Chinese Scientists' Attitudes about Consent Policy Related to Human Genetic Databases

İNSAN GENETİK VERİ TABANI İLE İLGİLİ ONAM POLİTİKASI HAKKINDA ÇİNLİ BİLİM ADAMLARININ TUTUMLARI

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Abstract

This article focuses on the attitudes and perceptions of Chinese genetic scientists regarded to consent issues in the process of creation of genetic databases. In China, plans are being put in place for collecting, and using human genetic samples, while there is no clear consent policy at the national level. Little knowledge is available for a nationwide mail surveys was conducted in Shanghai, Beijing and other human genetic bases in China. A total of 300 Chinese scientists and Ethical Review Committees (ERBs) members sent back the valid questionnaires, with a response rate of 77%. The survey shows that the creation of genetic databases has been surrounded by controversy and debate about consent forms among Chinese biomedical community. Of the participants, 47.1% agree with family consent, 51.2% disagree with it, until 2.7% had no idea in banking of genetic samples. Among those proponents, the majority (82%) argue that: As the genetic information maybe share by the whole family, family members have the right to make the decision. Among those opponents, 69% insist that: a donor has the right of autonomy. The author suggests that the family-assisted individual consent may be an appropriate alternative. Proper measures should be taken to improve the quality of informed consent process in the Chinese context of genetic donation.

Key Words: Informed consent, family consent, genetic database, China

Özet

Bu makale, genetik veritabanı oluşturma sürecinde onam sorunları ile ilgili olarak Çinli genetik bilim adamlarının tutum ve anlayışları üzerine odaklıdır. Çin'de ulusal düzeyde bir onam politikası yokken tasarılar insan genetik veritabanı oluşturma ve kullanma üzerine kuruludur. Şangay, Pekin ve diğer insan genetik merkezlerinde posta yolu ile araştırma yapıldı. Toplam 300 Çinli bilim adamı ve Etik Değerlendirme Kurulları üyeleri %77 yanıtlama oranı ile anketleri geri gönderdiler. Çalışma, genetik veritabanı oluşturulmasında Çinli biyomedikal topluluk içerisinde onam formları hakkında ihtilaf ve tartışma olduğunu gösterdi. Katılımcıların %2.7'sinin genetik örneklem bankacılığı hakkında hiçbir fikri yokken %47'si aile onamını kabul etmekte, %51.2'si ise kabul etmemektedir. Aile onamını savunanlar arasında çoğunluk (%82), genetik bilginin tüm aile ile paylaşılabileceğini, aile üyelerinin karar verme hakkı olduğunu tartışmaktadır. Karşı görüşte olanlar arasında %69'u vericinin özerklik hakkı olduğunda ısrar etmektedir. Yazar, aile yardımlı bireysel onamın uygun bir alternatif olabileceğini önermektedir. Çin'de genetik bağış bağlamında aydınlatılmış onam sürecini geliştirmede uygun ölçümler yapılmalıdır.

Anahtar Kelimeler: Aydınlatılmış onam, aile onamı, genetik veritabanı, Çin

Turkiye Klinikleri J Med Ethics 2007, 15:63-68

Since the late 1990s, the rapidly increasing databases established to collect, process, use, and store human genetic samples have confronted great challenges, reflected in the sustained and intense international debate. As to catch up with the latest developments in this highly competitive field, China's Ministry of Science and Technology (MoST) established her National Human Genome Research Centers located to Beijing and Shanghai in 1998. These two national centers have announced the establishment of several databases focusing on common diseases such as hypertension.[1] For instance, the database for Genomic Polymorphism of Chinese Ethnic Groups (GPCEG) contains denomination and basic information, such as data of genomic polymorphism, cell lines, reference, of Chinese 56 ethnic groups.[2]

Geliş Tarihi/*Received:* 01.05.2007 **Kabul Tarihi/*Accepted:*** 06.06.2007

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More and more projects related to create genetic biobanks of the population have drawn national attention. In 1998, Ministry of Science and Technology (MoST) and Ministry of Public Health (MoH) issued Interim Measures for the Administration of Human Genetic Resources. However, there are no national ethical guidelines on the consent issues developed in both of those two leader centers, not mentioned on the national level. Praised by some and criticized by others, these innovative research initiatives raise complex ethical issues, which need to be identified and thoroughly discussed by all stakeholders. Obviously, there is obviously unbalance between the rapid increase of genetic data collecting and usage and the ignoring of ethical guidelines and regulation, especially in the aspect of consent issues.

