1997

Women's attitudes toward fetal tissue research and donation

Christine Kilger Chouinard
San Jose State University

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**WOMEN'S ATTITUDES TOWARD
FETAL TISSUE RESEARCH AND DONATION**

A Thesis

Presented to

The Faculty of the Department of Sociology

San Jose State University

In Partial Fulfillment

of the Requirement for the Degree

Master of Arts

by

Christine Kilger Chouinard

December, 1997

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ABSTRACT

WOMEN'S ATTITUDES TOWARD FETAL TISSUE RESEARCH AND DONATION

by Christine Kilger Chouinard

This study examines how women's attitudes toward fetal tissue research and their willingness to donate fetal tissue for medical research are predicted by variables including attitude toward abortion, attitude toward organ donation, and level of disease involvement. In addition, it examines whether the opportunity to donate fetal tissue is a significant factor in a woman's decision about whether or not to have an abortion.

A questionnaire that examined attitudes about fetal tissue research and donation was completed by 113 women at two branches of a family planning clinic in California.

The research finds that women's attitudes toward fetal tissue research, and their willingness to donate fetal tissue, closely mirrors their attitudes toward abortion and organ donation. No support is found for the relationship between disease involvement and attitudes toward fetal tissue research or willingness to donate fetal tissue.

As predicted, the opportunity to donate fetal tissue is found to be the least important reason among those listed in a woman's decision about whether or not to have an abortion. These findings suggest that the donation of fetal tissue is unlikely to play a significant role in the decision of a woman to have an abortion.

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CHAPTER 1

INTRODUCTION

The Fetal Tissue Research Problem

Medical research involving human fetal tissue is not new; such material has been used in some biomedical research since the beginning of this century (Mullen, 1992; Vawter & Caplan, 1992). However, it was not until 1987, when an experiment in Mexico became well publicized, that the issue of using fetal tissue for research came into public debate (Vawter & Caplan, 1992). The application of human fetal tissue, through transplantation, shows much promise for chronic and incurable diseases such as Alzheimer's, Parkinson's and diabetes (Nelson, 1990). There are also possible therapeutic applications for many diseases including AIDS, leukemia, and Tay-Sachs (Donovan, 1990; Mullen, 1992; Robertson, 1988). With the exception of DiGeorge's Syndrome, a rare genetic disorder whose treatment of choice for over 20 years has been fetal tissue transplantation, the use of fetal tissue for these diseases has remained in the experimental stage (Mullen, 1992). The Uniform Anatomical Gift Act (UAGA) and federal research regulations govern the procurement and use of fetal tissue donation and research in the United States (Nolan, 1988; Robertson, 1988) and currently, few facilities are procuring fetal tissue for research.

Despite the UAGA's ethical guidelines, fetal tissue has become a highly controversial issue that has resulted in two opposing factions, one favoring the use of fetal tissue and the other opposing it. These opposing factions are, in part, tied to the politics of abortion because the fetal tissue most conducive for medical purposes is from elective abortion. Since the Supreme Court legalized abortion in 1973, the debate over the morality of abortion has become one of the most divisive issues in American society. Currently, fetal tissue from miscarriages (spontaneous

abortions) or ectopic (tubal) pregnancies are mostly unsuitable for clinical application (Mullen, 1992).

Opponents of fetal tissue transplantation research argue that it is morally and psychologically inseparable from abortion. Proponents argue otherwise (Gold & Lehrman, 1988; Robertson, 1988). Vawter and Caplan (1992) favor fetal tissue research and present their arguments against fetal tissue research opponents. They argue that the opponents' views falsely assume that women take their decisions about having an abortion lightly. In addition to Vawter and Caplan, Robertson (1988), a member of the National Institutes of Health (NIH) Panel on Fetal Tissue Transplantation Research, finds clear moral and practical separation between fetal tissue donation and transplantation and decisions to end unwanted pregnancies. Indeed, research on abortion decision-making indicates that women make decisions about having an abortion based on factors that directly affect their social, emotional and economic lives (Baker, 1995; Lunnenborg, 1992; Torres & Forrest, 1988).

It appears that for some, the issue of abortion cannot be isolated from the issue of fetal tissue research. This link with abortion is probably the primary source of objection for many. However, evidence from other research and testimony suggests that one's position on abortion is not the only determinant of attitudes towards fetal tissue research (Harris & Associates, 1992; Scanlan, 1992). A 1992 poll found that 33% of those who identified themselves as "Pro-life" (antiabortion) agreed with the statement that, "The use of aborted fetuses for research should be allowed if the alternative sources — chiefly miscarriages — are inadequate in volume and quantity" (Harris & Associates, 1992, 2).

Because fetal tissue transplantation is a possible treatment for some chronic and incurable diseases, it is logical to assume that people who might benefit from fetal tissue would be proponents of it. It is clear anecdotally that some of the most vocal advocates for fetal tissue research are those with illnesses that might benefit from this type of research (Governal, 1996;

Kearney, Vawter & Gervais, 1991). This includes individuals who have one of these diseases, as well as those who have a relationship (i.e., caregivers, family, friends) with an individual who is so afflicted.

The donation of fetal tissue also shares similarities with the phenomenon of organ donation. Factors associated with approval of organ donation — altruism, belief in medical technology, and defining as acceptable the use of body tissues and organs — arguably may be the same social factors that would motivate women to approve of or consent to donating fetal tissue at the time of an abortion. Along the same lines, factors associated with disapproval of organ donation — the belief in not “playing God,” the commodification of body parts, social traditionalism, and defining as unacceptable the use of body tissues and organs — may be some of the same factors which predict opposition towards fetal tissue research and donation.

Review of Theory

It is clear from the literature that the issues surrounding the use of fetal tissue in medical research and transplantation in the United States extend beyond biological definitions, and have their roots in the socially-derived definitions of personhood of the fetus. However, the scant previous research on fetal tissue research attitudes has generally lacked any theoretical explanations.

This present study is framed by motivation theory, using a costs and benefits analysis, to examine how particular variables affect attitudes and behavior toward fetal tissue research. A motivational approach assumes that “individuals assess the costs and benefits of making certain responses, including maintaining and expressing certain attitudes” (Weber, 1992, 126). In addition, as Luker (1975) noted, incentive or costs and benefits analysis is also found in the literature on decision making, and assumes that “the individual is aware of the decision-making process, perceives both penalties (‘costs’) and utilities (‘benefits’) to be experienced with any

given line of action, and weighs the differential costs against the probabilities of benefit in order to make a decision" (p. 35). Therefore, utilizing a costs and benefits analysis, this study examines how women's attitudes toward fetal tissue and their willingness to donate fetal tissue for medical research are predicted by variables including attitude toward abortion, attitude toward organ donation, level of disease involvement, and it examines whether the opportunity to donate fetal tissue is a significant factor in a woman's decision about whether or not to have an abortion.

This research also uses the symbolic interactionist perspective's concept of the definition of the situation to help analyze how women define the products of conception. Symbolic interactionism is a theoretical approach in sociology that seeks to explain interaction and behavior as the outcomes of the meanings that individuals attach to things and to social action. Meanings are not inherent in an object or event, rather they arise out of social processes. Symbolic interactionism's basic tenet may be briefly summarized as "human beings act toward social objects mainly in terms of the meanings they attribute to these objects rather than to their intrinsic character" (Coser, 1977, 574). Linked closely to this tenet is the sociological concept of the "definition of the situation." This concept was introduced by sociologist W. I. Thomas in his well known statement: "If men define situations as real, they are real in their consequences" (Coser, 1977, 520). Situations and objects, moreover, are socially defined by people based on their social situations and interaction.

CHAPTER 2

REVIEW OF RELATED LITERATURE AND HYPOTHESES

Fetal Tissue Research

At this time, very little empirical research has been done on public attitudes toward fetal tissue research. An extensive review of the literature revealed only three nonmedical, empirical studies on the subject of fetal tissue research — one from the United States, one from Canada and one from the United Kingdom.

As Figure 1 indicates, in a poll examining attitudes toward fetal tissue research conducted in June, 1992 of 1225 adults (Harris & Associates, 1992), researchers found that 74 % of respondents sampled believe that research using fetal tissue should continue, 22 % think it should not, and 4 % are not sure. Of these respondents who identify themselves as “Pro-Life” (against abortion rights), 55 % believe the research should continue and 43 % think it should not,

Figure 1: Public Attitudes Towards Fetal Tissue Research

Note. “And now for some questions about fetal tissue research. That is, cells of fetuses from abortions and miscarriages. There is considerable scientific evidence that fetal tissue cells may prove to be an effective treatment for serious diseases such as multiple sclerosis, diabetes and Parkinson’s disease. Do you believe that research in this field should continue, or not?” (Graph based on data from Harris & Associates, 1992)

whereas 87 % of those who identify themselves as "Pro-Choice" (for abortion rights) think fetal tissue research should continue and 9 % do not. This supports the idea that fetal tissue research and abortion attitudes are linked ideologically.

In the same poll, two additional questions about abortion and fetal tissue were asked. As Figure 2 indicates, 61 % of respondents agree with the statement, "The use of aborted fetuses for research should be allowed if the alternative sources — chiefly miscarriages — are inadequate in volume and quantity," whereas 33 % disagree and 6 % are not sure. When respondents are separated into Pro-Life and Pro-Choice groups, 79 % of "Pro-Choice" respondents agreed with this statement, as do 33 % of "Pro-Life" respondents. The "Pro-Life" respondents who agreed with the above statement suggest that attitude toward abortion is not the only factor in determining one's attitude towards research using fetal tissue (Harris & Associates, 1992, 2). This study investigates several other possible factors including level of disease involvement and attitude toward organ donation.

Figure 2: Attitudes Towards Use of Fetal Tissue in Medical Research from Elective Abortions

Note. "The use of aborted fetuses for research should be allowed if the alternative sources — chiefly miscarriages — are inadequate in volume and quality." (Graph based on data from Harris & Associates, 1992)

As Figure 3 indicates, Harris and Associates (1992) found that 64 % of adults did not agree that fetal tissue research using aborted fetuses will encourage more abortions, while 33 % thought that it would. Additionally, 60 % of “Pro-Life” respondents believed that it would encourage more abortions whereas only 17 % of “Pro-Choice” respondents agreed with this. The difference of opinion between the “Pro-Life” and “Pro-Choice” respondents regarding research using fetal tissue as an incentive for women to have abortions is a central issue in the debate about using fetal tissue. This suggests that fetal tissue research attitudes are linked to the ideologies and politics of abortion.

Figure 3: Does Fetal Tissue Research Encourage Abortion?

Note. “Allowing fetal tissue research using aborted fetuses should be forbidden because it will encourage more abortions.” (Graph based on data from Harris & Associates, 1992)

A study done in the United Kingdom that investigates women’s attitudes about fetal tissue most closely parallels the work done in the present thesis (Anderson, Glasier, Ross & Baird, 1994). The United Kingdom study (n=694) consisted of two groups of women: one group was attending a family planning clinic (n=527) and the other group (n=167) consisted of women who were requesting termination of their pregnancies at the Royal Infirmary of Edinburgh.

Anderson et al. (1994) found that regardless of their past pregnancy histories, 94 % of women overwhelmingly approved of the use of fetal tissue for medical research. While women in this study were not asked to donate fetal tissue, 87 % thought research using fetal tissue was, in principle, acceptable, and 86 % said they would allow their own fetus to be used for this kind of research. In addition, a majority of the women (63 %) indicated that they would want their permission to be sought before allowing their fetus to be used for medical research.

In conclusion, the researchers found it unlikely that a woman would terminate a pregnancy for the sole purpose of donating the fetal tissue for research since, "for the vast majority the decision to have an abortion is painful and difficult and not undertaken lightly" (Anderson et al., 1994, 39).

One limitation in interpreting this study is that the phraseology of the instrument and instructions is unknown. Question or wording bias is extremely important with respects to sensitive issues like abortion. Indeed, according to the Harris Poll Organization, the different wording of questions will almost certainly produce different results (Harris & Associates 1992).

