

Attitudes toward the ethics of paying subjects for risky experiments

Jonathan Baron*
University of Pennsylvania

David Casarett
Institute on Ageing
University of Pennsylvania

Jason Karlawish
Alzheimers Disease Center
University of Pennsylvania

David Asch
Leonard Davis Institute
University of Pennsylvania

2002

Abstract

From a simple utilitarian and economic point of view, it is quite reasonable to pay research subjects to undergo risks. Almost all clinical trials, and many medical experiments, involve some risk that a subject would be worse off as a result of entering the study, compared to what would happen outside of it.

The normative theory of expected utility (Baron, 2000) implies that this risk of harm can be counteracted either by a chance of sufficient benefit or by the certainty of benefit. Thus, it would be rational to take a risk of harm if there were also a prospect of a better cure for some condition for the subject (or for others, if the subject is altruistic and thus gains utility from helping others), or if the pay were sufficient. Sufficient pay would mean that the expected utility of the money (which may itself depend on the subject's medical condition) is higher than the expected disutility of the health effects of participation. Moreover, if an experiment is in a person's rational self-interest, then it could hardly be wrong to offer the experiment to the person.

Of course, a complete utilitarian analysis requires a more thorough consideration of consequences. For example, if we knew that money as an inducement had a peculiar power to make people irrational and to ignore the risks, then we would want to limit the use of payment. By "peculiar power," we mean that it must behave differently from other benefits, such as the possibility of a better cure or the possibility of helping others. The empirical literature, we note, says nothing about this. Although it is true that people are often irrational in denying evidence against a preliminary choice (Baron, 2000), we have no reason to think that money would be special in creating such irrationality.

There are other utilitarian advantages and disadvantages of using payments. On the negative side, high payment could lead to unrepresentative samples. On the positive side, studies could be completed more quickly. Also, researchers would be less tempted to downplay the risks. Indeed, subjects probably take payment as a signal of the magnitude of the true risk, so that payment could become a form of communication.

*This work was supported by National Science Foundation Grant SES 9876469. Send correspondence to Jonathan Baron, Department of Psychology, University of Pennsylvania, 3815 Walnut St., Philadelphia, PA 19104-6196, or (e-mail) baron@psych.upenn.edu.

Current policy gives money a special status, unlike other benefits of participation in research. The Belmont Report (National Commission, 1979), intended to serve as the background for the treatment of human subjects, explicitly rejects causing harm in order to bring benefit to others, and it insinuates that excessive payment cannot undo such harm:

The Hippocratic maxim “do no harm” has long been a fundamental principle of medical ethics. Claude Bernard extended it to the realm of research, saying that one should not injure one person regardless of the benefits that might come to others. . . .

Coercion occurs when an overt threat of harm is intentionally presented by one person to another in order to obtain compliance. Undue influence, by contrast, occurs through an offer of an excessive, unwarranted, inappropriate or improper reward or other overture in order to obtain compliance.

The IRB Guidebook (Office for Human Research Protections, 1993) is more explicit, drawing the line specifically against the idea of count payment as something that might counteract the risk of harm:

Direct payments or other forms of remuneration offered to potential subjects as an incentive or reward for participation should not be considered a “benefit” to be gained from research. Although participation in research may be a personally rewarding activity or a humanitarian contribution, these subjective benefits should not enter into the IRB’s analysis of benefits and risks.

Clear cases of coercion (i.e., actual threats) are readily identifiable; it is more difficult to recognize undue inducement. An offer one could not refuse is essentially coercive (or “undue”). Undue inducements may be troublesome because: (1) offers that are too attractive may blind prospective subjects to the risks or impair their ability to exercise proper judgment; and (2) they may prompt subjects to lie or conceal information that, if known, would disqualify them from enrolling — or continuing — as participants in a research project.

