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The effects of a genetic information leaflet on public attitudes towards genetic testing

Saskia C. Sanderson, Jane Wardle and Susan Michie

Genetics opinion surveys often include information to ensure that respondents have sufficient understanding to give informed responses. The information is assumed to be neutral but may skew responses. We assessed the impact of a seemingly "neutral" information leaflet on attitudes towards genetic testing among 1,024 survey respondents, half of whom received the leaflet. The leaflet group reported higher levels of subjective understanding of genetic testing (68 percent vs. 53 percent), were more interested in genetic testing (81 percent vs. 77 percent), and held more positive attitudes towards genetics than people who did not receive the leaflet. Information leaflets may have the intended effect of increasing understanding, but may also unintentionally influence reported views on genetics. In the light of the weight given to public consultation in today's governance and regulation of human genetics, increased awareness of how even seemingly neutral information can influence public attitudes is recommended.

1. Introduction

The UK government's advisory body on human genetics, the Human Genetics Commission (HGC), recently stated that it was "not [their] job to offer detailed regulatory advice," but rather to "gauge opinion and offer suggestions about what the regulation of genetic tests might look like" (Human Genetics Commission, 2003). This focus on "gauging public opinion" highlights the weight given to public consultation in the governance of human genetics in the UK at the present time, and suggests that the results from social surveys of public attitudes may have a very real influence on the regulation of human genetics technologies.

Surveys of public opinion often suggest that the public feel positive towards human genetics, especially in the case of genetic testing, where high levels of public interest in genetic testing for disease susceptibility are almost always reported, regardless of disease type (e.g. Bosompra et al., 2000; Shaw and Bassi, 2001; Bunn et al., 2002; Sanderson et al., 2004). It is clearly important that these surveys represent the public's views regarding human genetics as accurately as possible, as well as that they consider possible factors that could—deliberately or inadvertently—influence public opinion. One consideration is the way in which accompanying information is presented. Because there tends to be an assumption that

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the public's understanding of genetics and genetic testing is limited (Henderson and Maguire, 1998; Singer et al., 1998), surveys of attitudes towards genetics are often accompanied by at least some basic genetics information to ensure that respondents have sufficient understanding to answer the questions, e.g. "by genetic test we mean . . . ." Obviously it is hoped or assumed that any information leaflets or other sources of information that accompany surveys should increase understanding without directly influencing attitudes.

However, the task of increasing understanding without influencing attitudes may not be straightforward. The considerable body of literature on the relationship between understanding and attitudes towards science provides evidence that understanding of science is related, albeit sometimes weakly, to holding more positive attitudes towards science (Evans and Durant, 1995; Wroe and Salkovskis, 1999; Sturgis and Allum, 2004). At the same time, there is evidence that as people gain more knowledge about some specific human genetic technologies such as cloning, they in fact have more arguments against the technology (e.g. Wellcome Trust, 1998), and this is consistent with the observation that people who are more knowledgeable about science hold more positive attitudes generally, but have more developed arguments against specific technologies (Evans and Durant, 1995). In addition, evidence from a different field, that of clinical genetics, suggests that information that is intended to be non-directive could unintentionally influence attitudes. Wroe and Salkovskis (1999) for example, showed that information about genetics and breast cancer given to people prior to making a decision about opting for genetic testing, influenced both their testing decisions and their ratings of the severity of breast cancer, which challenges the notion that apparently non-directive information really is "neutral." There has been little investigation of the impact of the information that accompanies surveys, or indeed of genetics information leaflets more broadly, on individuals' attitudes. It is possible that efforts to increase understanding of genetics in order to enable people to make an informed response to survey questions could have the unintentional effect of shifting reported attitudes in a more positive direction.