A study in Canada also addressed women's attitudes about fetal tissue research and donation, including the issue of whether fetal tissue donation might encourage woman to have an abortion (Martin, Maclean, Lowy, Williams & Dunn, 1995). Respondents, who completed a questionnaire, consisted of 266 female patients of a family practice.

Martin et al. (1995) found that two-thirds (66.9 %) of respondents said they would not be more likely to have an abortion even if the fetal tissue could be used to help sufferers of Parkinson's disease, 24.1 % were uncertain and only 12 % thought they would be more likely to terminate the pregnancy.

Additionally, Martin et al. (1995) found that among those women who would consider abortion if they were pregnant (n=122), 45.6 % would feel "better" about having an abortion knowing the fetal tissue could be used to help sufferers of Parkinson's disease, 38.5 % would feel "no different," 13.7 % were uncertain and 2.2 % thought they would feel "worse" about

having an abortion. These two findings suggest that while being able to donate fetal tissue for medical research may make some women feel better about having an abortion, for most women such an option is not likely to encourage abortion.

As discussed earlier, question or wording bias must be minimized, particularly when studying sensitive issues like abortion. The survey instrument that was used in the Martin et al., (1994) was examined. The survey questions which resulted in the above findings ([a] being more willing to have an abortion and [b] feeling better about having an abortion), both contained the phrase: "If you became pregnant, and knew that the tissue from the fetus could be used to help someone suffering from Parkinson's disease" (Martin et al., 1995, 548). It is likely that the use of the emotionally-laden phrase "someone *suffering* from Parkinson's" [italics added] rather than a more neutral phrase such as "someone *with* Parkinson's disease" might have affected the respondents' responses to the questions.

Abortion and Fetal Tissue Research Attitudes

The Abortion and Fetal Tissue Research Link

Since approximately 1987 the use of human fetal tissue for medical research and application purposes has become a highly controversial social policy issue. Medical evidence strongly suggests that tissue obtained from elective abortions is the most conducive for medical application. It is not surprising that the main opposition to fetal tissue research is due to the dependence on elective abortion as a source of tissue, given the emotional and political divisiveness over the abortion issue. In fact Vawter and Caplan (1992) argue that:

The current controversy in the United States about the use of fetal tissue for transplantation is, quite simply, a surrogate for the ongoing debate about the morality of

elective abortion. In nations where the morality of abortion is not an issue, either because it has been made illegal or because elective abortion is accepted as a morally and legally legitimate practice, there has been almost no controversy about the use of fetal tissue from elective abortions for transplantation. (p. 32).

It appears that for some individuals the issue of fetal tissue research cannot be isolated from the issue of abortion (Gold & Lehrman, 1989). Therefore, it is logical to assume that to understand attitudes toward fetal tissue research it is imperative to have an understanding of abortion attitudes.

Review of Abortion Attitudes

In spite of the polarized views on abortion by activists, a review of the literature on abortion attitudes revealed that a majority of Americans reject the position that it is always wrong to have an abortion, and most believe that abortion is an acceptable moral choice given certain situations. This variation in abortion approval, based on the circumstances of an abortion has been well documented (Granberg & Granberg, 1980; Robertson, 1987; Tamney, Johnson & Burton, 1992; Walzer, 1994).

In a poll by Gallup (1995), a majority (54 %) of respondents agreed that abortion should be legal in certain circumstances, 31 % thought it should be legal in all circumstances, 12 % believed it should be illegal under all circumstances, and 3 % were not sure.

In an analysis of abortion attitudes based on the National Opinion Research Center's (NORC) surveys from 1965 to 1980, Granberg and Granberg (1980) found that of the assorted demographic and social variables examined, the strongest relationship was with education. Respondents who were better educated were more likely to favor the availability of abortion. Approval for abortion was also positively associated with support for women's rights and a commitment to basic civil liberties.

Conversely, disapproval of abortion was correlated with disapproval of premarital sex, and with strength of religious commitment. Granberg and Granberg (1980) went on and stated:

National opinion polls suggest that most Americans cannot be characterized as anti-abortion or pro-abortion. The majority, apparently, believe that abortion should be available under a variety of life circumstances, and very few would prohibit it in all cases. People's attitudes, however, tend to be complex and ambivalent. (p. 251).

There is nearly a consensus of approval (85 %) on abortion for the so-called "hard reasons" (where the woman's health is endangered, the pregnancy is the result of rape, or there is a strong chance of fetal abnormality). However, there is much more divisiveness over support for the so-called "soft reasons" (economic hardship, the woman is unmarried or she is married and does not want a child); approval averaged around 50 % in 1980 (Granberg & Granberg, 1980).

Evidence suggests that attitude toward abortion is related to two other ideological variables: a belief that life begins at conception and a belief in privacy rights (Tamney, Johnson & Burton, 1992). Luker (1984) found that activists on both sides of the abortion issue had conflicting world views. While the definition of fetal personhood was a central issue in each of these two social worlds, she argued that the abortion debate was really an indicator of broader ideologies involving definitions of motherhood, sexuality and religion (Luker, 1984; Spicer, 1994).

Abortion and the Definition of Fetal Tissue

Since the Supreme Court legalized abortion in 1973, the debate over the morality of abortion has become one of the most divisive issues in American society. Two issues are central to the debate over abortion: one is a basic value judgment or definition as to the status of the

fetus; the other is about a woman's right to control her own body based on her own values, including her definitions of personhood. As Luker (1984) stated it, "The debate about abortion is a debate about personhood" (p. 5). Judgment about when personhood begins is subjective and highly variable. Opinions range from the moment of conception to after birth.

Studies on abortion attitudes reveal that how individuals align themselves in the abortion debate must be examined within the context of the social world in which they live, and that "an individual's reaction to abortion draws on social, psychological, symbolic, and moral resources, as she or he tries to fit abortion into a larger world view" (Luker, 1984, 8). In her examination of abortion activists, Luker (1984) found that those who oppose abortion usually believe that human life begins at conception and the fetus is considered an unborn baby or child with unrecognized rights under the law, including the right to life. Abortion thus defined is considered the moral equivalent of murder.

Proponents of abortion rights usually believe that personhood at conception is a subjective, often religious belief and not a provable biological fact. They believe that the fetus, which consists of cells and tissue, has the potential to become a baby or child, but it is not one yet. Given this definition of a fetus, "Whatever rights it has are more similar to those of the fertilized egg it was than to the baby it may become. . . [abortion is] therefore something closer on the moral scale to contraception than to murder" (Luker, 1984, 6).

As Childress (1991), another NIH panel member explained, one of the issues the panel faced in its deliberations on the use of fetal tissue was that of the status of fetal life:

should [the fetus] be viewed as tissue, as a potential human life, or as a living human being. Certainly the members of the panel differed greatly in their individual views on this question, which required them to oppose the use of fetal tissue following abortions.

Others contended that it was possible to separate, morally and practically, abortions and the use of fetal tissue, despite the fact that elective abortions provide the bulk of tissue. (p. 220).

Symbolic interactionism's basic tenet may be briefly summarized as "human beings act toward social objects mainly in terms of the meanings they attribute to these objects rather than to their intrinsic character" (Coser, 1977, 574). This construct is extremely useful in viewing the opposing viewpoints and opinions about fetal tissue research. For example, the socially-derived definition of the personhood of the fetus, which is central to the debate about abortion (see Luker, 1984), is also central to the debate about research using human fetal tissue. In other words, attitudes and beliefs about the definition of the fetus are likely to influence attitudes and behavior towards real or hypothetical fetal tissue. A similar approach is taken by Katz Rothman (1986). In her book, *The Tentative Pregnancy*, she notes that the meaning of an abortion to a woman is directly attributed to the meanings the pregnancy held for her. "If a woman defines the products of conception within her as accidental, then that is what they are to her. If she defines it as her baby, then she treats it as her baby" (Katz Rothman, 1986, 6). It is likely, however, that these two definitions are extremes on each end of a continuum. Most women probably view their pregnancies as somewhere in between these two extremes.

Despite a woman's beliefs about the personhood of the fetus, or her definition of the products of conception, her opinions about abortion are likely moderated by her analysis of the costs and benefits of continuing or terminating a pregnancy. Costs and benefits have both social as well as economic dimensions and can include such things as financial hardship, the stigma of abortion or unwed parenthood, and the medical risks of pregnancy and childbirth versus the medical risks of abortion (Luker, 1975). In addition, other costs and benefits include, but are not limited to, the level of readiness for parenthood, partner's attitude or relationship status, parent's attitudes, career paths, and educational goals. In summary, a woman's definition about the personhood of the fetus, and the weighing of costs and benefits significantly affect her attitudes toward abortion.

It is hypothesized in this study that women's abortion attitudes will affect their attitudes towards fetal tissue research and that their abortion attitudes will also be a predictor of their

willingness to donate fetal tissue for medical research. As approval for abortion increases, so will approval for fetal tissue research and as approval for abortion increases so will willingness to donate fetal tissue.

Women who approve of abortion are expected to be more likely to approve of research using fetal tissue, and to be more willing to donate fetal tissue for medical research. This is because they define abortion as acceptable, and therefore the use of fetal tissue for research is also acceptable.

Level of Disease Involvement and Fetal Tissue Research

There are hundreds of thousands of individuals afflicted with diseases who might benefit from fetal tissue research. Living with a chronic disease has both social and psychological consequences for the individual afflicted, as well as for family and friends. As Siegel (1987) stated it, "the extended (often lifetime) involvement with the health care system by those having a chronic illness creates various physical, emotional, social, and economic issues for chronically ill individuals" (p. 3396).

The impact of living with a chronic disease significantly affects family members, especially the primary caregiver, as well as the individual afflicted. The effects are often negative and result in social, psychological and economic costs (Lubkin, 1986; Siegel, 1987). As DesRosier, Catanzaro and Piller (1992) found, the impact of living with a progressive neurological disease significantly affects family members, especially caregivers of an afflicted spouse. Kerns and Curley (as cited in DesRosier et al., 1992) found that caretakers often face tremendous strains such as social stigma, a limitation of social roles, and increased economic burdens, and that overall, there is increased stress on the family system.

Therefore, it is logical to assume that an individual may be motivated to try and alleviate

these costs if possible. Those who may benefit from fetal tissue research are more likely to support it. This includes both individuals afflicted by a chronic illness, as well as those affected because of social relationships, such as caregivers and friends. Thus, for example, in 1990 the board of advisors for the Parkinson's Disease Foundation (PDF) considered suing the United States administration over its ban of the use of federal funds for fetal tissue transplantation research (Gershon, 1990). The ban was subsequently overturned in 1992. As Kearney, Vawter and Gervais (1991) noted, advocates of fetal tissue research include an increasingly vocal constituency consisting of those with illnesses that might be helped or cured with fetal tissue.

Viewed from the perspective of an individual living with or affected by chronic illness, the definition of fetal tissue research becomes a more personal, and possibly complex issue. As one transplant patient put it, "If everyone involved in the [fetal tissue] debate could have Parkinson's for one month, they'd change their minds" (Thompson, 1992, 53).

In Whitney's examination of abortion and fetal tissue in her book, *Whose Life*, she interviewed Nan Patton Harrison, a nurse who has Parkinson's disease but was not a transplant patient. Harrison commented on her redefinition of the fetus:

But today I have different thoughts about the significance of the fetus because of the diagnosis that I have Parkinson's disease . . . because of the heated debate on abortion, vital research that can save the life and give quality of life to myself and tens of thousands of people. . . is being lost. . . It's different when you have to confront the issue on a personal level. . . what if it would save your own life? (Whitney, 1991, 205-206).

Strong (1991) asserted that fetal tissue transplantation research is ethically justified when one weighs the moral problems of using tissue from aborted fetuses against the benefits for patients. Slader (1988) took this view even farther and argued that it is immoral not to use fetal tissue technology because of the potential benefit it holds for so many people.

