Universitätsklinikum Carl Gustav Carus Dresden
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Attitudes towards genetic testing in a representative sample

Berth H, **Dinkel A**, **Balck F**

Background

Pre- and postnatal genetic testing have become a widely used means for the assessment of individual risk for hereditary diseases. In Germany, virtually no empirical data concerning attitudes towards gene tests have been available, so far. In order to explore the attitudes of the German public, we conducted a survey regarding general attitudes towards genetic testing in a sample representative for the German population.

Method

The sample consists of 2.076 persons representative for the general population in Germany. It was a stratified sample and met age, gender, educational level and rural/urban place of residence quotas (table 1).

Table 1: Population based sample (N=2.076)

Age (in years)	
Mean (SD)	48,08 (17,68)
Range	14 - 95
Sex	
male	978 (47,2 %)
female	1.098 (52,8 %)
Education	
lower	1.716 (82,7 %)
higher (College)	360 (17,3 %)
Religious affiliation	
yes	1.295 (62,3%)
no	781 (37,7 %)

We used a subset of 13 statements out of a larger questionnaire set used in a Finnish survey [1]. The results concerning the single statements are presented elsewhere [2] [3] [4]. A factor analysis of the items yielded three distinct factors (1: approval, 2: disapproval, 3: concerns for genetic testing) [5].

Results

Table 2: Scale scores for approval, disapproval and concerns for genetic testing in different sociodemographic groups (Mean, standard deviation)

Factor	Sex		Age	
	male (n = 978)	female (n = 1.098)	up to 48 (n = 1.076)	49 or higher (n = 1.000)
Approval	0,53 (1,10)	0,39 (1,06)	0,49 (1,05)	0,41 (1,10)
Disapproval	-0,06 (0,95)	-0,01 (0,92)	-0,14 (0,91)	0,07 (0,95)
Concerns	0,45 (1,13)	0,50 (1,08)	0,46 (1,10)	0,50 (1,10)
Factor	**Education**		**Religious affiliation**	
	lower (n = 1.716)	higher (n = 360)	yes (n = 1.295)	no (n = 781)
Approval	0,43 (1,08)	0,58 (1,04)	0,37 (1,09)	0,59 (1,05)
Disapproval	-0,05 (0,93)	-0,20 (0,92)	0,04 (0,93)	-0,17 (0,93)
Concerns	0,47 (1,09)	0,52 (1,14)	0,52 (1,09)	0,41 (1,11)

The ANOVAs (table 3) revealed differences concerning attitudes towards genetic testing between various sociodemographic groups. The clearest differences emerged for religious affiliation. Members of a religious group consistently indicated a less favorable view of gene tests. They showed higher disapproval, lower approval and more concerns.
Subjects who had attained a higher educational level held a positive attitude, i.e. they scored higher on approval and lower on disapproval. Subjects' age generally showed only a minor influence. The gender of the participants had no influence on attitudes towards genetic testing. No significant interactions emerged.

Table 3: ANOVA, F-ratios for main effects (gender, age, education, religious affiliation)

Factor	F-ratios for main effects			
	Gender	Age	Education	Religious affiliation
Approval	1,29	0,04	4,65*	11,35**
Disapproval	0,63	6,81*	8,99**	16,51**
Concerns	0,51	1,43	1,57	6,49*

Note: * $p < 0.05$, ** $p < 0.01$, no significant interactions

Discussion

Similarly to a Finnish general population study, we found influences of sociodemographic characteristics on general acceptance of gene tests [6]. In contrast to the Finnish study we did not find gender influences on general attitudes, and age as well as education had only a minor impact. The Finnish study did not include religious affiliation which emerged as most important characteristic in our study.
Our results highlight the relevance of ethical standards for genetic counseling and the need for cross-cultural research.

References

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Contact

Dr. Hendrik Berth
Universitätsklinikum Carl Gustav Carus
Medizinische Psychologie
Fetscherstr. 74, D-01307 Dresden, Germany
berth@inhaltsanalyse.de, www.medpsy.de