In this paper we examined whether the inclusion of an information leaflet in a public opinion survey influenced attitudes and interest in genetic testing. The leaflet was developed with the intention of increasing subjective understanding of genetic testing and was intended to give the information in a "neutral" way. However, given the evidence from clinical genetics research, we anticipated that it might have an unintended effect on attitudes. Because the main aim of the study was to examine the effects of the leaflet on attitudes, we elected to use a self-report measure of subjective understanding of genetic testing rather than a multi-item measure of "objective" understanding, so that respondents were not deterred from replying by feeling that they were being "tested." Measuring actual knowledge would also have been difficult given that this was a postal survey, and so respondents could have referred to the leaflet or additional sources of information (e.g. books or relatives) when answering the questions. We examined whether the leaflet affected interest in genetic testing specifically, and attitudes towards genetics more generally, and predicted that we would see higher interest and more positive attitudes amongst people who received the leaflet than those who did not, as a consequence of the increase in understanding.

2. Methods

Design and procedure

Two thousand adults, aged 18 to 75 years, were selected randomly from a general practice register of approximately 8,000 adults in Oxfordshire, England. Materials included an eight-

page postal survey containing questions on understanding of genetics and attitudes towards human genetics and genetic testing, and the information leaflet. People were randomly allocated to receive either the survey alone or the survey plus the information leaflet. Half of the survey instruments asked questions in relation to genetics and cancer whilst the other half asked questions in relation to genetics and heart disease, in a 2×2 experimental survey design (information leaflet vs. no leaflet; cancer vs. heart disease). For the purposes of this paper the two disease groups were combined and any effects of disease condition were controlled for in the statistical analyses. Questionnaires and leaflets were sent out in January 2002. Reminder letters (enclosing another questionnaire) were sent out to non-responders after three weeks. Ethical approval for this study was granted by the National Health Service (NHS) Oxfordshire Research Ethics Committee and the University College London Ethics Committee.

Information leaflet

The content of the information leaflet used in this study was adapted from a two-page handout on the website of the American Academy of Family Physicians called "Genetic Testing: What You Should Know."[1] This information source was chosen after consideration of a number of sources because it was deemed to be the most suitable for members of the general population, much of the information literature available being targeted more to individuals and families who have been identified as being at high risk of developing "genetic diseases." It was also clear and concise, and was a credible and widely available source of information. The leaflet was piloted with 71 individuals, a focus group, a lay representative of the Patient Involvement Group at the general practice at which the study was conducted, and a UK genetics specialist. The aim of this pilot work was to develop the content and appearance of the information to make it as accessible, easy to read, and balanced as possible. The final version of the leaflet was double-sided, A5, color and glossy. It was titled "Genetics and Health: A Brief Introduction," with the subheadings "The Genetics and Health Survey" and "University of London." The first half of the leaflet provided background information about genetics under the subheadings "What are genes?" and "How are genes related to disease?" The second half of the information leaflet focused on genetic testing under the subheadings: "What is genetic testing?," "What does a positive test result mean?," "What does a negative test result mean?," and "What are the advantages and disadvantages of genetic testing?" In response to pilot work a small amount of information was added under the subheading "What diseases are genetic tests currently available for?," adapted from the "Understanding Gene Testing" pages of the National Cancer Institute website.[2] The final version of the information leaflet used in this study is available from the first author, or can be found on our website.[3]

Measures

Understanding of genetic testing A single item was used to measure self-reported understanding of genetic testing. Respondents were asked to indicate how much they agreed with the statement "I have a clear picture of what genetic testing is" by endorsing one of five response options (strongly disagree, disagree, not sure, agree, strongly agree).

Interest in genetic testing A scale was formed to measure interest in genetic testing by calculating the mean of the following four items: 1) "Suppose you had inherited something from your parents which made you more likely to develop [cancer] [heart disease] than other

people, would you want to be told this?"; 2) "Would you be interested in taking a genetic test for [cancer] [heart disease] risk?"; 3) "Would you have a genetic test for [cancer] [heart disease] risk if your doctor recommended it?"; and 4) "If it were available now, would you have a genetic test for [cancer] [heart disease] risk in the next 6 months?" The last item was adapted from an existing measure (Bosompra et al., 2000). Four response options were given for each question (no definitely not; no probably not; yes probably; yes definitely). The scale scores ranged from 1 to 4, with 4 being the most interested. The alpha coefficient of reliability was 0.90.

