "Allowed to require this testing" as viewing PGS use as permissible. We coded "Forbidden from conducting this testing" as viewing PGS use as impermissible.

Insurance vignette

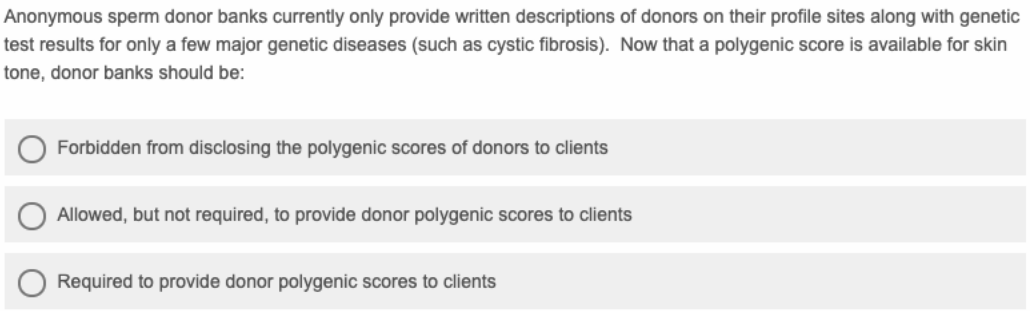
Figure S5: Insurance vignette



The trait predicted by polygenic scoring is set as IQ. We coded responses of "Allowed to make this testing an option for customers" and "Allowed to require this testing" as viewing PGS use as permissible. We coded "Forbidden from conducting this testing" as viewing PGS use as impermissible.

Sperm/egg donation vignette

Figure S6: Egg/sperm donor vignette

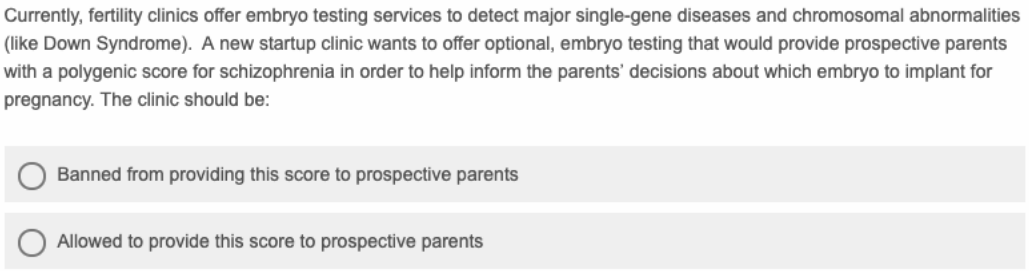


We randomized the donor material to be either "egg" or "sperm." We also randomized the trait predicted by polygenic scoring to be either IQ, skin tone, height, schizophrenia, or diabetes.

We coded responses of "Required to provide donor polygenic scores to clients" and "Allowed, but not required, to provide donor polygenic scores to clients" as viewing PGS use as permissible. We coded "Forbidden from disclosing the polygenic scores of donors to clients" as viewing PGS use as impermissible.

Embryo selection vignette

Figure S7: Embryo selection vignette



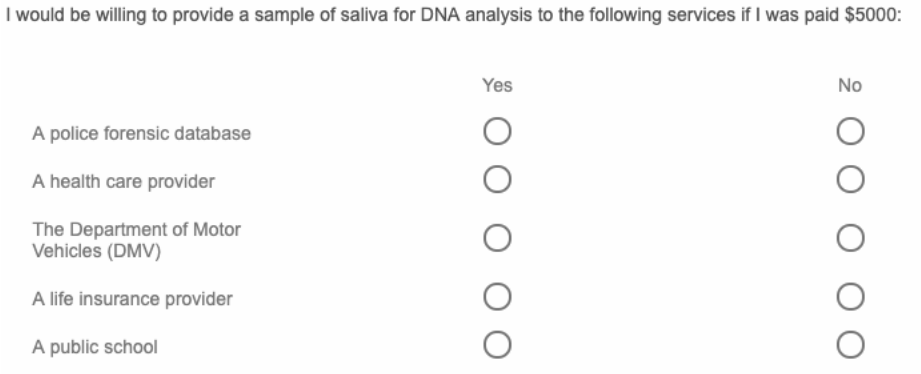
We randomized the trait predicted by polygenic scoring to be either IQ, skin tone, height, schizophrenia, or diabetes. We coded responses of "Allowed to provide this score to prospective parents" as viewing PGS use as permissible. We coded "Banned from providing this score to prospective parents" as viewing PGS use as impermissible.

II.c - Willingness to provide genetic information

We asked respondents whether they would be willing to provide their genetic information to five institutions/services randomly drawn from a larger list of ten.

The question appeared in the following manner:

Figure S8: Willingness to provide genetic information question



We randomized three components of the question: which institutions/services were listed, the payment amount, and the question wording, based on the following options:

Table S1: Randomizations in willingness to provide genetic information question

Institution/Service	**Payment amount**	**Question wording**
Health care provider	$0	" a sample of saliva for DNA analysis"
Relative finder	$100	"my genetic information"
Police forensic database	$500	
Department of Motor Vehicles (DMV)	$1,000	
Public school	$5,000	
Employer		
Life insurance provider		
Music/video service		
Lender		
Social network		

The selection of the five institutions/services presented to each respondent followed a two-step procedure. First, because we were originally concerned based on prior research that including "police forensic database" may have a chilling effect on all responses, we randomized whether it

was displayed or not (with 50% probability of being displayed). Second, if "police forensic database" was randomly selected to be displayed, then two of the seven non-governmental options were randomly selected (health care provider, relative finder, employer, life insurance provider, music/video service, lender, and social network). If "police forensic database" was *not* randomly selected, then three of the seven non-governmental options were randomly selected. The two governmental options -- public school and Department of Motor Vehicles -- were always displayed. This procedure was selected to ensure that each respondent saw a relatively even balance of governmental and non-governmental institutions/services.