In the international debate, probably the single debated issue in relation to genetic databases is that of consent. Actually, China confront similar situation in conduct of clinical trials, even some famous Chinese physician/investigator just informed human subjects that it is a kind of innovative therapy rather than a kind of research.[3] Compared to the increasing growth of creation of genetic databases, few publication or open discussions were available concerning the consent issues in China, while it has been warmly discussed in the international society. In the context of genetic databases a number of specific issues have arisen that has led to a renewed debate about the limits of current consent models and whether new, different notions of consent need to be considered. For instance, In the Icelandic Health Sector Database presumed consent is voiced in the process of genetic sample collection.[4] In others such as UK BioBank, individual consent is clearly required. We hope to know: What are the Chinese scientists and ERC members' opinion and attitudes about those consent issues arising with developing genetic databases? What proper interventions and strategies does the research community think are best to avoid the ethical constraints?

This paper is part of our final finding in a survey project: Chinese scientists' attitude about the ethical issues in the establishment of human genetic databases. First, we will summarize the chrematistics about the survey sample.[5] A survey was conducted in July-October, 2005 to examine if the Chinese research communities identified the fundamental ethical issues that have been heatedly discussed over years in the international level, To conduct the survey, we focus on the institutions and afflicted hospitals relevant to National Human Genome Research Centers (Beijing and Shanghai) and other about ten provincial genetic centers. Within those sampling institutes and/hospitals above, we sought eligible respondents with particular criteria. The inclusion criteria are as follows: 1) Principal Investigators (PIs) and their research team involved in research with human genetic samples and/or data; 2) ERC members who belonged to the same institutions. A total number of 300 out of 390 valid questionnaires was send back. The response rate is 77%. The anonymous questionnaire included a section on socio-demographic data, followed by questions on ethical issues. The respondents included 166 males and 134 females 52.4% were between 31and 50. 29% came from Beijing; 37.1% from Shanghai, others from medical institutions and hospitals in other provinces. 37.8% had studied or worked abroad. 64% of them held Ph.D.s or Master Degrees. The majority of them majored in the field of biomedicine. In the sampling population, 74% used human genetic samples directly in their work, and 55% collected samples by themselves. 53% claimed that they have been involved in databases more than one year. 15% said they had reviewed protocols related with genetic data collection and usage, respondents who are not ERB numbers but reviewed the protocols as well. Usually those people were engaged in Scientific Administration Offices and/or Department of medical affairs

As for the attitude of ethical issues in general, 53% say they have thought over the ethical issues in the process of establishing databases. 31% say it is urgent to identify and solve these issues; 12% say it was little to do with their current research; the other 4% it is unnecessary to talk about ethical issues now. 54.7% of them did not participate in any kind of research ethics training courses; 34%

took part in short time workshops; 11.3 % had studied research ethics systematically. What's more, in general our respondents know little about the international ethical discussion More than half of respondents (55.3%) reported that they paid no attention to the ethical debates in Iceland, UK, Estonia, and Tonga. About one fifth of respondents (20.4%) reported that they had an idea about the ethical debate in Iceland. 32.4% knew about the UK BioBank.