Attitudes toward genetics Attitudes toward genetics were measured using a 12-item attitude checklist. The checklist was adapted from an existing measure (Michie et al., 1995), and contained four positive words (excited, enthusiastic, optimistic, and hopeful); four negative words (worried, concerned, pessimistic, and horrified); and four mixed-neutral words (cautious, indifferent, mixed feelings, and confused). Participants were asked to indicate which of the words described their feelings about genetics by endorsing as many or as few of the words as they liked. The attitude checklist was used in two ways. First, analyses were conducted on individual attitude words. Second, two attitude scales were created using data reduction techniques, and analyses were conducted on these two scales. In order to create the two scales, we first of all conducted a principal components analysis with varimax rotation to see how the words best loaded together (alpha coefficients were inappropriate because of the checklist structure of the measure). This produced two factors accounting for 30 percent of the variance. The words enthusiastic, optimistic, hopeful and excited all loaded on Factor 1 with values over .50. Cautious, horrified, concerned, pessimistic, and worried all loaded on Factor 2 with values over .40. Factor 1 was therefore labeled "Positive Attitude Score" and Factor 2 was labeled "Negative Attitude Score." The remainder of the mixed-neutral words had low loadings (between .178 and –.480) on both factors, but appeared to have negative connotations, loading negatively on Factor 1, and positively on Factor 2. See Table 1 for factor loadings.

Table 1. Factor analysis of attitude towards genetics items: rotated components matrix

	Component	
	1 Positive attitude score	2 Negative attitude score
Enthusiastic	**.663**	.000
Indifferent	–.178	.000
Cautious	–.238	**.435**
Optimistic	**.622**	.000
Horrified	.142	**.582**
Confused	–.211	.351
Hopeful	**.518**	.000
Concerned	.000	**.573**
Mixed feelings	–.480	.331
Excited	**.611**	.211
Pessimistic	.000	**.421**
Worried	.000	**.663**

Extraction method: Principal Component Analysis. Rotation method: Varimax with Kaiser Normalization. Rotation converged in three iterations.

Statistical analysis

Statistical analyses were carried out using SPSS for Windows v. 10.0. Demographic characteristics (including gender, age, and education) of the sample and the frequencies of responses (interest, understanding, and attitudes) overall were examined using frequency tables, and responses were compared between educational attainment groups using linear regressions. Correlations between interest, understanding, positive attitude and negative attitude were examined. The effects of the leaflet on understanding of genetics, interest in genetic testing, and attitudes were assessed using linear regressions. In order to test whether any effect on attitudes (i.e. interest, positive attitude, and negative attitude) was attributable to the effect on understanding, the size of the regression coefficient was compared in models including or not including the score on understanding. If the attitude effect was mediated by understanding, then including understanding in the regression equation should reduce the apparent effect of the leaflet on attitudes.

3. Results

Demographic characteristics

1,024 (51 percent response rate) survey forms were returned, with similar numbers in the two groups (517 in leaflet group, 507 in control group) and for each disease focus (512 where genetic testing questions alluded to cancer, and 512 for heart disease). Demographic characteristics of the respondents are presented in Table 2. There were lower proportions of non-White British respondents than in the general UK population, which is probably partly due to the geographical location of the study, but there were no demographic differences between the leaflet group and the control group.

Understanding of genetic testing

Overall, 61 percent of the sample self-reported that they had an understanding of genetic testing (see Table 3). Self-reported understanding did not vary by gender or age, but individuals with higher educational attainment reported higher levels of understanding than those with lower levels of educational attainment: 39 percent with no formal qualifications, 58 percent with GCSEs, 66 percent with A-levels, and 74 percent with degrees felt they had a clear understanding of what genetic testing was ($p < .001$).

Interest in genetic testing

Seventy-nine percent of the sample reported that they would “definitely” or “probably” take a genetic test overall (see Table 3). The mean interest scale score was 3.3 ± 0.6 (on a range of 1 to 4, where 4 = high interest). Interest in genetic testing was higher amongst those with lower levels of education (90 percent with no formal qualifications; 81 percent with GCSEs; 78 percent with A-levels; 75 percent with degrees, $p < .001$).