It is hypothesized in this study that level of disease involvement will have an effect on

attitude towards fetal tissue research, and that disease involvement will also be a predictor of women's willingness to donate fetal tissue. In other words, the higher the level of disease involvement a woman has, the more likely she will approve of and be willing to donate fetal tissue for research because:

1. Those women with disease involvement are more aware of the "costs" that come with having a chronic disease: physical, social, economic and psychological. They will consequently define the use of fetal tissue in medical research as a "benefit" — by potentially decreasing the "costs."
2. They define the use of fetal tissue as a health, medical and quality of life issue, rather than only as an abortion issue.

Organ Donation Attitudes and Fetal Tissue Research

Research on the demographic, personality and attitudinal characteristics of organ donors reveals that donors are likely to be young, female and have higher than average incomes. They also tend to have "non-conservative" religious attitudes and express minimal anxiety about death (Simmons, as cited in Creecy & Wright, 1990). There were also several studies that found a positive relationship between the tendency toward donation and educational attainment. Individuals with higher levels of education showed an increased likelihood to donate organs after death (Cleveland & Johnson, as cited in Creecy & Wright; Gallup, 1993). Protas and Batten (1991) also found that whites, individuals with higher educational levels and those with higher incomes had the most favorable attitudes towards donating a relative's organs after death when they did not know the person's preferences. Religious and cultural beliefs, too, played a large part in whether or not family members would give permission for the removal of organs from a potential donor (Randall, 1991).

The Gallup Organization conducted the largest survey ever on public attitudes towards organ donation in 1993. The survey was conducted for the Partnership for Organ Donation, Incorporated. The report found that an overwhelming majority of Americans (85 %) supported the donation of organs for transplantation, 6 % opposed it and 3 % did not know if they supported or opposed it. Of the respondents, 69 % were "very or somewhat likely" to want their organs donated after death, while 25 % were "not very or not at all likely" to want this. Additionally, 90 % of the respondents agreed that one benefit is that "organ donation allows something positive to come out of a person's death" (Gallup, 1993, 3). Only 7 % disagreed with this statement.

Interestingly, in spite of almost overwhelming support for organ donation (85 %), only 28 % of respondents could be categorized as potential organ donors (those who had or would be willing to sign a donor card or had indicated permission to be a donor on their drivers licenses). This is significant because it alludes to the discrepancy that exists between individuals' reported attitudes and their actual behavior, as well as indicating that it is likely that there are unidentified social costs that affect their willingness to become an organ donor.

The analysis of costs and benefits of using fetal tissue in medical research is apparent in the views of some medical researchers. For them, fetal cells are the equivalent of vital organs that are available to save lives but are just being thrown away (Thompson, 1992). Medical researchers who are proponents of fetal tissue experiments believe that the benefits that the research may bring to so many people outweighs the costs of using tissue from aborted fetuses. Furthermore, some researchers are able to separate the issue of using fetal tissue research from the abortion debate. As Lafferty, a fetal tissue researcher argued, "A fetal cadaver shouldn't be treated any differently from another cadaver, as long as society agrees that we can use cadaveric tissue." (as quoted in Clark, Gosnell & Hager, 1987, 63).

It is hypothesized in this study that as women's approval of organ donation increases, their approval of fetal tissue research increases. Another hypothesis related to this is that as

women's approval of organ donation increases, their willingness to donate fetal tissue for medical research will also increase because:

1. They define the use of body tissues and organs as acceptable and beneficial for medical research and application.
2. They define fetal cells as the equivalent to vital organs that are available to save lives but are not being utilized (Thompson, 1992).
3. They believe that body tissues and organs belong to the individual, who has the "right" to donate if they so wish.
4. They define fetal tissue as a body tissue, drug or both and therefore see it as suitable for donation and research.

Abortion Decision Making

A review of the literature found that women usually state a multitude of reasons for choosing abortion and that the decision making process almost always involves discussions with others. These two facts emphasize that the abortion decision-making process is a complex one and that it is social in nature.

Torres and Forrest (1988) conducted a study of over 1,900 women undergoing abortions. They found that over 93 % of the respondents cited more than one reason for having an abortion, and the mean number of reasons given was almost four. As Table 1 indicates, Torres and Forrest (1988) found that 76 % of the respondents said they were concerned about how having a baby would change their life; 68 % said they could not afford a baby now, and 51 % reported that they did not want to be a single parent or they had relationship problems. The other reasons given (in order of frequency) were: (a) the woman is not ready for the responsibility, (b) she does not want others to know she is sexually active or pregnant, (c) she is not mature enough or too young to have a child, (d) she has grown-up children or has all the

children she wants, (e) her husband or partner wants her to have an abortion, (f) there are possible fetal health problems, (g) the woman has health problems, (h) her parents want her to have an abortion, and (i) the woman is a victim of rape or incest.

Table 1: Percentage of abortion patients reporting that a specific reason contributed to their decision to have an abortion, by percentage saying that each reason was the most important

Reason	Total (N=1,900)	Percent (%) Most Important** (N=1,773)
Woman is concerned about how having a baby could change her life	76%	16%
Woman can't afford baby now	68%	21%
Woman has problems with relationship or wants to avoid single parenthood	51%	12%
Woman is unready for responsibility	31%	21%
Woman doesn't want others to know she has had sex or is pregnant	31%	1%
Woman is not mature enough, or is too young to have a child	30%	11%
Woman has all the children she wanted, or has all grown-up children	26%	8%
Husband or partner wants woman to have abortion	23%	1%
Fetus has possible health problem	13%	3%
Woman has health problem	7%	3%
Woman's parents want her to have abortion	7%	<0.5%
Woman was victim of rape or incest	1%	1%
Other	6%	3%

**** Unweighted**

Note: Table reprinted with permission from the Alan Guttmacher Institute (see Appendix C).

Similarly, Baker (1995) identified a number of reasons for abortion including: (a) lack of financial resources, (b) emotional unreadiness for parenthood, (c) completion of education, (d) difficulties providing for the children they already have, (e) hyperemesis (severe nausea and vomiting), (f) fetal abnormality, (g) pregnancy is the result of rape, incest or an abusive relationship, or (h) abortion is medically indicated for the health of the woman.

In counseling over 16,000 women, Baker (1995) also observed that, in general, women chose abortion because they felt financially, physically and emotionally unable to go through nine months of pregnancy and have a child. These women chose abortion rather than adoption for several reasons. Adoption for them presented emotional, physical and financial hardship. In addition, these women felt they could cope better after having an abortion than after placing a child for adoption.

Baker (1995), in fact, often frames the decision-making process with her patients as an evaluation of "life losses and life gains" (p. 36). She uses both verbal and written techniques to assess the life losses (costs) and life gains (benefits) that are expected to follow each of the alternatives, carrying to term and parenting, adoption, or abortion. Baker's explicit use of a costs and benefits analysis closely mirrors Luker's (1975) research on contraceptive risk-taking, in which women implicitly utilized the costs and benefits of using contraception versus having an abortion.

These findings suggest that women take into account multiple factors when deciding to have an abortion and that the reasons for an abortion generally reflect concern about the practical impact of having a child in their current financial, social, and emotional situation. This implies that women are evaluating the economic and social costs and benefits of continuing the pregnancy to term versus having an abortion.

Additional research on the decision-making process finds that significant others are often involved. Almost all abortion patients in one study (Ashton, 1980) discussed their

pregnancies with others; the average was five to six discussants per patient. Age was found to be inversely correlated with the number of discussants. In other words, older patients discussed their pregnancies with fewer people than did younger patients. Faria, Barrett & Goodman (1985) found in their study of 517 abortion patients that 72% stated they had sought help from someone regarding what to do about their pregnancy, and 27% indicated they had sought professional counseling. As Ashton (1980) noted, "It is apparent that 'significant others' from everyday life play a major role in this process" (p.257). Those involved with discussion of the pregnancy were (in order of frequency): physician, boyfriend, girlfriend, husband, mother, pregnancy counselor, relative, social worker, psychiatrist and minister.

It is clear from previous studies that a number of factors are involved when a woman is making a decision about whether or not to have an abortion. However, it should be noted that none of the above studies on abortion decision-making offered fetal tissue donation as one of the reasons for having an abortion. Fetal tissue procurement is currently an uncommon practice for abortion providers (S. Gitis, personal communication, July 1, 1997).

Donation of Fetal Tissue and Abortion Decision Making

One of the primary objections to the use of fetal tissue in transplantation research is the argument that women will have abortions they otherwise would not have in order to donate the tissue to anonymous others. In other words, some individuals believe that the opportunity to donate fetal tissue will be an incentive for some women to have abortions. Vawter and Caplan (1992) state that fetal tissue research opponents argue that the number of abortions might increase because the research may further legitimize abortion, and that women may be encouraged or pressured to have abortions.

The National Institutes of Health (NIH) established a 21 member, special advisory panel comprised of outside consultants and researchers, on Human Fetal Tissue Transplantation

Research in 1988 to examine the ethical issues and to advise the advisory committee of the director of the NIH whether fetal tissue research should be supported by federal funding. The panel, after reviewing over 30 years of published research on fetal tissue agreed that there is "no evidence that the use of fetal tissue for research has had a material effect on the reasons for seeking an abortion in the past" (Report of the Human Fetal Tissue Transplantation Panel, Dec, 1988, Vol. 1, p. 1). The report of the panel also stated that it did not expect women to have abortions for this reason.

As Robertson (1988), a member of the (NIH) Panel on Fetal Tissue Transplantation Research, pointed out, "The main motivation for abortion is to avoid the burdens of an unwanted pregnancy. The fact that fetal remains may be donated for transplant will continue to be of little significance in the total array of factors that lead a woman to abort a pregnancy" (p. 6). Robertson went on to argue that while donating fetal tissue may make some women feel better about having an abortion, this does not mean that the opportunity to donate tissue is a factor in their decision to terminate a pregnancy. He believes that there can be clear moral and practical separation between fetal tissue donation and transplantation and decisions to end unwanted pregnancies.

In addition to Robertson's views, Vawter and Caplan (1992), who are also proponents of fetal tissue research, observed that surveys of women who have had abortions do not suggest that donation of fetal tissue would play a significant role in their abortion decision making and in fact, find no evidence that even one woman had an abortion for the purpose of donating fetal tissue. In addition to this they argue:

The belief that women will seek abortions to donate fetal tissue falsely assumes that women take abortion decisions so lightly that the possibility of donating fetal tissue will "tip the scales" in favor of abortion for women who are undecided. It also presumes that women are easily influenced by societal pressures, such as an increasing demand for fetal tissue, and the wishes of others. It falsely assumes that women have such little

respect for their fetuses and themselves that they would accept the risks, discomforts, inconveniences and costs of an invasive and disturbing medical procedure on the off chance that someone, somewhere might benefit from the tissue. In short, it assumes that women's decision-making abilities are deficient, unreliable and not to be respected. (Vawter & Caplan, 1992, 33).

As Vawter and Caplan (1992) implied, pregnancy, planned or unplanned, is a complex, symbolic life event for women and decisions regarding a pregnancy are likely to reflect this. As is reviewed in the next section, research in this area found that women make decisions about having an abortion based on factors that directly impact their social, emotional and economic lives (Baker, 1995; Brazzell & Acosta; Torres & Forrest, 1988). As Luker (1975) observed, "It is important to realize that pregnancy is more than a biological occurrence; it is an event of immense social significance. It connotes fertility, femininity, adulthood, independence and a wide variety of other meanings" (p. 65).

This thesis examines the following factors related to abortion decision making: (a) financial situation, (b) career situation and goals, (c) educational situation and goals, (d) relationship situation, (e) partner's attitude, (f) parental attitudes, and (g) the opportunity to donate fetal tissue for medical research, and hypothesizes that the opportunity to donate fetal tissue will be the least important factor (of the seven factors given) in making a decision about whether or not to have an abortion because, in general, women decide to have abortions for reasons that directly impact their current social, emotional, and economic lives.

