Fundación BBVA

SECOND INTERNATIONAL STUDY ON BIOTECHNOLOGY REPORT

ATTITUDES TOWARDS ASSISTED REPRODUCTION AND PREIMPLANTATION GENETIC DIAGNOSIS

KEY FINDINGS

- Citizens clearly accept the use of in vitro fertilization in the case of couples with fertility problems. In Spain, the mean acceptance score stands at 7.2 on a scale from 0 to 10

- They also express firm support for the application of preimplantation genetic diagnosis in order to select a healthy, compatible embryo that can cure a brother or sister suffering some genetic disease (acceptance score of 7.0 in Spain on a scale from 0 to 10).

According to an international survey by the BBVA Foundation conducted this year, citizens in advanced societies view assisted reproduction techniques in general and in vitro fertilization in particular as firmly acceptable alternatives for people with fertility problems (over 7 points on an acceptance scale from 0 to 10 in twelve of the fifteen survey countries). However, this strong approval for in vitro fertilization dissipates in other scenarios such as using the technique to choose a baby's sex (with scores below 3 points in almost every country).

Citizens also hold contrasting views on the use of preimplantation genetic diagnosis (a genetic test that can be carried out on the embryos obtained from artificial fertilization in order to select those to be implanted in the uterus of the future mother). Its use is widely accepted in all survey countries for the purpose of selecting a healthy, compatible embryo that may help cure a sibling suffering some genetic disease (mean acceptance score of around 6.5 points across the sample of countries, with Spain's score at 7.0 on a scale from 0 to 10). Conversely, its use to choose the sex of a future baby meets with widespread rejection (mean score below 4 points).

The data that follow correspond to the "Second International Study on Biotechnology[1]", by the BBVA Foundation. Information was gathered by surveying a representative population sample in twelve European countries (Germany, Denmark, Spain, France, Ireland, Italy, the Netherlands, Poland, the United Kingdom, Sweden, Austria, and the Czech Republic), the United States, Japan and Israel. 1,500 face-to-face interviews were conducted in each country with subjects aged 18 and over (around 22,500 interviewees in all), with the fieldwork concluding in February 2008. The design and analysis of the survey were the work of the BBVA Foundation's Department of Social Studies and Public Opinion.

[1] The first edition was in 2003

GENERAL ATTITUDES TOWARDS INFERTILITY

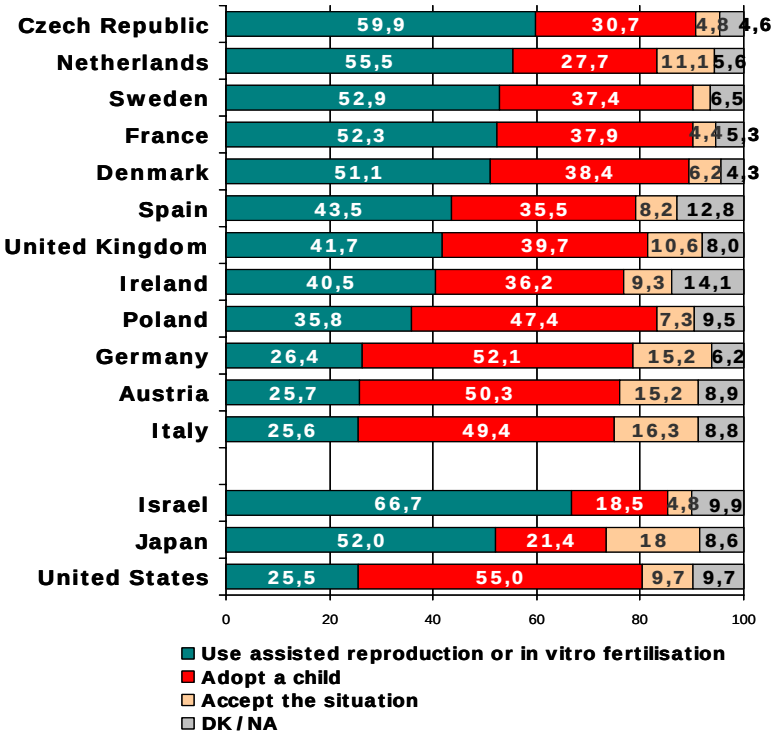
In order to obtain some background for attitudes towards assisted reproductive techniques, interviewees were asked what they thought would be the best option for a couple unable to have children due to problems of fertility: 1) use assisted reproduction or in vitro fertilization techniques, 2) adopt a child, or 3) accept the situation and stay childless.

In all countries, a majority chose either adoption or the use of assisted reproduction techniques, with only a small percentage most in favor of them accepting the situation.