Attitudes towards genetics

Attitudes towards genetics tended to be a mixture of positive and mixed-neutral words: 43 percent said that they were cautious about genetics, 37 percent were hopeful, 33 percent had mixed feelings, 32 percent were optimistic and 17 percent were enthusiastic. There was less

Table 2. Demographic characteristics of the sample

n = 1,024		*n*	Percent
Sex	Male	455	44
	Female	568	56
Age	18–35 yrs	222	22
	36–55 yrs	465	47
	56–75 yrs	309	31
Marital status	Single	222	22
	Married or cohabiting	798	78
Children	0	246	24
	1	152	15
	2	396	39
	3	166	16
	More than 3	58	6
Ethnic group	White British	1004	98
	Non-White British	7	1
Housing tenure	Rent from local authority	76	8
	Rent from private landlord	73	7
	Own home	798	78
	Other	72	7
Employment status	Employed	731	72
	Not employed	106	11
	Retired	177	18
Education	None	167	17
	GCSEs	367	37
	A-levels	131	13
	Degree	320	33

of a tendency to report negative attitudes towards genetics: 7 percent were worried, 3 percent were pessimistic and 2 percent were horrified (see Table 3). The method used to calculate the attitude scales produced a standardized mean score of zero overall for both the positive attitude scale and the negative attitude scale. People with higher levels of education held more positive attitudes (i.e. scored more highly on the positive attitude scale) than those with lower levels of education ($p = .026$), but there was no association of education with negative attitude scale scores ($p = .438$).

Correlations between understanding, interest and attitudes

Understanding of genetic testing was positively correlated with positive attitude towards genetics ($r = .196$, $p < .001$) and negatively with negative attitude towards genetics ($r = .075$, $p = .017$). Interest in genetic testing was also positively correlated with positive attitude towards genetics ($r = .253$, $p < .001$) and negatively correlated with negative attitude towards genetics ($r = –.167$, $p < .001$). There was no correlation between understanding of genetic testing and interest in genetic testing ($r = .057$, $p = .06$), nor between positive attitude and negative attitude ($r = .000$, $p = 1.00$).

Effect of the information leaflet on understanding of genetic testing

The leaflet group reported significantly more understanding of genetic testing (68 percent vs. 53 percent, $p < .001$) than the control group in the univariate analysis (see Table 3), and the effect was maintained when controlling for gender, age and education (see Table 5). Including the information leaflet as a dependent variable in the linear regression did not

affect the beta weights, i.e. the strength of the associations, between demographic factors (gender, age, education) and understanding, which indicates that the effect of the leaflet on understanding of genetic testing did not vary between different demographic groups.

Table 3. Interest in genetic testing, understanding of genetic testing, positive attitude and negative attitude overall and separately for leaflet group and control group

(n = 1,024)	Overall		Leaflet		Control		p
Interest in genetic testing[a]	806	79%	418	81%	388	77%	**.043**
Interest in genetic testing[b]	3.3	(0.6)	3.3	(0.6)	3.2	(0.64)	**.020**
Understanding of genetic testing[c]	610	61%	346	68%	264	53%	**< .001**
Attitude towards genetics							
Individual attitude words[d]							
Cautious	438	43%	199	39%	239	47%	**.005**
Optimistic	325	32%	182	35%	143	28%	**.016**
Concerned	178	17%	72	14%	106	21%	**.003**
Enthusiastic	172	17%	109	21%	63	12%	**< .001**
Worried	72	7%	28	5%	44	9%	**.041**
Hopeful	377	37%	198	38%	179	35%	.321
Mixed feelings	333	33%	156	30%	177	35%	.106
Confused	89	9%	37	7%	52	10%	.078
Excited	73	7%	41	8%	32	6%	.314
Indifferent	44	4%	22	4%	22	4%	.947
Pessimistic	29	3%	10	2%	19	4%	.080
Horrified	19	2%	9	2%	20	2%	.784
Positive attitude acade[e]	0.00	(1.00)	0.11	(1.05)	–0.11	(0.93)	**.001**
Negative attitude scale[e]	0.00	(1.00)	–0.10	(0.91)	0.10	(1.11)	**.001**