IRB members tend to approach the problem of assuming risk for pay from one of two positions. One side argues that normal healthy volunteers are able to exercise free choice, and that, since judging the acceptability of risk and weighing the benefits is a personal matter, IRBs should refrain from imposing their own views on potential subjects. On this view, IRB responsibility should be confined to ensuring that consent is properly informed. Other IRB members argue that the IRB should protect potential subjects from inducements that may affect their ability to make an informed, voluntary choice.

The present series of studies seek to determine the nature of attitudes toward the use of payment. Why do people think that paying subjects is coercive? What is special about money?

A possible explanation of the opposition to payment is that people think that free choice implies that some people will choose one way and some the other. If everyone is coerced, then few will resist and everyone will make the same choice. Thus, coercion implies near unanimity. Although the reverse is not implied, people may use unanimity as a sign of coercion. They may think that choice is not free when payment is so great that everyone takes it.

By contrast, a utilitarian view of coercion would compare alternatives and consider the benefits as well as the costs. A utilitarian might call an experiment coercive when an alternative policy could increase overall utility, either by giving more payment to everyone or by reducing risks (without reducing benefits too much).

Experiment 1

The first experiment consisted of two open-ended questionnaires placed on the World Wide Web. Both were linked to the web page of the University of Pennsylvania Center for Bioethics. The second was also open to others who completed questionnaires for the first author. The purpose of these was to look for the sort of reasons that people cited to oppose payment.

Method

The first questionnaire was done by 21 subjects, who found it through the Center for Bioethics web page: 48% were female; 57% were associated with bioethics through their work, either as practitioners or Institutional Review Board members; their ages ranged from 16 to 63 (median 30).

Paying subjects

In the last few years, drug companies and others who study medical innovations have had a hard time finding research subjects for clinical trials of new drugs, devices, and procedures. It might be easier if the subjects were offered money as an incentive. Recently, articles in the New York Times have documented the use of monetary incentives for doctors to enroll patients in clinical trials. Why not pay the subjects instead of the doctors?

Institutional Review Boards have been known to question the use of high payment for subjects. Some members of the Boards think that high payments are unethical.

What do you think? Should Institutional Review Boards allow researchers to pay whatever they want? Or should there be limits? Explain your answer. [Eight lines were provided for each answer.]

Why might someone think it is unethical to pay subjects too much? If you already answered this, say so. If you can think of answers to this that you disagree with, say that too.

Two other questions probed further, but their answers turned out to be largely redundant. Subjects were asked their age, gender, occupation and how they were involved with bioethics.

The second questionnaire was completed by 56 subjects, who 27% male, 66% found the study from the Bioethics Center web page, 20% were professionally involved with bioethics. Their ages ranging from 14 to 56 (median 31.5). The questionnaire probed one of the arguments made by subjects in the first questionnaire, that the poor will be forced to sign up. The probe questions were directed at those who opposed payment; subjects were not asked for reasons against payment if they supported payment. It read as follows:

Paying subjects

In the last few years, drug companies and others who study medical innovations have had a hard time finding research subjects for clinical trials of new drugs, devices, and procedures. It might be easier if the subjects were offered money as an incentive.

Institutional Review Boards have been known to question the use of high payment for subjects. Some members of the Boards think that high payments will encourage poor people to sign up for risky studies.

What do you think? Should high monetary payments be allowed? Or should they be prevented because they encourage poor people to take risks? Explain your answer.

If someone takes a risk in return for money, the person thinks that the risk is worth taking. Is such a judgment usually wrong? Sometimes wrong? Why?

Should people be prevented from taking other risks in return for money, such as financial risks in return for investing, or physical risks of certain jobs like police work or firefighting? Explain.

If people shouldn't take risks in return for money, is there ever a good reason to take risks? Should people ever be allowed to take risks of participation in research?

Results

48% of the subjects in the first questionnaire thought payment was completely appropriate, for example, "Given that some studies entail risk to volunteers, I think it absolutely appropriate that researchers be allowed to pay subjects. A test several years ago ended in a number of deaths due to liver disease. A number of drugs in the offing are likely to be significantly risky. If we are to ask volunteers to potentially sacrifice their lives for science, I think it incumbent upon researchers to do what they can for the volunteers financially."