Hypothesis Section

In order to investigate the effects of abortion attitudes, organ donation attitudes, and disease involvement on women's attitudes toward fetal tissue research, and on their willingness

to donate fetal tissue, six separate hypotheses were examined. To investigate the relationship between the opportunity to donate fetal tissue and the decision to have an abortion a seventh hypothesis was also examined. The seven hypotheses are:

1. There is a positive relationship between the level of approval for abortion and level of approval for fetal tissue research.
2. There is a positive relationship between the level of disease involvement and the level of approval for fetal tissue research.
3. There is a positive relationship between the level of approval for organ donation and the level of approval for fetal tissue research.
4. There is a positive relationship between the level of approval for abortion and willingness to donate fetal tissue for research.
5. There is a positive relationship between the level of disease involvement and the level of willingness to donate fetal tissue for research.
6. There is a positive relationship between level of approval for organ donation and the level of willingness to donate fetal tissue for research.
7. The opportunity to donate fetal tissue for research is the least important reason (of the seven reasons identified) in making a decision about whether or not to have an abortion.

CHAPTER 3

METHODS

Subjects

The study was conducted at two of six locations of a privately owned and funded, for-profit northern California reproductive health clinic. The clinic services consist of pregnancy testing, birth control examinations, abortion referrals, adoption referrals and prenatal care referrals. Abortion procedures are performed at four other locations affiliated with the clinic. It is important to note that neither the clinics nor their affiliates at the time of this research were procuring fetal tissue for research purposes. The two clinics chosen did not constitute a random sample of reproductive health clinics in the United States. These clinics were selected because they were accessible as a research site. It is important to note that women who patronize clinics are probably not representative of all American women.

Subjects consisted of women ($n=113$) between the ages of 18 to 40 who visited one of these two reproductive health clinics. Although males may play a role in the abortion decision, women legally make the ultimate decision, and bear the physical consequences of the decision. Therefore, this study focuses upon women's attitudes toward abortion and fetal tissue research.

Procedure

All women who entered the clinic during a two week period in May-June, 1993 and who were at least 18 years of age were asked if they wanted to participate in an anonymous survey, including a questionnaire that would take about five minutes to fill out. These women included patients as well as any female family or friends who were with them. Patients comprise

87.5% of the sample. Although an exact count was not recorded, it is recalled that less than 15% of those contacted refused participation.

Data were collected by means of a self-administered questionnaire. The survey was distributed by the researcher and trained clinic staff to patients, as well as to any adult females accompanying them.

Instrument

The survey instrument consists of a cover letter and a 34 item questionnaire (see Appendix A). The cover letter explained that participation in the study was completely voluntary and did not affect access to services at the clinic. The cover letter also informed subjects that any information collected was anonymous and would remain confidential. Ten of the 34 items were questions regarding demographic characteristics of the respondents. The remaining 24 questions are primarily Likert scale items. These questions covered the following areas: attitude toward abortion, attitude toward fetal tissue research and donation, attitude toward blood and organ donation, willingness to donate fetal tissue for research, prior knowledge of fetal tissue research by respondents, as well as the importance of various reasons in abortion decision making.

Operationalization of Variables

Independent Variables

1. Approval of abortion was measured by a factor score that was obtained from a factor analysis of the following seven questions, which were prefaced by the following statement: "Abortion is a complex issue about which people have many different opinions. For each

situation below, please share with us whether you would approve or disapprove of a woman deciding to have an abortion if:" The scenarios listed after this preface were: (a) the woman's health is threatened by the pregnancy, (b) the woman is pregnant as a result of rape or incest, (c) there is a strong likelihood of fetal deformity, (d) the woman cannot afford to raise a child, (e) the woman is an unmarried teenager, (f) the woman does not want to be a parent right now, and (g) the woman has simply requested an abortion for any reason.

A five point Likert scale was used to indicate responses in all seven items. The response categories consisted of: (a) strongly approve, (b) somewhat approve, (c) not sure, (d) somewhat disapprove, and (e) strongly disapprove. "Strongly approve" was scored 1 and "strongly disapprove" was scored 5 (see Appendix A, questions 23-29).

2. Level of disease involvement is defined as the respondents' level of disease exposure to a particular set of diseases. Disease involvement was measured with the following question: "Do you or anyone you know personally have any of the following diseases? (Check all that apply). If you answered yes to any part of question #13, please write in the relationship of the person(s) to you." The diseases listed were: (a) Diabetes, (b) Parkinson's disease, (c) Alzheimer's disease, (d) Huntington's disease, (e) AIDS, (f) Hepatitis B, (g) Cancer.

The response categories for disease involvement consisted of: (a) yes, (b) no, (c) not sure, and (d) (a contingency question) "if yes, who?" with a line on which to write the relationship of that person to the respondent (for example: friend, aunt, etc.). "Yes" was scored 1, "no" scored 2 and "not sure" was scored 3. Each relationship category was then assigned a score. Scores were arbitrarily assigned based on the level of social closeness. The arbitrary scale is as follows: (a) self = 20, (b) parent or sibling = 10, (c) grandparents or friend = 5, (d) aunt, uncle, cousin, niece or nephew = 5, (e) in-laws and all other relatives = 2.

Each respondent received a score based upon the sum of the relationship scores. The higher the score total, the higher the level of disease involvement for the respondent (see Appendix A, question 13).

3. Approval for organ donation was measured by the question: "Please indicate whether or not you think it is appropriate for an individual to donate their body organs to others?" A seven point Likert scale was used to indicate responses. The response categories ranged from (a) very appropriate to (b) not at all appropriate. "Very appropriate" was scored 1 and "not at all appropriate" was scored 7 (see Appendix A, question 15).

4. Situational factors in abortion decision-making refer to a finite set of reasons that are important when making a decision about whether or not to have an abortion. Situational factors in abortion decision making were measured with the following question: "There are many different reasons why women choose to have an abortion. Listed below are some reasons women might give for having an abortion. If *you* were making a decision about having an abortion, how would you rank the following reasons from 1 (*most important*) to 7 (*least important*)?" The seven reasons listed were: (a) your financial situation, (b) your educational situation and goals, (c) your job or career situation and goals, (d) how your parents feel about the pregnancy, (e) how the father feels about the pregnancy, (f) your marital or relationship situation, and (g) whether you could donate fetal tissue for medical research (see Appendix A, question 19).

Dependent Variables

1. Approval of fetal tissue research was measured with the following question: "Do you believe tissue taken from aborted fetuses should or should not be used for medical research?" A seven point Likert scale was used to indicate responses. The response categories ranged from (a) definitely should, to (b) definitely should not. "Definitely should" was scored 1 and "definitely should not" was scored 7 (see Appendix A, question 16).

2. Willingness to donate fetal tissue was measured with the following question: "If *you*

were going to have an abortion, for any reason, how willing or unwilling would you be to donate fetal tissue for medical research?" A seven point Likert scale was used to indicate responses. The response categories ranged from (a) extremely willing to (b) extremely unwilling. "Extremely willing" was scored 1 and "extremely unwilling" was scored 7 (see Appendix A, question 22).

3. Importance of a reason in an abortion decision was measured with the following question: "There are many different reasons why women choose to have an abortion. Listed below are some reasons women might give for having an abortion. If you were making a decision about having an abortion, how would you rank the following reasons from 1 (*most important*) to 7 (*least important*)?" The seven reasons listed were: (a) your financial situation, (b) your educational situation and goals, (c) your job or career situation and goals, (d) how your parents feel about the pregnancy, (e) how the father feels about the pregnancy, (f) your marital or relationship situation and (g) whether you could donate fetal tissue for medical research (see Appendix A, question 19).

Additional Independent Variables

1. Age was measured with the following fill-in question: "What age did you turn on your last birthday?" (see Appendix A, question 1).

2. Income is defined as the total yearly income of the respondent's household. Income was measured with the following question: "Approximately, what is the total yearly income for your household? (Add up income for yourself and each person in your household)" The six response categories are: (a) \$0-\$9,999 a year, (b) \$10,000-\$19,999 a year, (c) \$20,000-\$29,999 a year, (d) \$30,000-\$39,999 a year, (e) \$40,000-49,999 a year, (f) \$50,000 and over a year (see Appendix A, question 3).

3. Marital status was measured with the following question: "Are you: (a) single/never married, (b) married, (c) divorced (d) separated, (e) widowed?" This variable was recoded,

and a dummy variable was created and coded as 1 for “married” and 0 for all other categories (see Appendix A, question 2). This was done to measure the added stigma of being pregnant and unmarried.

4. Educational attainment was measured with the following question: “What is the highest grade of school you have completed?” The six response categories consisted of: (a) less than 9th grade, (b) 9th to 11th grade, (c) 12th grade, (d) some college, (e) college graduate, and (f) postgraduate (see Appendix A, question 5).

5. Ethnic identity was measured with the following question: “With which ethnic group do you identify most closely?” The five response categories consisted of: (a) Anglo-American, (b) Hispanic-American, (c) African-American, (d) Asian-American and (e) other (please specify). This variable was recoded and a dummy variable was created and coded as 1 for “Hispanic-American” and 0 for all other categories (see Appendix A, question 6).

6. Religion was measured with the following question: “What is your religious affiliation?” The nine response categories consisted of: (a) Protestant, (b) Catholic, (c) Jewish, (d) evangelical Christian, (e) agnostic, (f) Buddhist, (g) atheist, (h) Muslim and (i) other (asked respondent to please specify). This variable was recoded and a dummy variable was created and coded as 1 for “Catholic” and 0 for all other categories (see Appendix A, question 8). The rationale for this was that Catholics are likely to have been affected by the strong opposition to abortion advocated by the Catholic church.

7. Number of abortions is defined as the number of elective abortions the respondent has had. Number of abortions was measured with the following fill-in question: “How many abortions have you had?” This variable was recoded, and a dummy variable was created and coded as 1 for “prior abortion” (those who have had an abortion) and 0 for “no prior abortion” (those who had not had an abortion) (see Appendix A, question 33).

8. Prior knowledge of fetal tissue research is defined as whether or not the respondent

had ever heard of fetal tissue research prior to the survey. Prior knowledge of fetal tissue research was measured with the following question: "Have you ever heard of fetal tissue research before today?" The three response categories consisted of: (a) yes, (b) no, and (c) not sure. This variable was recoded, and a dummy variable was created and coded as 1 for "yes" and 0 for "no" and not sure categories (see Appendix A, question 34).

Table 2 lists all the variables used in the analyses.

Table 2: Independent, Dependent and Additional Independent Variables

Independent Variables

Approval of Abortion (ABATTD1)

Disease Involvement (RELATSCL)

Approval of Organ Donation (ORGDONAP)

Donation of Fetal Tissue as a Factor in Abortion Decision Making (DONSIT)

Dependent Variables

Approval of Fetal Tissue Research (FTRDONAP)

Willingness to Donate Fetal Tissue for Research (ABDON)

Importance of a Reason in an Abortion Decision (DONSIT versus PARENSIT)

Additional Independent Variables

Age (AGE)

Income (INCOME)

Married/Non-Married (MARDUM)

Educational Attainment (EDCOMP)

Hispanic/Non-Hispanic (HISPDUM1)

Catholic/Non-Catholic (RELIGDUM)

Prior Abortion/No Prior Abortion (PREVABRT)

Prior Knowledge of Fetal Tissue Research/No Prior Knowledge (FTRKNOWL)

Methods of Analyses

Quantitative analyses are employed in this study. The Statistical Package for the Social Sciences (SPSS) PC version was used for data analysis and statistical tests included multiple regression, factor analysis and a Wilcoxon ranked-pairs test.

Multiple regression is used in order to make predictions and to define the relationship between two or more variables. It is a statistical technique that assumes interval or ratio level data. While multiple regression and factor analysis both assume interval or ratio level data for the dependent and independent variables, some statisticians use these techniques with ordinal data (Afifi & Clark, 1990). This practice is quite common. Indeed, Babbie states that often the assumptions (including that of interval level data) are seldom satisfied (Babbie, 1995).