[a] Proportion of respondents who would "definitely" or "probably" take a genetic test, using a single item measure.
[b] Mean (standard deviation) interest in genetic testing when calculated by taking the mean of four separate "interest" items.
[c] Proportion of respondents who "agreed" or "strongly agreed" with the statement "I have a clear picture of what genetic testing is" on a five point scale.
[d] Proportion of respondents who ticked each individual word on the attitude checklist.
[e] Mean (standard deviation).

Table 4. Correlations between interest in genetic testing, understanding of genetic testing, positive attitude towards genetics, and negative attitude towards genetics

		Understanding of genetic testing	Positive attitude towards genetics	Negative attitude towards genetics
Positive attitude towards genetics	Pearson	**.196****		
	Sig.	.000		
Negative attitude towards genetics	Pearson	**–.075***	.000	
	Sig.	.017	1.000	
Interest in genetic testing	Pearson	.057	**.253****	**–.167****
	Sig.	.069	.000	.000

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

Table 5. Regression analyses of the associations between demographic characteristics, self-reported understanding of genetic testing, with and without information leaflet

Dependent variable	Beta weight	Significance
Understanding of genetic testing		
Model 1 Gender (m = 0, f = 1)	.044	.174
Age	.045	.179
Education	.204	< .001
Model 2 Gender (m = 0, f = 1)	.043	.176
Age	.042	.197
Education	.215	< .001
Leaflet (no leaflet = 0, leaflet = 1)	.192	< .001

Effect of the information leaflet on interest in genetic testing

Interest in genetic testing was higher in the leaflet group than the control group (81 percent vs. 77 percent, $p = .043$ using the single item measure; 3.3 ± 0.6 vs. 3.2 ± 0.6, $p = .020$ on the interest scale, Table 3).

Effect of the information leaflet on attitude towards genetics

Respondents in the leaflet group were more enthusiastic (21 percent vs. 12 percent), more optimistic (35 percent vs. 28 percent), and less cautious (39 percent vs. 47 percent), concerned (14 percent vs. 21 percent), and worried (5 percent vs. 9 percent) about genetics than those in the control group. Figure 1 shows the differences between the two groups for all of the attitude words.

Overall, the leaflet group reported more positive attitudes towards genetics (0.11 ± 1.05 vs. –0.11 ± 0.93, $p = .001$), and less negative attitudes (–0.10 ± 0.91 vs. 0.10 ± 1.11,