The reasons given for opposing payment did not differ as a function of attitude. (We asked for reasons even if the subject supported payment.) 33% mentioned pressure or violation of autonomy directly. For example: "I believe [payment] turns personal autonomy into a commodity. It can be a form of inducement which has the potential to coerce (in a subtle fashion) potential subjects into participating. There are individuals who cannot subsist on their own and, in fact, might be forced to participate in a study if the compensation is high enough, only to maintain basic living necessities." "Payment only plays on the worst in people — greed, lust, desire. Continue on in an altruistic, volunteerism spirit is the best. Per Kant, we must never treat people as means only. Offering money as incentive plays on peoples base needs and will only enhance us 'using' those who are desperate and in need. Again we pit the haves against the have nots. Offering the starving man food to help you out would not constitute a free and informed consent!" "If very high monetary rewards are allowed to be used as an incentive for participants in studies, they may be thrust into unsafe experiments with hopes of monetary reward."

38% of the subjects who opposed payment gave reasons concerned with side effect rather than pressure or violation of autonomy, for example: "The subjects might just give made-up answers and be taking advantage of survey takers." "High pay to doctors or patients seems to bring about fraudulent results." "Poor or uneducated people will be more likely to volunteer and this will slant the results." "Creating a class of humans which are research slaves would be a bad thing."

One subject (who favored payment) gave a Kantian argument against it, dealing with motivation: "Someone might think it is unethical to pay subjects too much for drug testing because they believe it should all be done in the name of science, or that people shouldn't do these supposedly harmful things to their own bodies for money. The people against this might also think it is more of a bribe to try out the drug, rather than doing it to help someone and to advance science."

In the second questionnaire 75% supported payment, and there were no differences as a function of age, sex, whether the subjects came from the Bioethics Center web page, and whether the subject was professionally involved with bioethics. These subjects typically gave reasons concerned with freedom of choice, for example: "Poor people are still people, they have the right to make their own decisions. If they decided to participate in these events instead of getting a job

or working toward a better job, it is their choice.” “I hope that nobody in our society is so hungry and homeless (barring that caused by insanity), but even in that case, I don’t think the offer of money is holding a gun to their heads — an offer to, in effect, remove the gun for a while in exchange for taking a justified (above) risk, is not unethical.”

Many subjects who approved of payment mentioned other concerns such as whether the subjects were properly informed or whether the risks were justified at all, for example, “I think that monetary payments are acceptable. If the study is not a risky one, then there’s no problem with poor people taking part (obvious I think), and if the study is risky, then there might be ethical problems with performing the study in the first place. But I’m not sure that monetary payments have anything to do with that.”

Of the 14 subjects who opposed payment, 10 gave as their reason that subjects might be ignorant of the risks, for example: “Sometimes it can be wrong because a person might not know every single risk involved. Or the researcher, or institution, might hide some of the risks because they feel it will jeopardize the research question.” “Lower income, most probably ethnic minorities, would be more likely to utilize this sort of income without fully assessing the risks involved.” “I participated in a misleading cold study in college where I was not informed that the drug had not been tested on humans until the day I actually showed up at the hotel to start the program.”

Other justifications were that only poor people would do the study (e.g., “High payment may also discourage possible test subjects who don’t necessarily need the money. They may also be educated enough to know that a high paying study is risky and they will have other means of earning money.”) and (for one response) that payment might be coercive: “It will add incentives for dishonesty and coercion into an already trying system.”

Of the 14 opponents of payment, 11 did not challenge the arguments in the rest of the questionnaire (and often agreed with them in general), and they did not mention any contradiction between these arguments and their opinion. Some, however, reiterated their position without answering the implicit objections, e.g., “People should only be allowed to take risks in participating researches when they volunteer and not because of something that they need in order to survive.” “It should be up to that person after they research the company and make their own decisions, but I don’t feel that there should be a high price-tag on research.”