The problem with this practice lies with distortions in the correlations among variables due to the treatment of ordinal-level variables as interval level. However, as Kim and Mueller (1990) state, "Fortunately, the correlation coefficients are fairly robust with respect to ordinal distortions in the measurement. Hence, as long as one can assume that the distortions introduced by assigning numeric values to ordinal categories are believed to be *not* very substantial, treating ordinal variables as if they are metric variables can be justified" (p. 74). They go on to add that the larger the number of categories in a variable, generally the less ordinal distortion there is. Each of the questions involved in this study using multiple regression or factor analysis, has five or seven categories, which suggests that the ordinal distortion present in the correlations among the questions is probably small enough not to present a significant problem to the analysis.

Regression analysis enables one to measure two things. One, the measure R -squared (R^2), which shows the percentage of variance in the dependent variable explained by the independent and control variables, and two, it can measure the direction and size of the effect of each variable on a dependent variable (Neuman, 1994). The unstandardized regression coefficient b measures the effect of an independent or control variable on the dependent variable.

Using the unstandardized regression coefficient one is able to interpret the effects of an independent or control variable using their original units. The standardized regression coefficient beta (β) allows the researcher to compare the relative strengths of each independent or control variable on the dependent variable.

Factor analysis is a statistical technique that is used to identify or measure a common construct underlying a set of items or indicators. (Abercrombie, Hill & Turner, 1984; Neuman, 1994). At least five indicators are recommended, and the factor analysis results can tell the researcher which indicators are associated with or "load with" which factors. The analysis also produces factor scores which represent the strength of each indicator in relation to the underlying construct. These factor scores can be used to construct scales or indexes (Neuman, 1994).

A nonparametric test, Wilcoxon, was used to analyze hypothesis 7 because of the true ordinal level of the data. The Wilcoxon ranked-pairs test examines whether the distribution of two paired variables in two related groups is the same (SPSS, Inc., 1993). A correlation matrix of all variables used in the current study is included in Appendix B.

CHAPTER 4

RESULTS

Descriptive Statistics

Subjects ($n=113$) were all female and ranged in age from 18 to 39 (see Figure 4). The respondents' mean age was 23.25 years, with a standard deviation of 4.28 years. Respondents over age 30 were not very well represented. This was probably due to the fact that this was a clinic sample, rather than a private doctor's office. Younger patients are more likely to be uninsured or have low incomes, and thus less likely to afford a visit to a private physician.

As Figure 5 indicates, of the 113 valid (non-missing) responses, 33.6% reported

Figure 4: Respondent's Age

their annual household income as under \$10,000. Additionally, 23.4 % reported a yearly income between \$10,000 to \$19,999, 22.4 % between \$20,000 to 29,999 and only one-fifth of the sample reported household income over \$30,000 a year. This large concentration of lower income households in a primarily young, unmarried clinic population was expected.

As Figure 6 shows, of the 113 valid (non-missing) responses, almost 70 % of respon-

Figure 5: Respondent's Annual Household Income

dents were single and had never been married. About 17 % reported being married, 11.5 % were either divorced or separated and 1.8 % reported being widowed.

Figure 6: Respondent's Marital Status

As Figure 7 illustrates, of the 113 valid (non-missing) responses, 40.5 % of the respondents identified themselves as Anglo-American, 32.4% as Hispanic-American, 11.7% as African-American, 7.2% as Asian-American, and 8.1% identified themselves as another ethnicity.

Figure 7: Respondent's Ethnicity

As Figure 8 indicates, of the 113 valid (non-missing) responses, 10.6% of respondents had less than a high school education. 33.6% of the sample reported completing high school, 45.1% reported completing some college education, 9.7% had completed a college degree, and less than 1% had completed postgraduate education.

Figure 8: Respondent's Highest Educational Level Completed

As Figure 9 shows, of the 105 valid (non-missing) responses, the religious affiliation of over half of the respondents was Catholic. Those who identified themselves as Christians

comprised 10.5% of the sample. The category “Other” comprised 25.7% of the sample. This may be due to the fact that there was not a “No Religious Affiliation” category available, although there were categories for both Atheists and Agnostics.

Figure 9: Respondent's Religious Affiliation

As Figure 10 illustrates, of the 110 valid (non-missing) responses, respondents with no political party preference (44.5%) were the largest group. Of these respondents with a political preference, the Democratic party was preferred by 40%, the Republican party preferred by

Figure 10: Respondent's Political Preference

12%, the Independent party was preferred by 1.8%, and .9% preferred another (unspecified) party (see Figure 10).

As Figure 11 indicates, of the 112 valid (non-missing) responses, a majority of the respondents (76.8%) came into the clinic for a pregnancy test. Almost 9% visited the clinic for a contraceptive need and 1.8% came in for health education. Over 12% came into the clinic accompanying a patient (see Figure 11).

Figure 11: Respondent's Reason for Clinic Visit

As Figure 12 illustrates, of the 106 valid (non-missing) responses, most of the respondents (81.1%) reported at least one pregnancy. Of all respondents, 35.8% reported one pregnancy, 22.6% reported two pregnancies and 22.5% reported three or more pregnancies. The data ranged from a low of zero number of pregnancies to a high of nine. Only 18.9% of the sample had never been pregnant.

Figure 13 shows the outcomes of respondents' pregnancies, including live births, miscarriages and abortions. Of the sample, 57% (n=61) reported no live births, whereas 43% (n=46) reported one or more live births. Over one-quarter (n=30) of the sample reported one live birth, and 15% (n=16) reported two or more live births. The number of live births ranged

Figure 12: Respondent's Number of Pregnancies

from zero to four. The majority of the sample, 55.7% (n=59), reported that they had never had an abortion. However, 44.3% (n=47) of the respondents reported having one or more abortions. Of the sample, 27.4% (n=29) reported having one abortion, 14.2% (n=15) reported having two abortions and only 2.8% (n=3) reported having three or four. The number of abortions ranged from zero to four.

Additionally, 72.9% (n=78) of respondents reported never having miscarried a preg-

Figure 13: Respondent's Pregnancy History

nancy whereas 27% ($n=29$) of the sample reported having one or more miscarriages. The number of miscarriages ranged from zero to eight.

As Figure 14 indicates, of the 109 valid (non-missing) responses, the respondents were asked whether they had “ever heard of fetal tissue research before today?” Almost 35% of the sample reported that they had heard of fetal tissue research. However, the majority of respondents (58.7%) said they had not heard of it. An additional 6.4% reported that they were unsure whether or not they had heard of fetal tissue research.

Figure 14: Has Respondent Previously Heard of Fetal Tissue Research?

As Figure 15 indicates, respondents were asked two questions about whether they believed fetal tissue should or should not be used for medical research. The two questions were identical except for the source of the fetal tissue: one source was miscarriages, the other source was elective abortions. There was slightly higher approval for medical research using tissue from miscarried fetuses (53.7%, $n=59$) rather than from electively aborted fetuses (49.5%, $n=55$). Similarly, there was slightly less disapproval for using tissue from miscarriage fetuses (15.4%, $n=17$) rather than from electively aborted fetuses (20.1%, $n=23$).

Figure 15: Respondent's Attitude Toward Use of Fetal Tissue in Medical Research

As Figure 16 indicates, respondents were asked three separate questions about whether they would be willing to donate fetal tissue for medical research if they were having: (a) an abortion that was medically necessary, (b) a spontaneous miscarriage, and (c) an elective abortion. Of the sample who were "somewhat willing" to "extremely willing" to donate, 60.6% (n=66) stated they would be willing to donate from a medically necessary abortion, 59.6%

Figure 16: Respondent's Willingness to Donate Fetal Tissue for Medical Research

(n=65) from a miscarriage and 58.4% (63) from an elective abortion.

With further examination of Figure 16, the source of the fetal tissue (miscarriage, elective or medically necessary abortion) does not appear to affect the respondents' willingness to donate. In fact, an examination of the correlations among the three variables reveals that respondents are very consistent in their willingness to donate fetal tissue, regardless of the circumstances under which the tissue was acquired. The correlation between donating from an elective abortion and a miscarriage is .84, between an elective abortion and a medically necessary abortion .88 and between a miscarriage and a medically necessary abortion is .87. All of these correlations are significant at the $p < .001$ level, one-tailed (see Appendix B).

As Figure 17 illustrates, respondents ranked the importance of seven factors in making a decision about having an abortion on a seven point scale. Respondents ranked "financial situation" as the most important factor with a mean score of 6.2. The six remaining factors, in decreasing order of importance are: "job/career situation and goals" with a mean score of 4.9, "educational situation and goals" with a mean score of 4.4, "marital or relationship situation" with a mean score of 3.9, "father's [partner's] attitude" with a mean score of 3.8, "parent's attitudes" with a mean score of 3.3, and "donation of fetal tissue" with a mean score of 1.6.

Figure 17: Respondent's Rank of Reasons in Making an Abortion Decision

with a mean score of 3.9, "how the father feels about the pregnancy" with a mean score of 3.8, "parents' feelings about the pregnancy" with a mean score of 3.3 and the least important reason "opportunity to donate fetal tissue" with a mean score of 1.6.

As Figure 18 indicates, respondents were asked the question "If you were deciding whether or not to have an abortion, would knowing that fetal tissue could be donated influence your decision at all?" Of the 111 valid (non-missing) responses, almost two-thirds ($n=72$) reported that it would not influence their decision about whether or not to have an abortion, 20.7% ($n=23$) of respondents were "not sure," and 14.4% ($n=16$) of the respondents said "yes" it would have an effect.

A contingency question was then asked for those respondents who answered "yes" it would have an effect. Of these respondents to the contingency question, 57.2% ($n=22$) reported that knowing fetal tissue could be donated would make them somewhat to much less likely to have an abortion, while 42.8% ($n=10$) reported that it would make them somewhat to much more likely to have an abortion.

Figure 18: Influence of Fetal Tissue Donation on Abortion Decision

Respondents were asked seven questions regarding abortion. As discussed earlier, approval for abortion varies given the situational context for it. There is more approval for abortion if it involves the so-called “hard reasons” (i.e., when the woman’s health is endangered by the pregnancy, or the pregnancy is the result of rape or incest) than for “soft reasons” (i.e., there is economic hardship, the woman is unmarried or does not wish to have a child) (Granberg & Granberg, 1980). The results from this study reflect this division of approval (see Figure 19 and Figure 20).

Figure 19: Approval of Abortion for “Hard Reasons”

When looking at approval for abortion for the “hard reasons,” many more respondents somewhat to strongly approve than somewhat to strongly disapprove. Respondents reported the most approval (85.2%, $n=92$) for abortion in the case of rape or incest, 75 % ($n=81$) approval if the woman’s health is threatened and 58.3% ($n=63$) approval of abortion if there is a strong likelihood of fetal deformity. Disapproval for these same factors is much lower in the case of rape or incest at 5.5% ($n=6$), 9.3% ($n=10$) disapproval when the woman’s health is threatened and 11.1% ($n=12$) disapproval for abortion if there is a strong likelihood of fetal deformity (see Figure 19).

When examining respondents' attitudes toward abortion for the "soft reasons," respondents reported about equal approval and disapproval for abortion if the woman was an unmarried teenager: 40% (n=44) approval and 33% (n=36) disapproval; if the woman does not want to be a parent: 40% approval (n=43) and 37% (n=40) disapproval. Approval for abortion was highest (51%, n=55) and disapproval lowest (27%, n=29) if the woman could not afford to raise a child. Respondent's disapproval was highest (46%, n=56) and approval lowest (28%, n=30) for abortion if the woman wanted an abortion for "any reason" (see Figure 20).

Figure 20: Approval of Abortion for "Soft Reasons"

Due to this pattern of responses, a factor analysis was employed to construct a single measure of respondents' attitude toward abortion. As discussed earlier, factor analysis is a statistical technique that is used to identify or measure a common construct underlying a set of items or indicators.