However, we can observe highly significant differences between the countries surveyed as regards the first two options (figure 1):

- Countries where the majority would opt for assisted reproduction in a case of infertility: the Netherlands, Sweden, France, Denmark, Israel, and the Czech Republic. In Spain too, this option was supported by a relative majority
- Countries where a relative majority prefer the adoption route: Germany, Austria, Italy, Poland, and the United States
- Finally, in the United Kingdom and Ireland, opinions are more evenly divided between the two alternatives.

Figure 1: Of the alternatives I am going to read out, which do you think should be taken by a couple wanting children but unable to have them due to problems of fertility? (Base: all interviewees)



THE GOALS PURSUED CONDITION ACCEPTANCE OR OTHERWISE OF IN VITRO FERTILIZATION TECHNIQUES

Citizens' attitudes to in vitro fertilization are keenly differentiated depending on the specific circumstances and the goals pursued (table 2):

- The use of in vitro fertilization finds widespread acceptance in cases of 1) infertility and 2) the avoidance of genetically transmitted diseases (mean above 6 points on an acceptance scale from 0 to 10). The highest mean scores in this respect were observed in the Czech Republic, Sweden, France, Denmark and Israel
- Using the same technique so a woman aged over 45 can get pregnant meets with more divided opinions, though with rejection predominating in most societies. Mean values stood below the midpoint on the scale in all countries except Israel (where acceptance is very high), Japan and Spain, with Denmark, Germany, Austria, France and the Netherlands registering the lowest approval scores
- Finally, the use of in vitro fertilization to choose the sex of a baby provokes outright rejection in all the countries analyzed (mean score below 3 points in every case), with acceptance lowest in Denmark, Sweden, France, the Netherlands and the United Kingdom.

Table 2: Can you now please tell me to what extent you find the use of in vitro fertilization techniques acceptable or unacceptable in each of the following situations? Base: all cases. Mean on a scale from 0 to 10, where 0 means you find it totally unacceptable, and 10 means you find it totally acceptable.

	So that couples with infertility problems can have a child	So that couples with genetic diseases can improve their chances of having a healthy child	So that a woman aged over 45 can get pregnant	So that couples can choose the sex of the child (boy or girl)
Czech Republic	8.7	8.4	4.8	2.9
Sweden	8.4	7.8	3.6	1.0
France	8.1	7.7	3.0	1.3
Denmark	8.0	7.4	2.2	0.9
Netherlands	7.5	6.9	3.0	1.4
Ireland	7.5	7.2	3.7	1.8
United Kingdom	7.3	6.9	3.3	1.5
Spain	7.2	7.3	5.4	3.4
Poland	7.1	7.1	4.2	3.0
Italy	6.4	6.7	4.2	2.6
Germany	6.2	6.3	2.7	1.6
Austria	6.0	6.1	2.9	1.9
Israel	8.2	8.2	6.7	3.5
United States	7.2	6.9	4.6	2.7
Japan	7.0	6.4	5.8	2.9

ATTITUDES TOWARDS PREIMPLANTATION GENETIC DIAGNOSIS

The application of a genetic test to the embryos obtained from artificial fertilization before they are implanted in the uterus of the future mother is another biomedical advance that brings significant medical benefits but is also a focus of moral controversy.

Social attitudes towards preimplantation genetic testing depend strongly on the goal being pursued. Some of its main therapeutic indications – detection of genetically transmitted diseases and, more recently, the selection of a healthy, compatible embryo that can help cure a brother or sister of a genetic disease – deactivate reservations to its use, whereas its possible application in selecting the sex of the future baby activates powerful moral reservations (table 3).

A large majority of citizens are disposed to accept preimplantation genetic diagnosis:

- so a couple with serious genetic diseases can select embryos that do not carry the defective gene (mean scores above 6 points in all cases on a scale from 0 to 10, where 0 means totally unacceptable and 10 totally acceptable)
- so a couple with a child suffering some genetic disease can select embryos that are not affected by the defective gene and conceive a healthy, compatible child that can help cure its brother or sister (mean score likewise exceeding 6 points in almost every country)
- so any couple can detect whether an embryo carries a gene predisposing it to suffer some grave disease in adulthood and, in that case, select the embryos that do not carry this gene (mean acceptance ranging from 5 to 6.5 points in most countries)

Acceptance scores tend to be highest in all three cases in France, Sweden, the Czech Republic, Israel, and Spain.

The use of this application to select the baby's sex meets with the opposite response. Mean acceptance scores were below 4 points in all survey countries and extremely low (equal to or below 2 points) in Denmark, Sweden, the Netherlands and France.