1. Attitudes About Consent Policy

1.1 Different forms of consent

Following the Nuremberg Code and Helsinki Declaration, individual informed consent is thought as a well-known principle of biomedical research at international level. However, it became a complex situation when population genetic research is concerned. The individual and collective characteristics of genetic information provides on a totally new dimension in the context of large genetic sample collecting and usage. The requirement of individual consent may not be absolute, while family or community consent may be reasonable and appropriate in many cases. In UK BioBank individual written informed consent is required for participation, while in Icelandic Healthcare Database the Act on Biobank allows the use of clinical medical samples for research by opt-out approach.[6]

What are the attitudes of the sampling population related to different forms of consent in the process of DNA data banking in China? (See Table 1). For example, if donors from rural areas are not used to signature, could oral consent be a proper choice? In the survey, 69% disagreed that oral informed consent could take place of a written consent. 35% disagree that it is acceptable to use finger print instead of personal signature. Although family consent is assumed to be popular in Chinese research setting, only 24% think it is appropriate, 56% disagree with it, and 20% could not make no choice. We will discuss it in detail later. The result also indicates that a lot of respondents had no idea about the variety of consent forms.

Table 1. Attitudes about different consent forms.

Case: Do you agree with the following statement?	agree	Disagree	no idea
a oral consent could take place of written one	20%	69%	11%
b finger print could take place of personal signature	50%	35%	15%
c family consent could take place of donor's individual consent	24%	56%	20%

In fact, informed consent is quite a new conception in China. Stakeholders hold a variety of version of consent forms. The survey result reflects the true situation. What's more, our current regulations even provide several alternatives about consent policy. There has been a long period during which investigators only obtained oral informed consent from subjects before 1990s. Since the late 1990s, the health authorities began to take measures to protect subjects'. In 1998, MoH issues the Procedures for Ethical Review of Human Biomedical Research, One year later, China's State Food and Drug Agency carried out its own version of Good Clinical Practice (GCP) , which is formulated to ensure the clinical trial process standardized, and the rights, benefits and safety of trial subjects protected.[7] Although the written individual informed consent in biomedical research is required, Chinese GCP also considers different forms of consent which may be valid in different situation: In general, the informed consent form should be signed and dated by the subject or subject's legally acceptable representative. When both the subject and his/her legally acceptable representative are incapable to read, oral consent is permitted provided that a witness is present and sign the consent form. Since the outspread of GCP, individual consent has been applied and promoted from pioneer institutes to others. Even so, family consent still is a popular alternative such a socialist society deeply influenced by Confucian thought.

1.2 "Right to know" vs. " Right to not know"

Unlike the Estonian Genome Project, in the UK BioBank, the voluntary donors will not have the right to receive personal feedback on the genetic information derived from samples. Do Chi-

nese donors have the right to know the result? Or in what situation should investigators disclose the research results to donors, even if it is difficult for many of them to understand the complex meanings of those scientific results? The following question is supposed to identify the respondents' attitude about the donors' right to know (Table 2).

Given the obvious difference in the choice among the respondents, there may be different options in distributing the research findings in the consent form. Consent forms should present donors with the choice to obtain the final result in certain circumstances. Those conditions may include: 1) the findings are scientifically valid and confirmed; 2) the findings have significant implications for the subject's health concerns; 3) a course of action to ameliorate or treat these concerns is readily available, as suggested by NBAC in 1999[8] The donors may choose to waive the right to be informed as they exercise preference for a right not to know the results of research done with the use of their DNA sample.

1.3 Re-consent issues

Actually it is very difficult to fully informed donors when the future uses of DNA samples\data are unknown. In Tonga, a choice was offered to the participants to consent to the use of their samples and data for multiple research projects or for a defined few.[9] In the UK, according to the protocol, consent will be asked for various analyses, for specified and unspecified biochemical and genetic tests, and for permission to contact participants again at a later date.[10] While in China, the current regulations, such as Interim Measures for the Administration of Human Genetic Resources, say nothing about re-consent. Therefore, we hope to know the attitude of Chinese scientists about re-consent issues, especially in the context of genetic data collecting, storage and usage.

In our survey, when we ask the question: whether the DNA samples collected for a particular purpose could be used for other future research without the donor's re-consent, even if the samples is identifiable? 59.7% gave a positive answer even if researcher could connect with the original donors, while 32.7% gave a negative answer, 7.7% had no idea. It indicates that the majority of the respondents do not think it is necessary to reaffirm every time a significant change to the protocol or to the banking conditions occurs. The result, in our opinion, does not mean that the question of re-consent has not been controversial. Regarding the different attitudes about re-consent, Chinese policy makers, ERC members and project applicants may be better to provide donors with necessary consent options. It would allow the donors to specify types and conditions of future research for which their samples may be used. For example, whether the samples are coded or not, at least there should be a simple yes/no options for donors.