Factor Analytic Construction of Abortion Attitudes

Attitude toward abortion is a complex theoretical construct. Given the complex nature

of this construct, it is best measured by multiple indicators. A factor analysis was used to produce the factor scores for the following seven indicators of attitude towards abortion: "Abortion is a complex issue about which people have many different opinions. For each situation below, please share with us whether you would approve or disapprove of a woman deciding to have an abortion if: " (a) the woman's health is threatened by the pregnancy (HLTH), (b) the pregnancy is a result of rape or incest (RAPE), (c) there is a strong likelihood of fetal deformity (DFRM), (d) the woman cannot afford to raise a child (MONEY), (e) the woman is an unmarried teenager (UNTEEN), (f) the woman does not want to be a parent right now (PART), and (g) the woman has requested an abortion for any reason (ANY).

An initial factor analysis, leaving the number of factors unconstrained, resulted in the expected extraction of two factors, which reflect "hard" and "soft" reasons for abortion approval. A factor analysis (using principal components extraction) that constrained the number of factors to one was also performed. For the purposes of computational simplicity and interpretation the one factor solution was used. Analysis using the two-factor solution is left for future inquiry. Table 3 shows the factor scores for the constrained (one-factor) solution.

Table 3: Factor Scores for Constrained (One-Factor) Solution

Variable Name	Variable Label	Factor Score
HLTH	Woman's health is threatened by the pregnancy	.55548
RAPE	Pregnancy is a result of rape or incest	.64969
DFRM	Strong likelihood of fetal deformity	.69626
MONEY	Woman cannot afford to raise a child	.83928
UNTEEN	Woman is an unmarried teenager	.87928
PART	Woman does not want to be a parent now	.86425
ANY	Woman has simply requested an abortion for any reason	.84846

To create the abortion attitude scale, each respondent's score for abortion attitude was multiplied by the factor score for each variable, as follows: $ABATTD1 = (HLTH \times .55548) + (RAPE \times .64969) + (DFRM \times .69626) + (MONEY \times .83928) + (UNTEEN \times .87928) + (PART \times .86425) + (ANY \times .84846)$. ABATTD1 indicates respondent's abortion attitude.

Inferential Statistics

Multiple Regression Analyses

Multiple regression analyses were used to examine the effect of the independent variables on the dependent variables for six of the seven hypotheses. As stated earlier, multiple regression is used in order to make predictions and to define the relationship between two or more variables. It is a statistical technique using interval or ratio level data. As stated earlier, although multiple regression and factor analysis both assume interval or ratio level data for the dependent and independent variables, some statisticians use these techniques with ordinal data (Afifi & Clark, 1990). Indeed, Babbie states that often the assumptions (including that of interval level data) are seldom satisfied (Babbie, 1995).

Regression analysis enables one to measure two things. One, the measure *R*-squared (R^2), which shows how well a set of variables explains a dependent variable, and two, it can measure the direction and size of the effect of each variable on a dependent variable (Neuman, 1994).

Regression of Level of Approval for Fetal Tissue Research

A multiple regression analysis was performed for the dependent variable level of approval for fetal tissue research, in order to test the first three hypotheses. Multicollinearity is

the level at which the independent (or control) variables in a regression equation are highly intercorrelated (Berry & Feldman, 1990). A check for multicollinearity among the variables using a zero order correlation was performed (see Appendix B). All the correlations were weak, ranging from -.331 to .573, indicating that there are no problems with multicollinearity.

Table 4 shows the result of the multiple regression analysis for level of approval for fetal tissue research. The percentage of variance in the dependent variable (R^2) was 50.2%.

Table 4: Regression of Level of Approval for Fetal Tissue Research

Variable	b	SE B	Beta	T	Sig T
ABATTD1	.890	.200	.433	4.448	.000**
RELATSCL	-.030	.025	-.114	-1.170	.246
ORGDONAP	.365	.123	.282	2.975	.004**
FTRKNOWL	.410	.429	.092	.955	.343
EDCOMP	-.581	.240	-.230	-2.422	.018*
RELIGDUM	-.965	.403	-.227	-2.393	.019*
INCOME	.136	.126	.099	1.077	.285
AGE	-.003	.051	-.005	-.059	.953
HISPDUM1	.061	.442	.013	.139	.890
MARDUM	-.003	.503	-.001	-.005	.996
PREVABRT	-.147	.399	.034	-.367	.715
(Constant)	4.668	1.453		3.212	.002

R-square (R^2) .502

* $p < .05$

** $p < .01$

ABATTD1	approval of abortion factor analyzed scale
ORGDONAP	respondent's opinion on organ donation in general
RELATSCL	disease involvement score of respondent
FTRKNOW*	prior knowledge about fetal tissue/no prior knowledge dummy variable
EDCOMP*	highest grade respondent has completed
RELIGDUM*	Catholic/non-Catholic dummy variable
INCOME*	total yearly household income
AGE*	age of respondent
HISPDUM1*	Hispanic/non-Hispanic dummy variable
MARDUM*	married/non-married dummy variable
PREVABRT*	prior abortion/no prior abortion dummy variable
* Additional Independent Variables	

The analysis of variance table of the regression analysis was used to test if one or more of the variables were statistically significantly related to the dependent variable. The overall F test statistic was 6.50 with F being significant at a less than the .0001 level. Therefore, at least one of the variables was found to be statistically significant in relation to the dependent variable.

Hypothesis 1: There is a positive relationship between the level of approval for abortion and level of approval for fetal tissue research.

As Table 4 presents, the effects of level of approval for abortion (ABATTD1) on level of approval for fetal tissue research were statistically significant controlling for all variables in the regression analysis ($b=.433, p<.001$). This means that as level of approval of abortion increases, approval for fetal tissue research also increases. Thus the first hypothesis was supported.

Hypothesis 2: There is a positive relationship between the level of disease involvement and the level of approval for fetal tissue research.

As Table 4 shows, the effect of the level of disease involvement (RELATSCL) was not statistically significant on level of approval for fetal tissue research ($b=-.030, p=.246$). Therefore, no evidence was found to support a relationship between level of disease involvement and approval of fetal tissue research. This second hypothesis was not supported.

Hypothesis 3: There is a positive relationship between the level of approval for organ donation and the level of approval for fetal tissue research.

Table 4 shows that the effect of approval for organ donation (ORGDONAP) on level of approval for fetal tissue research was statistically significant ($b=.365, p=.004$). This means that those who approve of organ donation are more likely to approve of fetal tissue research. The third hypothesis was supported.

Additional independent variables.

Although the additional independent variables are not used to test any hypotheses in this study, it is interesting to note the relationship, if any to the dependent variable. The effect of the

additional independent variable level of educational attainment (EDCOMP) on level of approval for fetal tissue research was statistically significant ($b = -.581, p = .018$). This result shows that the higher the educational level of the respondent, the higher the level of approval for fetal tissue research. Another independent variable Catholic/non-Catholic (RELIGDUM) was also positively related to the dependent variable (FTRDONAP) and its effect was statistically significant ($b = .965, p = .019$). This means that respondents who identified themselves as Catholic were more likely to approve of fetal tissue research.

Other independent variables including age (AGE), income (INCOME), married/non-married (MARDUM), Hispanic/Non-Hispanic (HISPDUM1), prior abortion/no prior abortion (PREVABRT), prior knowledge of fetal tissue research/no prior knowledge (FTRKNOWL), did not have statistically significant relationships with level of approval for fetal tissue research ($p = .953, p = .285, p = .996, p = .890, p = .715, p = .343$, respectively). This means that no evidence was found to support a relationship between age, income, marital status, identifying oneself as Hispanic, having had a previous abortion, and having had prior knowledge of fetal tissue research, and level of approval for fetal tissue research.

Regression of Willingness to Donate Fetal Tissue

First, a check for multicollinearity among the variables using a zero order correlation was performed (see Appendix B). Again, all the correlations were weak, ranging from $-.337$ to $.509$, indicating that there are no problems with multicollinearity.

The percentage of variance in the dependent variable (R^2) was 48.1%. The analysis of variance table of the regression analysis was used to test if one or more independent variables were statistically significantly related to the dependent variable. The overall F test statistic was 5.91 with F being significant at the .0001 level. Therefore, at least one of the variables was found to be statistically significant in relation to the dependent variable.

Table 5: Regression of Willingness to Donate Fetal Tissue for Medical Research

Variable	b	SE B	Beta	T	Sig T
ABATTD1	.762	.208	.366	3.665	.001**
RELATSCL	-.004	.026	-.015	-.147	.883
ORGDONAP	.384	.128	.292	3.003	.004**
FTRKNOWL	-.050	.448	-.011	-.111	.912
EDCOMP	-.462	.254	-.177	-1.822	.073
RELIGDUM	-.518	.421	-.120	-1.231	.222
INCOME	.115	.131	.083	.876	.384
AGE	-.056	.054	-.100	-1.028	.308
HISPDUM1	.089	.461	.019	.194	.847
MARDUM	-1.004	.523	-.184	-1.920	.059
PREVABRT	.016	.416	.004	.039	.969
(Constant)	5.407	1.509		3.583	.001

R-square (R^2) .481

* $p < .05$

** $p < .01$

ABATTD1	approval of abortion factor analyzed scale
ORGDONAP	respondent's opinion on organ donation in general
RELATSCL	disease involvement score of respondent
FTRKNOW*	prior knowledge about fetal tissue/no prior knowledge dummy variable
EDCOMP*	highest grade respondent has completed
RELIGDUM*	Catholic/non-Catholic dummy variable
INCOME*	total yearly household income
AGE*	age of respondent
HISPDUM1*	Hispanic/non-Hispanic dummy variable
MARDUM*	married/non-married dummy variable
PREVABRT*	prior abortion/no prior abortion dummy variable
* Additional independent variables	

Hypothesis 5: There is a positive relationship between the level of disease involvement and the level of willingness to donate fetal tissue for research.

As Table 5 indicates, the effect of level of disease involvement (RELATSCL) on willingness to donate fetal tissue was not statistically significant ($b = -.004$, $p = .883$). Therefore, no evidence was found to support a relationship between disease involvement and willingness to donate fetal tissue for research. The fifth hypothesis was not supported.

Hypothesis 6: There is a positive relationship between level of approval for organ donation and the level of willingness to donate fetal tissue for research.

Table 5 shows that the effect of level of approval for organ donation (ORGDONAP) on willingness to donate fetal tissue for research was statistically significant ($b=.384, p=.004$). This means that as approval of organ donation increases, willingness to donate fetal tissue for research also increases. The sixth hypothesis was supported.

Additional independent variables.

As noted, although the additional independent variables are not used to test any hypotheses in this study, it is interesting to note the relationship, if any, to the dependent variable. As Table 5 shows, all of the additional independent variables were not significant. The variables included education (EDCOMP), married/non-married (MARDUM), age (AGE), income (INCOME), Catholic/Non-Catholic (RELIGDUM), Hispanic/Non-Hispanic (HISPDUM1), prior abortion/no prior abortion (PREVABRT), prior knowledge of fetal tissue research/no prior knowledge (FTRKNOWL), did not have statistically significant relationships with level of approval for fetal tissue research ($p=.073, p=.059, p=.308, p=.384, p=.222, p=.847, p=.969, p=.912$, respectively). This means that no evidence was found to support a relationship between age, income, identifying oneself as Catholic, identifying oneself as Hispanic, having had a previous abortion, and having had prior knowledge of fetal tissue research, and level of approval for fetal tissue research.

Fetal Tissue Donation and Abortion Decision Making

In order to test Hypothesis 7, respondents were asked to rank seven reasons, in order of importance, that might be a factor if they were deciding to have an abortion.

Hypothesis 7 stated that the opportunity to donate fetal tissue for research is the least important reason (of the seven reasons identified) in making a decision about whether or not to

have an abortion. This means that opportunity to donate fetal tissue will be ranked as less important than how respondents' parents feel about the pregnancy. This was tested using a Wilcoxon ranked-pairs statistic. This nonparametric test was used because of the explicit ordinal level nature of the data. Table 6 lists the mean and median ranking for each of the seven variables. The test comparing the median rank for the last two reasons (how parents feel about the pregnancy versus opportunity to donate fetal tissue) provided support for the hypothesis. The Z score for the comparison of the two reasons was $Z=4.5382$ with a significance level of $p<.0001$. The seventh hypothesis was supported.