Three subjects answered the probe question about other risks such as firefighting by making some distinction between that case and the case of research: “This kind of risk is known, and is an integral part of the job.” “Jobs like firefighter and police officer are necessary to the community and people who are able to perform these jobs are able to perform other jobs (like construction, waiter, etc) equally well.” “It is the reason for taking the risk that determines if the risk is acceptable.”

Experiment 2

We manipulated five factors within subjects:

Pain severity of the pain without medication

Current severity with the current medication

Duration duration of the experiment

Others number of other people who would benefit

Risk chance of death from the experiment

Each factor had two levels, so there were 32 conditions. Each subject did all 32 in a different random order.

Higher Pain would result in greater loss from being in the control condition. Others would affect the altruistic benefits from participation. And Risk would affect the attractiveness of participation.

Method

Sixty-three subjects completed a questionnaire on the World Wide Web. (An additional subject, an outlier, was eliminated for reasons to be describes.) The subjects found the questionnaire because of previous postings to newsgroups for other studies and links from various frequently visited web pages. Ages ranged from 18 to 65 (median 29). The subjects were 73% females and 35% students.

The questionnaire began:

Compensation for pain experiments

This study is about compensation for experiments. They all involve experimental drugs for the treatment of chronic pain. Imagine that you have a chronic pain condition. The pain comes and goes. When it is present, it is incapacitating. You cannot work, sleep, or enjoy anything. No other health effects are associated with this pain.

Drugs are available to treat the pain. They reduce the amount of time that you have to live with the pain. You are taking one of these drugs. Imagine that you are asked to participate in an experiment to evaluate a new drug. Subjects in this experiment are assigned randomly to one of two conditions. You either get the new drug or no drug. This is the most efficient way to evaluate the new drug.

If you are in the no-drug condition, you will have more pain. If you are in the new-drug condition, you will probably have less pain. The new-drug could remove all the pain, or none of it, or anywhere in between. The best guess is that the new drug will cut your pain in half.

You can be compensated in one of two ways. First, you can be paid in dollars. Second, you can be paid with free pain medicine, after the experiment is over. You will get the new medicine, because it is sure to be at least as good as the old medicine (although it might be no better). Without this compensation, you must pay for this medicine yourself. You have used up your insurance coverage for this kind of medicine.

The compensation comes from the researchers, not from the drug company. If they compensate you with free medicine, they must buy it at the same price that you would have to pay for it.

You will read a number of cases. The cases will differ in the following factors:

- Hours per day that you would suffer from pain, without taking any medicine (4 or 12 hours).
- Hours of pain per day *with* the old medicine (1 to 9 hours)
- Duration of the experiment in weeks (2 or 12 weeks).

- The number of other people who might benefit from the drug (1000 or 10000 people).
- The chance of death from participation in the experiment (0, or 1 in 1000 chance).

In each case, you will make several judgments, including how much you would require in cash or free medicine in order to participate, how much would be required to induce 99% of the eligible patients to participate, and how ethical this payment would be. Please just do your best at these questions.

Each item consisted of a table like the following. All possible combinations of the five variables appeared in a random order. (There was an error for the Pain variable so that one item was ignored.) The two values of Current (hours with current medication) were based on the value of Pain (hours without medication): Pain/4 vs. Pain/4 + Pain/2.

Hours per day that you would suffer from pain, if the medicine you took were ineffective.	4
Hours of pain per day with the old medicine. Note: The best guess is that the new medicine will cut this in half.	1
Duration of the experiment in weeks.	2
The number of other people who might benefit from the new drug.	1000
The chance of death from participation in the experiment.	no risk
What is the smallest amount you would accept in cash? (0 means you would participate for nothing. -1 means you would not do it for any amount.)	\$ <input type="text"/>
What is smallest amount you would accept in free medicine.	\$ <input type="text"/>
How high would the cash payment have to be in order to induce 99% of the patients to participate? (Use -1 to indicate that no amount is enough to do this.)	\$ <input type="text"/>
Which is more ethical for this kind of study? (Answer 1-9.) 1=cash is much more ethical, 5=same, 9=free medicine is much more ethical.	<input type="text"/>
If enough cash were offered so that 99% would participate, how ethical would this be? (0 = not ethical at all, 9 = completely ethical)	<input type="text"/>
If enough cash were offered so that 99participate, how much freedom of choice would each patient have about whether to participate? (0 = no freedom at all, 9 = complete freedom)	<input type="text"/>