1.4 Arguments for and against of family consent

HUGO claims that informed consent can be individual, familial, or at the level of communities and populations."[11] Traditionally, Chinese health authorities support this idea of family consent in health practice. In Chinese situation, family consent plays a key role in clinical practice. The possible rationale is that the family itself is a research subject and could be better represent the benefit of donor by collective decision. Although consent must be sought regarding culturally appropriate authorities within the family, there are problems about family consent: Who give consent on behalf of the family? How about the different opinion among family members? We wonder what genetic scientists think about family consent in the establishment of genetic databanks.

Table 2. The respondents' attitudes about right to know.

Case: Should inform donors with the result which contains important therapeutic information?	Agree	Disagree	No idea
a fully inform the result, unless the donor himself gives up the right	51%	25%	24%
b Inform the fundamental finding, unless the donor gives up the right.	22%	46%	19%
c Unnecessarily inform the result, unless the donor required.	45%	37%	18%

We asked the question: In the process of genetic research, involving the collection of the donor family's unique genealogical data, do you think that it is necessary to get family's consent rather than the donor makes his/her own choice? 51.2% gave a negative answer, 47.1% give a positive one, still 2.7% had no idea. The survey indicates that the sampling population did not hold a consensus on family consent. The result reflects the potential tension between family decision and individual autonomy. We list the major reasons for and against family consent, and the respondents provide a variety of choices.(see Table 3 and Table 4)

On the issue of disagreement between donors and other family members, investigators should obtain a mutual decision between donors and family members. If the potential donor's opinion conflicts with the family, the investigators may choose to give up for fear of interfering with this family affair. If the preservation of family harmony was more valued, investigators should respect family's decision in the research site.[12] This argument reflects a fact that: In a Confucian community with paternalistic tradition in medicine individual autonomy is easily not paid attention to. Should donors be required-or at least encouraged to obtain permission/assent from their family members? The answer may depend on whether results are anticipated that might be returned to respondents and family members. In my view, although it is helpful to make a more reasonable and seriously decision with the help of family member, individual preference should still be seriously considered, and incorporated into family decision.

Table 3. Argument for family consent.

The major reasons for family consent are:(multi-choice)	Percentage
a As the genetic information maybe share by the whole family, family members have the right to make the decision	82%
b A family-based collective decision may better protect human subjects	45%
c It is a way to show respect to the family	44%
d It is a tradition of making decisions together with other family members	21%

Table 4. Augment against family consent.

The major reasons against family consent are:(multi-choice)	Percentage
a Individual research participants have the right of autonomy	69%
b One's donation of genetic sample may not necessarily harm other family members	26%
c Individual decision is a way to avoid of the unnecessary disagreements among family members	19%
d It is no use to discuss with the family members	3%

Conclusion

The data obtained from questionnaires will contribute to draw a few preliminary conclusions on informed consent issues raised by the creation of genetic databases in China, which has scarce examines seriously in the creation of human genetic databases .As far as different forms of consent were concerned, family consent may not take place of individual informed consent according to the survey. Although obtaining individual consent to collect and store DNA samples and personal data in a population database is better to respect a donor's autonomy, it is possible to inform and consult the family and to consider family opinion in many cases. We suggest that the family-assisted individual consent may be an appropriate alternative. Further reflection should be carried out to improve the quality of informed consent process. In future discussion for the national guideline, the informed consent issues should be addressed seriously for fear of protecting benefits of sample donors.

Acknowledgements

This paper is part of the final result of a research project funded by the Program on Ethical Issues in International Health of Harvard School of Public Health led by Dr. Richard Cash. I would like to thank Prof. Daniel Wikler, Prof. Qiu renzong and Prof. Gail Henderson for providing valuable advice, insights and comments at various stages in the life of this paper.

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