Table 6: Ranking of Factors Important in Abortion Decision Making

Factor	Median	Mean Rank
Financial Situation	1.0	1.797
Job/Career Situation/Goals	3.0	3.153
Educational Situation/Goals	3.0	3.576
Marital/Relationship Situation	5.0	4.102
How Partner Feels About the Pregnancy	5.0	4.186
How Parents Feel about the Pregnancy	6.0	4.746
Opportunity to Donate Fetal Tissue	7.0	6.441

CHAPTER 5

DISCUSSION

The use of human fetal tissue for medical research purposes is a highly controversial social issue that is tied to the politics of abortion (Gold & Lehrman, 1889; Vawter & Caplan, 1992). The debate over the morality of abortion is one of the most divisive issues in American society. It was found in this study that approval of abortion is indeed a predictor of women's attitudes toward fetal tissue research. This means that as women's level of approval for abortion increases, so does their level of approval for fetal tissue research. It appears that to understand women's attitudes toward fetal tissue use in research it is important to have an understanding of their abortion attitudes.

According to the sociological concept of the definition of the situation, which holds that individuals act toward social objects based on the meanings or definitions that they attribute to them, rather than to their intrinsic character (Coser, 1977), how women define the products of conception is key in understanding their attitudes toward abortion. This suggests that women who view the fetus as a collection of cells and tissue, rather than as a baby, are more likely to approve of abortion, and, in turn, to view fetal cells as appropriate, and approve of their use, in medical research.

In addition, there is some evidence in this study that applying a costs and benefits analysis can help better understand women's attitudes towards abortion and subsequently their attitudes towards fetal tissue research. A costs and benefits, or motivational approach assumes that "individuals assess the costs and benefits of making certain responses, including maintaining and expressing certain attitudes" (Weber, 1992, 126). As outlined in Figures 19 and 20, women in this study varied in their approval of abortion based on the "situational context" for it. The result of higher approval for abortion for the so-called "hard reasons" than for "soft reasons"

suggests that women assessed the costs (penalties) and benefits (utilities) of continuing versus terminating a pregnancy, given certain situational factors. Additionally, the use of fetal tissue in medical research—like abortion—is likely to remain a controversial issue and will be subject to the same divisive politics that surround the abortion issue in the United States today.

It was also found that women's willingness to donate fetal tissue for medical research was related to their level of approval for abortion. The reasons for this relationship are likely similar to those for women's attitudes on abortion and fetal tissue research.

According to Gallup (1993), an overwhelming majority of Americans (85 %) support the donation of organs for transplantation. Previous research has linked approval of organ donation to higher educational and income levels. Some medical researchers who are proponents of fetal tissue experiments view fetal cells as the equivalent of vital organs that are available to save lives but that are being thrown away (Thompson, 1992).

It was found in this thesis that as women's approval of organ donation increases so does their level of approval for fetal tissue research. This is consistent with the theory that one of the factors that influence attitudes toward organ donation—defining as acceptable the use of body tissues and organs—is also present in influencing women's attitudes toward fetal tissue research. Again, the concept of the definition of the situation is useful here. For example, some women may not only define the use of body tissues and organs as acceptable and beneficial for medical research but may also define fetal cells as the equivalent to vital organs that are available to save lives. This relationship suggests that an understanding of the issues that apply to organ donation may be useful in examining attitudes toward the donation of fetal tissue.

It was also found that women's approval for organ donation is positively related to their level of willingness to donate fetal tissue for medical research. The reasons for this relationship are probably similar to those for women's attitudes on organ donation and fetal tissue research. This finding supports the view that an understanding of women's attitude toward organ donation

is a predictor of their willingness to donate fetal tissue for medical research.

Living with a chronic disease has both social and psychological consequences for the individual afflicted as well as their family and friends (Seigel, 1987). These consequences were expected to make it more likely for individuals with high disease involvement to have more favorable attitudes towards fetal tissue research than those individuals who are not as involved with the diseases. But this hypothesis was not supported. Likewise, the relationship between disease involvement and level of women's approval for and willingness to donate fetal tissue for medical research was expected to exist. The data, however, also failed to support this hypothesis. One possible reason for this may be that the evidence that fetal tissue cells may be an effective treatment or cure for many diseases was only mentioned briefly to respondents in the cover letter (see Appendix A). This relationship was not emphasized in order to avoid biasing the responses of the respondents. As a result, respondents evaluating the costs and benefits of using fetal tissue in research may have undervalued the potential benefits of the research.

Lastly, this thesis also investigates the opportunity to donate fetal tissue for medical research as an additional factor among a traditional set of reasons when considering whether to have an abortion. Opponents of fetal tissue research have suggested that its use might encourage or influence women to have abortions they might not otherwise have in spite of no evidence of this in over thirty years of research using fetal tissue (Gold & Lehrman, 1989; Vawter & Caplan, 1992). Previous research finds that women take into account multiple factors when deciding to have an abortion and that the reasons for an abortion generally reflect concern about the effects of having a child in their current financial, social, and emotional situation (Baker, 1995; Torres & Forrest, 1988). This process usually involves an implicit or explicit analysis of the costs and benefits of continuing to term versus having an abortion (Baker, 1995; Luker, 1975).

When a woman is assessing the costs and benefits of particular factors in whether or not to have an abortion, it is anticipated that these evaluations will be reflected in the rank order of

the importance of reasons for having an abortion. Those reasons that have high costs and low benefits should be ranked low and those reasons that are associated with low costs and high benefits should be ranked higher. If, for example, the opportunity to donate fetal tissue has costs that outweigh the benefits, especially relative to the other reasons on the list, then it is expected that the opportunity to donate fetal tissue to be the least important reason for having an abortion.

As expected, it was found that the opportunity to donate fetal tissue for medical research was the least important factor in a woman's decision in deciding whether or not to terminate a pregnancy. In fact, the data suggests that it may not even belong in the traditional set of reasons and factors that are important to women when making a decision about an abortion. This is not to say that some women would not "feel better" about their abortion, knowing the fetal cells might be used to help others. However, it is important to make a distinction between a woman *feeling better* about an abortion decision because of tissue donation, and having tissue donation *be a factor* in that woman's decision.

As discussed earlier, women decide to have abortions for reasons that directly affect their current social, emotional, and economic lives (Baker, 1995; Torres & Forrest, 1988), and it is unlikely that the donation of tissue to an anonymous source would fall into that category. This finding has important implications because the evidence suggests that donation of fetal tissue is unlikely to play a significant role in the decision of a woman to have an abortion.

CHAPTER 6

CONCLUSION

This research examined the relationship between women's levels of approval for abortion, organ donation, disease involvement and approval of fetal tissue research and willingness to donate fetal tissue for medical research. In addition, it examined donation of fetal tissue as a factor important to women when making a decision about having an abortion.

This study found that women's approval of and willingness to donate fetal tissue closely mirror their attitudes toward both abortion and organ donation. On a practical level, these relationships suggest that women's abortion attitudes and organ donation attitudes may be useful as a screening factor in determining possible candidates for donation of fetal tissue. No support was found for the relationship between women's level of disease involvement and their approval of or willingness to donate fetal tissue.

Finally, and perhaps most importantly, the opportunity to donate fetal tissue was the least important reason—of seven reasons given—in a woman's decision about whether or not to have an abortion. This finding suggests that the donation of fetal tissue is unlikely to play a significant role in a woman's decision about whether or not to terminate a pregnancy. The implication of this finding is that concerns about fetal tissue research encouraging abortion are likely unfounded and that research in this area under the current ethical guidelines should continue.

Lastly, the significant social, ethical and policy implications of fetal tissue research compel us to further investigate this phenomenon. The potential benefit that research using fetal tissue might bring to so many individuals in society must always be evaluated in the context of the ethical standards and concerns of that same society. The findings in this research indicate that the current policy on fetal tissue research is driven by the politics of abortion. It is clear that

additional empirical research is needed to continue the discussion of this complex, bioethical issue. Recommendations for future research include: larger, more representative samples, the further development of theoretical frameworks and the inclusion of additional theoretically relevant variables.

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APPENDIX A.

Cover Letter, Consent Form and Survey Instrument

May 6, 1993

Dear Survey Participant:

You have been selected at random to participate in this confidential survey. The questions cover a range of topics such as blood donation, organ donation, abortion and medical research using fetal tissue (cells of fetuses from abortions and miscarriages). There is scientific evidence that fetal tissue cells may prove to be an effective treatment for some diseases.

The survey takes about 10 minutes to complete. Since it is anonymous, please do not put your name on the survey. Your participation is completely voluntary and you have the right to refuse to answer any question.

This survey is being conducted for my schoolwork at San Jose State University. Pregnancy Consultation Center has no affiliation with this research.

Thank you very much for your participation in this study.

Christine Chouinard
Graduate Student
Sociology Department
San Jose State University

A campus of The California State University

College of Social Sciences • Department of Sociology • One Washington Square • San José, California 95192-0122 • 408/924-5320

Agreement to Participate in Research

Responsible Investigator: Christine Chouinard, student
Yoko Baba, Ph.D.
Assistant Professor of Sociology

Title of Protocol: Predictors of Women's Attitudes
towards Medical Research Using
Fetal Tissue

I have been asked to participate in a research study investigating women's attitudes toward medical research using fetal tissue. I will be asked to fill out a survey questionnaire provided by the researcher. The survey involves questions regarding education and income, as well as questions concerning attitudes toward abortion and medical research using fetal tissue. Some of the questions are personal and may be difficult to answer. I understand that my participation in filling out this survey is entirely voluntary and that I have the right to refuse to answer any questions and may terminate my participation at any time. I understand that no compensation will be awarded for my participation and there are no expected benefits from my participation in this study. Additionally, I understand that the results of this study may be published, but no information that could identify me will be included.

If you have any questions regarding this study, please feel free to contact Christine Chouinard, the principal investigator at (408) 298-4894. Also, any complaints about the research may be presented to the Sociology Department Chair, Dr. Bob Gliner, at (408) 924-5320. Moreover, any questions or complaints about research, subjects rights, or research-related injury may be presented to Serena Stanford Ph.D., Associate Academic Vice President for Graduate Studies and Research, at (408) 924-2480.

I understand that if I choose not to participate in the study, no service of any kind that I am entitled to will be lost or jeopardized. My participation in this study is voluntary. I may refuse to participate in the study or in any part of the study. If I decide to participate in the study, I am free to withdraw at any time without prejudice to my relationship with San Jose State University or Pregnancy Consultation Center.

I have received a signed and dated copy of the consent form regarding my participation in the study.

The signature of a subject on this document indicates agreement to participate in the study.

The signature of the researcher on this document indicates agreement to include the above named subject in the research and attestation that the subject has been fully informed of her rights.

Subjects' Signature

Date

Investigator's Signature

Date

FTR SURVEY

1. What age did you turn on your last birthday? _____

2. Are you (Check one only):

- ☐ Single/Never married
- ☐ Married
- ☐ Divorced
- ☐ Separated
- ☐ Widowed

3. Approximately, what is the total yearly income for your household?

(Add up income for yourself and each person in your household)

- ☐ \$0 - \$9,999/year
- ☐ \$10,000 - \$19,999/year
- ☐ \$20,000 - \$29,999/year
- ☐ \$30,000 - \$39,999/year
- ☐ \$40,000 - \$49,999/year
- ☐ \$50,000 and over

4. Are you employed? (Check one only)

- ☐ Part time
- ☐ Full time
- ☐ Seasonally
- ☐ Not employed at this time

5. What is the highest grade of school you have completed? (Check one only)

- ☐ Less than 9th grade
- ☐ 9th to 11th grade
- ☐ 12th grade
- ☐ Some college
- ☐ College graduate
- ☐ Postgraduate

6. With which ethnic group do you identify most closely? (Check only one)

- ☐ Anglo-American
- ☐ Hispanic-American
- ☐ African-American
- ☐ Asian-American
- ☐ Other (please specify) _____

7. What is your political preference? (Check one only)

- ☐ Republican
- ☐ Democratic
- ☐ Independent
- ☐ Libertarian
- ☐ Other (please specify) _____
- ☐ I do not prefer any party.