At the end of the questionnaire, the subject answered two additional questions (and provided name, address, etc., for payment). We call these “FreeWill” and “InKind”.

Please indicate your agreement or disagreement with the following statements (1=strongly disagree, 5=neutral or conflicted, 9=strongly agree):

If you offer someone a lot of money to take a risk, and the person takes the risk, then the person’s behavior is less controlled by free will than if the person did it for less money. (Answer 1-9.)

It is better to compensate people with free drugs than with the equivalent amount of money. (Answer 1-9.)

Results

Some subjects thought that too much compensation was unethical and removed autonomy. The critical questions were those about whether it was ethical to offer enough cash so that 99% would participate (Ethics), and whether this removed choice (Choice). These 1–9 responses were sensitive to the variables manipulated (as we shall discuss), but not very sensitive. Individual differences were by far the largest determinant, accounting for 74% of the total variance in the Ethics response and 85% in the Choice response. Accordingly, we examined the subject means across all 32 cases. For the Ethics response, 25% of the means were below 5 (indicating that the subject on the whole thought that payment high enough to induce 99% participation was unethical); 41% were between 5 and 9, and 29% were exactly 9 (indicating complete acceptance of payment for all cases). For the Choice response 29% of the means were below 5 (indicating that the subject on the whole thought that payment high enough to induce 99% participation removed some autonomy); 37% were between 5 and 9, and 32% were exactly 9 (complete free choice).

On the final FreeWill question about whether too much compensation could remove autonomy, 41% agreed (answers above 5), 35% disagreed (below 5), and 24% were neutral. Some subjects agreed with the idea that in-kind compensation is better. On the final InKind question, 30% agreed that free drugs were better, 32% disagreed, and 35% were neutral.

The answers to FreeWill correlated with Choice ($r = -.42$, $p = .0005$), but the answers to InKind did not correlate significantly with Choice, Ethics, or FreeWill. The Ethics score (based on the mean of the 32 items) correlated with the Choice score ($r = .45$, $p = .0002$) but did not correlate significantly with the FreeWill item. Note that the Ethics-Choice correlation is based on many items, while the FreeWill item is just a single question. Thus, the correlation between Ethics and Choice is probably a better indication of the relation between a belief in coercion and a belief that too much money is unethical.

Answers to Ethics and Choice items were affected as expected by the variables we manipulated. Table 2 shows these effects for the two levels of each variable. Asterisks indicate significant differences at $p < .05$ or $p < .01$ (two asterisks).

Variable	Levels	Ethics means	Choice means
Pain	4,12 hrs	6.92* 6.66	6.65 6.45
Current	1,3;3,9 hrs	6.70 6.86	6.46* 6.62
Duration	2,12 weeks	6.85* 6.71	6.58 6.49
Others	1000,10000	6.70 6.86	6.48* 6.59
Risk	0, .001	7.00** 6.57	6.66* 6.41

Experiment 3

Experiment 3 used risk of death rather than pain. Respondents might regard this as more serious and more less willing to let subjects decide.

Method

The introduction read:

Compensation for drug experiments (pain3)

This study is about compensation for experiments. They all involve experimental drugs for the treatment of chronic conditions that can cause death. For example, some heart conditions can lead to death from heart attacks or from blood clots in the brain.