Table 3: It is possible today to apply a genetic test to embryos obtained through artificial fertilization. The results of this test enable the selection of embryos for implanting in the uterus of the mother-to-be, implanting some and discarding others. I would like you to tell me to what extent you find applying this genetic test to embryos obtained through artificial fertilization acceptable or unacceptable in each of the following situations. Mean on a scale from 0 to 10, where 0 means you find it totally unacceptable, and 10 means you find it totally acceptable

	So a couple with serious genetic diseases can select the embryos that do not carry the defective gene	So a couple with a child suffering some genetic disease can select embryos that are not affected by the defective gene and conceive a healthy, compatible child that can help cure its brother or sister	So any couple can detect whether an embryo carries a gene predisposing it to suffer some grave disease in adulthood and, in that case, select the embryos that do not carry this gene	So a couple can choose an embryo of the sex they want (that is, a boy or a girl)
Czech Rep.	7.9	7.5	7.2	3.9
Denmark	7.5	6.4	6.1	1.6
Sweden	7.5	7.3	6.5	1.6
France	7.3	7.1	7.0	2.0
Spain	6.9	7.0	6.6	3.7
United Kingdom	6.8	6.2	6.3	2.0
Poland	6.6	6.4	5.9	3.8
Germany	6.4	5.8	5.5	2.1
Italy	6.4	6.1	5.9	2.9
Ireland	6.4	6.1	5.9	2.6
Netherlands	6.3	6.2	5.5	2.0
Austria	6.0	5.3	5.2	2.3
Israel	7.3	7.4	7.3	3.8
United States	6.7	6.2	6.0	3.2
Japan	5.9	5.5	5.3	3.3

USING SPERM BANKS GETS APPROVAL IN THE CASE OF COUPLES WHERE THE MALE IS INFERTILE

Finally, acceptance of the use of sperm banks to conceive a child by assisted reproduction techniques is also clearly influenced by the goal pursued (table 4):

- In all countries, a majority see using a sperm bank as acceptable in the case of couples wanting a child where the man is infertile. Acceptance scores are highest in Denmark, Sweden, and the Czech Republic.
- Conversely, the use of sperm banks to select a father who is particularly intelligent meets with widespread rejection. Within this general climate of disapproval, opinions are most hostile in France and Sweden
- The following scenarios register medium acceptance scores:
    - In the case of women without a partner wishing to have a child, average acceptance exceeds the midpoint on the scale (5) in 7 out of the 15 countries, and stands below it in the rest. The most favorable opinions are expressed in the Czech Republic, Spain, and Israel, and the most unfavorable in Japan, Austria, Italy, and the United Kingdom
    - With the exception of Denmark, the Netherlands, and Spain, average acceptance of the use of sperm banks by gay or lesbian couples is below the midpoint on the scale in all countries. The firmest rejection is expressed in Poland (1.1), Italy (2.4), Austria (2.9) and Japan (3.0).

Table 4: To what extent do you find the use of sperm donor banks acceptable or unacceptable in each of the following situations? Mean on a scale from 0 to 10, where 0 means it is totally unacceptable, and 10 that it is totally acceptable.

	Couples in which the man is infertile and who want to have a child	Women without a partner who want to have a child	Gay or lesbian couples who want to have a child	To choose a father who is particularly intelligent
Czech Republic	8.3	6.6	3.6	3.2
Denmark	8.1	5.2	5.2	1.7
Sweden	8.0	5.1	4.8	1.2
France	7.3	4.4	3.2	1.0
Spain	6.9	6.2	5.0	3.0
Netherlands	6.9	5.3	5.4	1.7
Ireland	6.7	4.6	3.6	1.9
United Kingdom	6.5	3.7	3.4	1.9
Poland	6.4	4.8	1.1	2.5
Germany	6.2	4.3	3.2	1.8
Italy	5.6	3.8	2.4	2.2
Austria	5.5	3.7	2.9	2.1
Israel	7.1	5.9	4.1	2.9
United States	7.1	5.1	3.7	3.1
Japan	5.3	3.1	3.0	1.9

TECHNICAL NOTES

Universe: in each country, the general population aged 18 and over.

Methods: administered face-to-face survey in the interviewee's home.

Sample size and distribution: 1,500 cases in each of the 15 countries. Multistage sample distribution stratified by region (NUTS classification or equivalent)/size of habitat, with primary units selected at random. Selection of individual respondents by the last birthday rule.

Sampling error: the sampling error estimated is ±2.6%, for a confidence level of 95.5% and in the worst-case scenario (p=q=0.5).

The survey was coordinated by TNS opinion. The fieldwork concluded in February 2008.