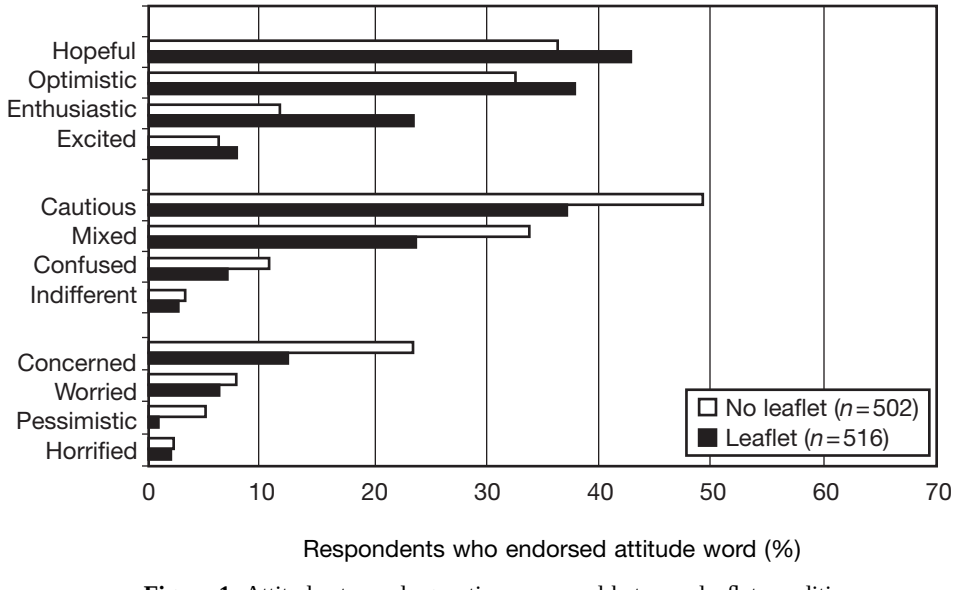

Figure 1. Attitudes towards genetics compared between leaflet conditions.

p = .001) than those in the control group (Table 3). The linear regression with positive attitude as the dependent variable, and gender, age, and education as control variables (see Table 6), showed that the effect was independent of demographic effects (beta = –.123, p < .001). To test whether this effect on attitudes was attributable to the increased understanding, the understanding score was included in the regression model. The beta weight associated with the leaflet was very little reduced (beta = –.090, p = .005),

Table 6. Regression analyses of the independence of the effect of the information leaflet on interest in genetic testing (scale), positive attitude towards genetics, and negative attitude towards genetics

Dependent variable	Beta weight	Significance
Interest in genetic testing		
Model 1 Gender (m = 0, f = 1)	.014	.659
Age	.155	< .001
Education	–.130	< .001
Model 2 *Gender (m = 0, f = 1)*	*.014*	*.655*
Age	*.096*	*.004*
Education	*–.086*	*.009*
Leaflet (no leaflet = 0, leaflet = 1)	–.069	.032
Model 3 *Gender (m = 0, f = 1)*	*.017*	*.598*
Age	*.096*	*.004*
Education	*–.110*	*.001*
Leaflet (no leaflet = 0, leaflet = 1)	–.055	.096
Understanding	.079	.018
Positive attitude		
Model 1 Gender (m = 0, f = 1)	–.063	.050
Age	.035	.289
Education	.098	.003
Model 2 *Gender (m = 0, f = 1)*	*–.064*	*.046*
Age	*.049*	*.140*
Education	*.108*	*.001*
Leaflet (no leaflet = 0, leaflet = 1)	.126	< .001
Model 3 *Gender (m = 0, f = 1)*	*–.065*	*.043*
Age	*.047*	*.155*
Education	*.068*	*.042*
Leaflet (no leaflet = 0, leaflet = 1)	.090	.024
Understanding	.170	< .001
Negative attitude		
Model 1 Gender (m = 0, f = 1)	.029	.375
Age	–.145	< .001
Education	–.030	.336
Model 2 *Gender (m = 0, f = 1)*	*.035*	*.279*
Age	*–.131*	*< .001*
Education	*–.032*	*.337*
Leaflet (no leaflet = 0, leaflet = 1)	–.101	.002
Model 3 *Gender (m = 0, f = 1)*	*.037*	*.257*
Age	*–.130*	*< .001*
Education	*–.017*	*.612*
Leaflet (no leaflet = 0, leaflet = 1)	–.084	.011
Understanding	–.059	.076

indicating that the effect on attitudes was largely independent of the effect on understanding.

4. Discussion

In this study we found that including a genetic information leaflet in a human genetics survey had the intended effect of increasing respondents' sense of understanding of genetic testing, albeit modestly and on a perceived rather than objective measure. Survey respondents who receive this type of information may therefore be in a better position to answer questions about their attitudes to genetics. However, the effect of the leaflet on interest in genetic testing, and on attitudes towards genetics—increasing positive attitudes and decreasing negative attitudes—suggests that the concerns about non-directiveness and neutrality which have grown up in the field of genetic counseling consultation may also be of relevance in the context of public opinion surveying or written information materials.