Drugs are available to treat these conditions. They reduce the risk of death. Imagine an experiment to evaluate a new drug. Subjects in this experiment are assigned randomly to one of two conditions. They either get the new drug or no drug. If they get no drug, they get a placebo (a pill that does nothing) so that they do not know whether they are getting the new drug or no drug. This is the most efficient way to evaluate the new drug. Each subject has a 50/50 chance of getting the new drug or the placebo. Each subject participates for 3 months.

The new drug has a 75% chance of being more effective than the old one. It has a 25% chance of being equally effective. This is based on early results, and these estimates could be revised in either direction.

Subjects are compensated for their participation. The compensation is either in money or free health care, and it is either a small amount or a large amount. The small amount of money is just enough to cover expenses and time. The large amount is \$10,000, to compensate for the risk. The small amount of health care is a free physical exam. The large amount is \$10,000 in free medical care (with no limit on how long they have to use it). All of the potential subjects must pay some of their medical expenses themselves, so free care will have great value to them.

When the compensation is large, the study requires three months, because the subjects can be recruited immediately. When the compensation is small, the study requires a year to recruit all the subjects, so, if the drug works, all the people who need it get it 9 months later.

You will read a number of cases. The cases will differ in the following factors:

- Risk of death with placebo (over 3 months): 3% or 5%
- Risk of death with current drug: always 2% in 3 months
- Risk of death with new drug, if it works (over 3 months): 0% or 1%
- Whether the compensation is in the form of money or free medical care
- Whether the compensation is large or small
- The number of other people who might benefit from the drug: 1000 or 10000 people

In each case, you will make several judgments, including how attractive this study would be for a potential subject, how attractive it would be for a researcher, how ethical it would be, how much freedom of choice the subjects would have, how rational it would be for someone to participate, and how altruistic someone would be who would participate.

Notice that it is possible for something to be attractive but also irrational, or unattractive but rational. These are not the same question. Attractiveness concerns the initial impulse. Rationality is about what is best on reflection.

There are 32 cases.

As in Experiment 2, the five factors varied orthogonally. The compensation conditions were: “money for expenses,” “free physical exam,” “\$10,000 in money,” and “\$10,000 free health care.”

The first two were low compensation, the second two, high. The second and fourth were considered in-kind compensation. Each screen appeared as follows:

Risk of death with placebo (3 months):	5%
Risk of death with current drug	2%
Risk of death with new drug (if it works)	1%
Number of others who can benefit if the new drug works	10000
Form and amount of compensation	free physical exam
How ethical is it to offer free physical exam in return for participation in this study? (0 = not ethical at all, 9 = completely ethical)	<input type="text"/>
For this study, how much freedom of choice does each patient have about whether to participate? (0 = no freedom at all, 9 = complete freedom)	<input type="text"/>
How attractive is this study for a subject? (0 = not at all attractive, 5 = neutral, 9 = extremely attractive)	<input type="text"/>
How attractive is this study for a researcher? (0 = not at all attractive, 5 = neutral, 9 = extremely attractive)	<input type="text"/>
How good a decision is it for someone to participate? (0 = completely irrational, 9 = completely rational)	<input type="text"/>
How altruistic is someone who would participate? (0 = not altruistic at all, 9 = extremely altruistic)	<input type="text"/>

Results

We performed analysis of variance on the six dependent measures — Ethical, Free, Subject-attractive, Researcher-attractive, Rational, Altruism — as a function of the five manipulations - Placebo-risk, New-drug-risk, Others (number who could benefit), In-kind vs. out-of-kind compensation, and Amount of compensation. All but one of the significant interactions (which did not yield a substantive interpretation) involved In-kind vs. Amount. Examination of these interactions indicated that they resulted from respondents judging money for expenses to be better than a free physical exam. Because this effect is not relevant to our hypothesis, we report only the main effects. The mean effects, in terms of number of points on the 0–9 scale, are shown in Table X (where ** indicates $p < .001$ and *, $p < .05$, by t test).