8. What is your religious affiliation? (Check one only)

- ☐ Protestant
- ☐ Catholic
- ☐ Jewish
- ☐ Evangelical Christian
- ☐ Agnostic
- ☐ Buddhist
- ☐ Atheist
- ☐ Muslim
- ☐ Other (please specify) _____

9. Is English your primary language? ☐ Yes ☐ No

10. Do you have a drivers license? ☐ Yes ☐ No

If yes, do you have an organ donor sticker on your license?

☐ Yes ☐ No

11. Have you ever donated blood?

☐ Yes ☐ No ☐ Don't qualify as a donor

If yes, how many times total? _____.

12. For what reason did you come to the clinic today? (Check all that apply)

- ☐ For a pregnancy test
- ☐ For a birth control exam
- ☐ To renew my supply of birth control
- ☐ For health information
- ☐ For counseling about a pregnancy
- ☐ Other (please specify): _____

13. Do you or anyone you know personally have any of the following diseases? (Check all that apply. If you answered yes to any part of question #13, please write in the relationship of the person(s) to you.

	Yes	No	Not sure	Who (example father)
Diabetes.....	_____	_____	_____	_____
Parkinson's Disease....	_____	_____	_____	_____
Alzheimer's Disease....	_____	_____	_____	_____
Huntington's Disease...	_____	_____	_____	_____
AIDS.....	_____	_____	_____	_____
Hepatitis B.....	_____	_____	_____	_____
Cancer	_____	_____	_____	_____

14. Please indicate whether or not you think it is appropriate for an individual to donate blood to others? (Circle one number)

1	2	3	4	5	6	7
Very Appropriate			Not Sure			Not At All Appropriate

15. Please indicate whether or not you think it is appropriate for an individual to donate their body organs to others? (Circle one number)

1	2	3	4	5	6	7
Very Appropriate			Not Sure			Not At All Appropriate

16. Do you believe tissue taken from aborted fetuses should or should not be used for medical research?

1	2	3	4	5	6	7
Definitely Should			Not Sure			Definitely Should Not

17. Do you believe tissue taken from miscarried fetuses should or should not be used for medical research?

18. If you were deciding whether or not to have an abortion, would knowing that fetal tissue could be donated for medical research influence your decision at all?

____ Yes ____ No ____ Not Sure

If yes, would it make you more or less likely to have an abortion?

Why: _____

19. There are many different reasons why women choose to have an abortion.

Listed below are some reason women might give for having an abortion.

If you were making a decision about having an abortion, how would you rank the following reasons from 1 (most important) to 7 (least important)?

- _____ Your financial situation
- _____ Your educational situation and/or goals
- _____ Your job/career situation and/or goals
- _____ How your parents feel about the pregnancy
- _____ How the father feels about the pregnancy
- _____ Your marital or relationship situation
- _____ Whether you could donate the fetal tissue for medical research

For the following questions, please circle the number that best describes your feelings.

20. If you had to have an abortion to save your life, how willing or unwilling would you be to donate fetal tissue for medical research?

21. If you were having a miscarriage, how willing or unwilling would you be to donate fetal tissue for medical research?

22. If you were going to have an abortion, for any reason, how willing or unwilling would you be to donate fetal tissue for medical research?

Abortion is a complex issue about which people have many different opinions. For each situation below, please share with us whether you would approve or disapprove of a woman deciding to have an abortion if:

23. The woman's health is threatened by the pregnancy

24. The woman is pregnant as a result of rape or incest

25. There is a strong likelihood of fetal deformity

26. The woman cannot afford to raise a child

27. The woman is an unmarried teenager

28. The woman does not want to be a parent right now

29. The woman has simply requested an abortion for any reason

1	2	3	4	5
Strongly Approve	Somewhat Approve	Not Sure	Somewhat Disapprove	Strongly Disapprove

30. How many times have you been pregnant? (Write in) _____.

31. How many live births have you had? (Write in) _____.

32. How many miscarriages have you had? (Write in) _____.

33. How many abortions have you had? (Write in) _____.

34. Have you ever heard of fetal tissue research before today?

____ Yes ____ No ____ Not Sure

APPENDIX B.

Correlation Matrix of Variables Used in the Analysis

Correlation of Attitudes Toward Fetal Tissue Research

Variables	FTRDONOP	ABATTD1	ORGDONAP	RELATSCL	ABORTDUM	FTRKNOWL	EDCOMP	RELIGDUM
FTRDONOP	1.000	.573 .000***	.386 .000***	-.202 .033*	-.200 .035*	-.037 .371	-.331 .001***	-.141 .101
ABATTD1	.573 .000***	1.000	.255 .010*	-.144 .098	-.310 .002**	-.110 .161	-.167 .066	.032 .387
ORGDONAP	.386 .000***	.255 .010*	1.000	-.222 .022*	-.078 .242	-.189 .043*	-.189 .043*	.202 .034*
RELATSCL	-.202 .033*	-.144 .098	-.222 .022*	1.000	-.062 .289	.342 .001***	.126 .129	-.150 .087
ABORTDUM	-.200 .035*	-.310 .002**	-.078 .242	-.062 .289	1.000	.156 .079	.123 .134	-.057 .305
FTRKNOWL	-.037 .371	-.110 .161	-.189 .043*	.342 .001***	.156 .079	1.000	.130 .121	-.204 .032*
EDCOMP	-.331 .001***	-.167 .066	-.189 .043*	.126 .129	.123 .134	.130 .121	1.000	-.050 .325
RELIGDUM	-.141 .101	.032 .387	.202 .034*	-.150 .087	-.057 .305	-.204 .032*	-.050 .325	1.000
INCOME	.084 .226	.167 .066	-.182 .049*	-.026 .406	-.162 .071	.036 .372	.237 .015*	-.029 .397
AGE	-.164 .069	-.168 .065	-.225 .021*	.129 .123	.023 .419	.233 .017*	.223 .022*	-.115 .150
HISPDUM1	.091 .206	.218 .024*	.151 .086	.073 .256	-.002 .493	-.131 .118	-.204 .032*	.361 .000***
MARDUM	-.158 .077	-.040 .359	-.202 .033*	.194 .039*	-.070 .266	-.038 .367	.251 .011*	.043 .348
PREVABRT	-.200 .035*	-.310 .002**	-.078 .242	-.062 .289	1.000 .000***	.156 .079	.123 .134	-.057 .305

Note. Correlation, 1-tailed significant: * $p > .05$, ** $p > .01$, *** $p > .001$
(continued)

Correlation of Attitudes Toward Fetal Tissue Research (continued)

Variable	INCOME	AGE	HISPDUM1	MARDUM	PREVABRT
FTRDONOP	.084 .226	-.164 .069	.091 .206	-.158 .077	-.200 .035*
ABATTD1	.167 .066	-.168 .065	.218 .024*	-.040 .359	-.310 .002**
ORGDONAP	-.182 .049*	-.225 .021*	.151 .086	-.202 .033*	-.078 .242
RELATSCL	-.026 .406	.129 .123	.073 .256	.194 .039*	-.062 .289
ABORTDUM	-.162 .071	.023 .419	-.002 .493	-.070 .266	1.000 .000***
FTRKNOWL	.036 .372	.233 .017*	-.131 .118	-.038 .367	.156 .079
EDCOMP	.237 .015*	.223 .022*	-.204 .032*	.251 .011*	.123 .134
RELIGDUM	-.029 .397	-.115 .150	.361 .000***	.043 .348	-.057 .305
INCOME	1.000 .	-.027 .403	-.043 .349	.093 .201	-.162 .071
AGE	-.027 .403	1.000 .	-.059 .297	.278 .005**	.023 .419
HISPDUM1	-.043 .349	-.059 .297	1.000 .	-.013 .452	-.002 .493
MARDUM	.093 .201	.278 .005**	-.013 .452	1.000 .	-.070 .266
PREVABRT	-.162 .071	.023 .419	-.002 .493	-.070 .266	1.000 .

Note. Correlation, 1-tailed significant: *p> .05, **p> .01, ***p> .001

Correlation of Willingness to Donate Fetal Tissue

Variable	ABDON	ABATTD1	ORGDONAP	RELATSCL	ABORTDUM	FTRKNOWL	EDCOMP	RELIGDUM
ABDON	1.000 .	.509 .000***	.444 .000***	-.185 .048*	-.144 .098	-.120 .141	-.337 .001***	-.018 .435
ABATTD1	.509 .000***	1.000 .	.251 .011*	-.140 .104	-.307 .003**	-.107 .170	-.160 .075	.038 .368
ORGDONAP	.444 .000***	.251 .011**	1.000 .	-.216 .026*	-.068 .271	-.183 .050*	-.174 .059	.216 .026*
RELATSCL	-.185 .048*	-.140 .104	-.216 .026*	1.000 .	-.070 .266	.338 .001***	.114 .155	-.160 .075
ABORTDUM	-.144 .098	-.307 .003**	-.068 .271	-.070 .266	1.000 .	.149 .090	.106 .171	-.069 .269
FTRKNOWL	-.120 .141	-.107 .170	-.183 .050*	.338 .001***	.149 .090	1.000 .	.117 .148	-.215 .026*
EDCOMP	-.337 .001***	-.160 .075	-.174 .059	.114 .155	.106 .171	.117 .148	1.000 .	-.075 .251
RELIGDUM	-.018 .435	.038 .368	.216 .026*	-.160 .075	-.069 .269	-.215 .026*	-.075 .251	1.000 .
INCOME	.045 .343	.174 .059	-.173 .060	-.035 .377	-.175 .058	.027 .403	.221 .023*	-.042 .353
AGE	-.329 .001***	-.177 .056	-.243 .014*	.141 .103	.037 .370	.248 .012*	.258 .010*	-.100 .185
HISPDUM1	.149 .090	.223 .022*	.160 .075	.068 .273	-.010 .466	-.138 .108	-.224 .022*	.355 .001***
MARDUM	-.328 .001***	-.038 .368	-.198 .037*	.191 .043*	-.075 .250	-.042 .353	.245 .013*	.038 .369
PREVABRT	-.144 .098	-.307 .003**	-.068 .271	-.070 .266	1.000 .000***	.149 .090	.106 .171	-.069 .269

Note. Correlation, 1-tailed significant: *p> .05, **p> .01, ***p> .001
(continued)

Correlation of Willingness to Donate Fetal Tissue (continued)

Variable	INCOME	AGE	HISPDUM1	MARDUM	PREVABRT
ABDON	.045 .343	-.329 .001***	.149 .090	-.328 .001***	-.144 .098
ABATTD1	.174 .059	-.177 .056	.223 .022*	-.038 .368	-.307 .003*
ORGDONAP	-.173 .060	-.243 .014*	.160 .075	-.198 .037*	-.068 .271
RELATSCL	-.035 .377	.141 .103	.068 .273	.191 .043*	-.070 .266
ABORTDUM	-.175 .058	.037 .370	-.010 .466	-.075 .250	1.000 .000***
FTRKNOWL	.027 .403	.248 .012*	-.138 .108	-.042 .353	.149 .090
EDCOMP	.221 .023*	.258 .010*	-.224 .022*	.245 .013*	.106 .171
RELIGDUM	-.042 .353	-.100 .185	.355 .001***	.038 .369	-.069 .269
INCOME	1.000 .	-.012 .458	-.052 .320	.088 .216	-.175 .058
AGE	-.012 .458	1.000 .	-.049 .331	.289 .004**	.037 .370
HISPDUM1	-.052 .320	-.049 .331	1.000 .	-.018 .438	-.010 .466
MARDUM	.088 .216	.289 .004**	-.018 .438	1.000 .	-.075 .250
PREVABRT	-.175 .058	.037 .370	-.010 .466	-.075 .250	1.000 .

Note. Correlation, 1-tailed significant: *p> .05, **p> .01, ***p> .001

APPENDIX C.

Permission to Reprint Letter

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