One possible explanation for this is that the shift in interest and attitudes was a direct consequence of the difference in understanding of genetic testing that was also observed, i.e. it was the *content* of the information that led to the changes in attitude. This fits with the historical assumptions that more understanding of science (or genetics) leads to more acceptance (Evans and Durant, 1995). However, the results of the regression analyses carried out in this study suggested that the effect of the leaflet on attitudes was independent of the effect on understanding. An alternative explanation is that it was something about the *appearance* of the leaflet that affected attitudes. The Elaboration Likelihood Model (ELM) proposes, for example, that under some circumstances people form their attitudes in response to peripheral cues such as the attractiveness and source of the information provided (Petty and Cacioppo, 1986). People in the leaflet group in this study may have become more positive in response to the fact that the information leaflet was glossy and colorful, and that it came from the University of London. Previous studies have found, for example, that universities and scientists are rated more positively and as more trustworthy sources of information about genetics than the government or commercial companies (Frewer et al., 1999). Alternatively, as Wroe and Salkovskis (2000) suggested, people may become more positive and accepting of genetic technologies when they have been encouraged—or "prompted"—to focus on the positive aspects. It is known that people are more positive towards genetics in the context of treating or preventing disease, and so the focus of the leaflet on "genetic testing" and disease may have positively influenced attitudes. Further studies would be needed to disentangle these possibilities.

A secondary finding in this study was that understanding of genetic testing, and positive attitudes towards genetics generally, were higher amongst respondents with higher educational attainment. But paradoxically, people with higher educational attainment were less likely to express interest in genetic testing than those with less education. In fact this is in line with previous studies which have found that people at the lowest educational levels tend to be the least informed but the most willing to accept routine medical procedures (Press and Browner, 1997). People in the higher education group may pay more attention to, or have better access to, sources of information regarding advances in genetic technology, and so have a more realistic understanding of the limited predictive capabilities of genetic susceptibility testing at the present time. The inclusion of the information leaflet did not reduce the educational differences in understanding in our sample, and a future research priority may be to develop more effective ways of targeting information at different social groups.

A further finding was that there were at least two dimensions to attitudes when measured using a multiple adjective checklist approach. This has additional implications for survey methodologies. Measures of attitudes towards genetics have been criticized by Pardo and Calvo (2002) for being weak and subject to misinterpretation, particularly the attitude statements which are commonly used. In particular, the single dimension produced by attitude statements disallows the possibility of individuals simultaneously holding both positive and negative views. Our factor analysis demonstrated that at the very least people hold these two sets (positive and negative) of views independently of one another, which suggests that attitude scales should be developed which measure at least these two separate constructs.

Unfortunately, it was not possible to determine which aspects of the information leaflet had the most significant effects on attitude in this study, and future studies should address this, for example by varying the content and appearance of the information. It may also be interesting to compare people's responses to different sources of information, such as medical information, self-help group information, and media information. Another obvious limitation of this research was that a self-report measure of understanding of genetic testing was used. We elected not to have a true knowledge test, because of the difficulty in obtaining objective measures of understanding. However, it is important to find out whether these types of simple written information do increase real knowledge or only induce an illusion of understanding, and also whether they are differentially effective in more or less educated groups. Future studies will need to develop more objective measures of understanding, and may also consider examining whether the effects reported here hold over time. Despite these caveats, the findings reported here may be of interest to health professionals and researchers involved in the development of genetic information leaflets, and to those involved in assessing public attitudes towards genetic testing. As far as we are aware, this study is the first to examine the effects of a genetic information leaflet on attitudes towards genetics in a population sample.

In conclusion, the results of this study suggest that including information in genetics surveys has the intended effect of increasing people's perceived understanding of genetic testing, but that there may also be an additional unintended influence on their reported views on genetics and genetic testing. In light of the weight given to public consultation in today's governance and regulation of human genetics, an increase in awareness of how even seemingly neutral information can influence public attitudes may be recommended amongst health professionals, researchers and policy informers.

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Notes

1 http://familydoctor.org/handouts/462.html
2 http://press2.nci.nih.gov/sciencebehind/genetesting/genetesting01.htm
3 http://www.ucl.ac.uk/hbu/studies.html

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