Manipulation:	Response					
	Ethical	Free	Subj-attr	Res-attr	Rational	Altruism
Placebo-risk	-0.29**	-0.02	-0.57**	-0.02	-0.74**	0.14
New-drug-risk	0.00	0.12*	-0.21*	-0.12	-0.16*	-0.04
Others	0.12	0.07	0.15*	0.44**	0.22*	0.12
Amount	1.07*	-0.10	2.80**	-0.76*	1.72**	-0.24
In-kind	-0.28*	-0.06	-0.67**	0.06	-0.50*	-0.12

Trials were judged to be less ethical when the placebo risk was higher, as expected. But they were judged to be more ethical when the amount was higher, and more ethical when subjects

were paid in money. These judgments went in the same direction as those for subject-attractiveness, which was (as expected) higher when compensation was higher (by almost 3 points), but (contrary to expectation) lower for in-kind compensation than for money.

Although most subjects thought that high pay was ethical, 15 out of the 58 rated high pay as less ethical than low pay. The effect of Amount on Ethical (measured within each subject) was correlated, across subjects, with the effect of Amount on Free and on Rational ($r > .57$, $p = .0000$, for both correlations). The effect of Amount on Ethical was correlated negatively ($r = -.50$) with the effect of In-kind on Ethical. This makes sense as subjects who think that high pay is unethical also think that in-kind compensation is more ethical than monetary compensation.

Experiment 4

Method

The introduction to the questionnaire was the same as in Experiment 3 except for the following:

Experts think that the new drug has a 75% chance of being more effective than the old one. It has a 25% chance of being equally effective.

Subjects are compensated with money for their participation. The money ranges from just enough to cover expenses and time to this plus \$10,000.

The time to complete the study ranges from three months to 12 months. The new drug can be made available to all the people who need it, if it works, as soon as this study is over. The time to complete the study depends on the speed of recruiting subjects, and that depends on how much the subjects are paid.

You will read a number of cases. The risk of death with the current drug is always 2% in 3 months. The cases will differ in the following factors:

- Risk of death with placebo (in 3 months): 3% or 5%
- Risk of death with new drug, if it works (over 3 months): 0% or 1%
- Whether the compensation is large or small
- The number of other people who might benefit from the drug: 1,000 or 100,000 people

Each item appeared as follows:

Risk of death with placebo (3 months):	3%
Risk of death with current drug	2%
Risk of death with new drug (if it works)	1%
Number of others who benefit if the new drug works	1,000
Time required to complete the study	3 months
Amount of compensation	\$10,000 plus expenses

How ethical is it to offer \$10,000 plus expenses for participation in this study? (0 = not ethical at all, 9 = completely ethical)
How much freedom of choice does each patient have about whether to participate? (0 = no freedom at all, 9 = complete freedom)
How rational is the typical person who decides to participate? 0 = completely irrational, 9 = completely rational
How rational is the typical person who decides not to participate? (0 = completely irrational, 9 = completely rational)

Suppose the compensation were **money for expenses** and the time to complete the study were **12 months**. How would this compare to the plan above, in which the compensation was **\$10,000 plus expenses** and the time to complete the study was **3 months** on each of the following:

Ethical: 0=much less, 5=equally, 9=much more
Freedom of choice: 0=much less, 5=equally, 9=much more
Rational to participate: 0=much less, 5=equally, 9=much more
Rational not to participate: 0=much less, 5=equally, 9=much more

Results

Ethics response	N	Ethical	Free	Yes rational	No rational
High pay more ethical	24	2.88	0.39	1.76	-1.08
High pay less ethical	20	-1.80	-1.49	-0.49	-0.52

References

National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research (1979). *The Belmont Report: Ethical Principles and Guidelines for the Protection of Human Subjects of Research*. Washington, DC: U. S. Food and Drug Administration. <http://www.fda.gov/oc/oha/IRB/toc11.html>.

Office for Human Research Protections (1993). IRB Guidebook, 1993. U. S. Department of Health and Human Services. http://ohrp.osophs.dhhs.gov/irb/irb_guidebook.htm.