We coded "Yes" responses as reporting willingness to share genetic information and "No" responses as not reporting willingness to share genetic information.

III – Detailed Hypotheses

- ***Permissibility of concrete applications***:
    - How does acceptance of polygenic risk scoring compare across institutional settings? We predict that acceptance will be higher for reproduction-related applications than applications in other spheres because genetic testing initially emerged from the health care sector and past research indicates that the public believes that clinicians should be involved in interpreting genetic test results (Almeling and Gadarian 2014).
    - How does acceptance of polygenic risk scoring compare across outcomes predicted? We predict that risk scores for diseases will be more accepted than risk scores for non-disease traits because the former fall under the purview of medicine, granting them greater legitimacy as bases of social differentiation.

- ***Personal willingness to provide genetic information:*** To which institutions and services is the public willing to provide genetic information? We predict that respondents will be least willing to provide genetic information to law enforcement because it is associated with punishment and surveillance. We hypothesize that respondents will be more willing to provide genetic information in settings where that data may allow personalization or enable individuals to make more informed decisions than in settings where the data may be used to stratify access to opportunities and resources.
- ***Demographic variation:*** How do abstract beliefs, attitudes toward concrete applications, and personal willingness to provide genetic information vary by respondent demographics? We predict that racial minorities, less educated respondents, more religious respondents, more politically conservative respondents, older respondents, and women will hold less favorable views.

IV – Pairwise Wilcoxon tests of subgroup differences

Results below represent p-values from post-hoc pairwise Wilcoxon tests with Benjamin-Hochberg adjustments for multiple comparisons. As discussed in the main text, the largest distinction we find is a lack of demographic subgroup differences in the "abstract belief" ratings and a presence of demographic differences in the concrete applications. Within the two different concrete applications — ratings of permissibility; personal willingness to provide — we find modest differences. Respondents with advanced degrees were permissive toward fewer applications than all other categories of respondents, but were similarly willing to provide genetic information as other respondents with more than a high school education. Similarly, respondents with other religious affiliations were less permissive than those with no religious affiliations, but comparably willing to provide their genetic information.

IVa. # of concrete applications rated as permissible

Gender:

	Male (n = 701)
Female (n = 755)	0.0073

Race/ethnicity:

	White, non-Hispanic (n=960)	Black, non-Hispanic (n=141)	Other (n=127)
Black, non-Hispanic (n=141)	0.6863	-	-
Other (n=127)	0.2965	0.5929	-
Hispanic (n=229)	0.0007	0.0819	0.2965

Age:

	18-29 (n=222)	30-39 (n=313)	40-49 (n=206)	50-59 (n=256)
30-39 (n=313)	0.7839	-	-	-
40-49 (n=206)	0.0913	0.0502	-	-
50-59 (n=256)	0.0002	0	0.0887	-
60+ (n=460)	0.0002	0	0.0913	0.7839

Education:

	HS or Less (n=303)	Some College (n=464)	Associates (n=224)	Bachelors (n=279)
Some College (n=464)	0.047	-	-	-
Associates (n=224)	0.2716	0.7019	-	-
Bachelors (n=279)	0.3266	0.4364	0.752	-
Advanced (n=185)	0.0011	0.047	0.047	0.0157

Religious affiliation:

	Protestant (n=369)	Catholic (n=297)	Other (n=373)
Catholic (n=297)	0.0988	-	-
Other (n=373)	0.2204	0.5837	-
None (n=408)	0.0003	0.096	0.0256

IVb. Proportion of institutions to which respondent is willing to provide genetic info

Gender:

	Male (n=695)
Female (n=751)	0.0006

Race/ethnicity:

	White, non-Hispanic (n=957)	Black, non-Hispanic (n=139)	Other (n=124)
Black, non-Hispanic (n=139)	0.7192	-	-
Other (n=124)	0.2803	0.2803	-
Hispanic (n=226)	0.0418	0.0824	0.5953

Age:

	18-29 (n=220)	30-39 (n=312)	40-49 (n=204)	50-59 (n=254)
30-39 (n=312)	0.0011	-	-	-
40-49 (n=204)	0	0.2999	-	-
50-59 (n=254)	0	0.1225	0.6285	-
60+ (n=456)	0	0.0221	0.3894	0.6285

Education:

	HS or Less (n=297)	Some College (n=461)	Associates (n=223)	Bachelors (n=279)
Some College (n=461)	0.124	-	-	-
Associates (n=223)	0.0301	0.3392	-	-
Bachelors (n=279)	0.0087	0.1676	0.7823	-
Advanced (n=184)	0.0087	0.1265	0.6679	0.7733

Religious affiliation:

	Protestant (n=367)	Catholic (n=293)	Other (n=371)
Catholic (n=293)	0.1048	-	-
Other (n=371)	0.0157	0.6432	-
None (n=405)	0.0157	0.6432	0.9141

References

Almeling R, Gadarian SK. Public opinion on policy issues in genetics and genomics. Genet Med. 2014;16(6):491–4.