PSYCHOLOGICAL FACTORS CONTRIBUTING TO ABORTION DISTRESS

by

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Abstract

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Dorothy McQuown

Advisor: Professor Harold Wilensky

This dissertation investigated the role of preabortion anxiety level in distress experienced during a suction-curettage abortion performed under local anesthesia. Factors related to preabortion anxiety and to distress were delineated. The contribution of anxiety and distress to physical complications following the abortion were also examined.

Subjects were 248 pregnant women seeking voluntary abortions at a private metropolitan abortion clinic. Subjects were assigned in a controlled order to an experimental and control condition. In the experimental condition women completed study scales and questionnaires both before and after the abortion procedure. In the control condition subjects' participation in the study was requested after the abortion procedure and all measures were completed then. Subjects returned a follow-up questionnaire by mail four weeks after the procedure to report physical and psychological sequelae of the abortion.

Preabortion transitory anxiety level contributed significantly to abortion distress. A number of factors related to preabortion anxiety, including desire for a child, menstrual difficulties, low enjoyment and low acceptance of

sexual intercourse, contraceptive history, and religious devoutness (multiple R = .54). Distress during the abortion was a function of menstrual difficulties, low enjoyment of sex, and contraceptive history, as well as preabortion anxiety level, small uterine size, and having a prior abortion (multiple R = .36). The particular doctor performing the abortion also affected distress during the procedure. Physical complications following the abortion were unrelated to preabortion anxiety and to distress during the procedure.

A number of differences were found between experimental and control groups. Participation in the study prior to the abortion apparently affected choice of type of anesthesia among experimental subjects, with only 12 percent of this group opting for general anesthesia. Control subjects, uninfluenced prior to the abortion by knowledge of having been selected for the study, chose general anesthesia at a significantly higher rate (23%) than experimental subjects. Since general anesthesia patients were not included in the sample, the differences between the two groups were attributed to the different proportions of women in the groups choosing general rather than local anesthesia.

Women reporting distress during the abortion showed characterological tendencies to report negative affect and symptoms in many areas, including menstrual and premenstrual symptoms, low sexual enjoyment, and preabortion anxiety symptoms. Brief counseling might alleviate acute anxiety and distress in some cases. The findings showed that

selection of sensitive and empathic physicians for abortion facilities would reduce abortion distress to some extent.

INTRODUCTION

The Problem

Observations of women undergoing early abortions by means of a suction-curettage method under a local anesthesic show that these patients experience marked differences in physical and emotional distress during the five- to ten-minute procedure. These wide variations in distress appear in women who are free from conditions such as monilia, vaginitis, or cervical stenosis, which can cause differences in sensitivity. Some women report almost no pain or discomfort; they appear alert, talkative, and undergo little mood change during the procedure; and they are eager to get up and walk just afterward. In contrast other women complain of much pain; they withdraw from contact, moan or cry, and become visibly tense or depressed during the procedure; and they must be taken from the procedure room in a wheelchair due to weakness, faintness, or nausea.

The present study investigated factors which contribute to differences in distress during the abortion procedure. These factors included socio-cultural factors, psychological variables related to female sexuality and feminine identification, physical factors associated with reproductive function, and situational factors involved in the pregnancy. The major variable was the degree of anxiety reported prior to the abortion procedure. Anxiety was assumed to serve as an intervening variable between the

biographical variables and the dependent variable, distress during the abortion procedure. It was hypothesized that the greater the past sexual difficulties, the greater would be the anxiety level immediately prior to the abortion procedure; anxiety level would contribute to the distress during the abortion; and both anxiety and distress would be related to post-abortion physical complications reported four weeks after the procedure. By determining the degree and kind of variables that contribute to abortion distress, effective means of reducing such distress may be developed.

Historical Perspectives in Abortion Research

The social context has had profound influence on abortion research. Prior to the liberalization of abortion laws in 1967, psychological research in abortion was carried out under severe limitations and was generated in an atmosphere of great hypocrisy and emotionalism (White, 1966). Between sixty and ninety percent of the estimated one million abortions in the United States each year were performed illegally (Calderone, 1958).

The population of women who were available as subjects in abortion studies was restricted to those few approved for therapeutic abortions on medical grounds or to those women who sought treatment for physical and emotional complications following an illegal abortion (Newman, Beck, & Lewit, 1971). In addition, women in the higher educational and socioeconomic brackets far outnumbered other women in obtaining therapeutic abortions (Gebhard, Pomeroy,

Martin, & Christenson, 1958) and more often had the money and know-how to secure illegal ones (White, 1966). As a result studies of abortion usually focused on well-educated middle and upperclass white women who were Jewish or Protestant by religion (Ford, Castelnuovo-Tedesco, & Long, 1971). These samples were hardly representative of women in the United States and the results must be considered in this light.

Psychological Disorder and Abortion

Studies of abortion have also been greatly influenced by an atmosphere of polemics and emotionalism. Deep moral, religious, and legal controversies surround abortion in this society. Out of this atmosphere and the legal status of abortion there grew up assumptions about abortion that served as the theoretical background for psychological research.

In most states a woman could obtain an abortion legally (a therapeutic abortion) only if her life was endangered by the pregnancy. The only true psychiatric indication for abortion was danger of suicide by a woman if the pregnancy continued (White, 1966). A woman, therefore, had to prove to a psychiatrist or hospital board that she was mentally disturbed to the point of suicide in order to undergo a medically safe abortion, unless physical causes to warrant approval for an abortion were present. Under these conditions the notion that a woman who wished to terminate

a pregnancy was mentally disturbed was reinforced. This assumption, greatly supported by emotional bias has persisted despite historical evidence that abortion is a universal phenomenon that has existed in some form in every society (Devereux, 1967). Women seeking abortion have been variously and degradingly described as immature, as suffering from Oedipal conflicts, exaggerated narcissism, exaggerated castrative tendencies, a hostile identification with the mother, high competitiveness with men, and as having underlying hostility as a major problem (Murdock, 1967). Within this framework studies of abortion were limited basically to assessing whether abortion was truly <u>therapeutic</u> for a mentally ill woman. Virtually all studies of abortion prior to late 1960's were of this nature.

Studies of the effects of therapeutic abortion have also been motivated to assess the validity of the myth of negative sequelae of abortion which developed in the clinical literature of psychiatry and psychology (Kummer, 1963). Despite evidence to the contrary this myth has persisted due to its support of the societal taboo against abortion (Shainess, 1968). Helene Deutsch considered any type of abortion, whether therapeutic, illegal, or spontaneous, a psychological trauma for a woman to some extent (White, 1966). Bolter (1962) claimed that in his psychiatric practice he had "never seen a patient who has not had guilt feelings about a previous abortion or illegal abortion [p. 313)." Even Mary Calderone (1958), a progressive

authority on abortion, commented that in most cases legal or illegal abortion is traumatic and can lead to negative consequences. The term post-abortion hangover has been coined to designate a supposed three to six month mild depression subsequent to an abortion and actually covering the period of time until the pregnancy would have reached full-term (Patt, Rappaport, &Barglow, 1969). Delayed reactions to abortion at the time of menopause have been repeatedly predicted but evidence of this result and longitudinal studies to assess its validity have not appeared (Bolter, 1962; Lidz, 1967; Walter, 1970).

Clinical impressions diverging from those stressing guilt and traumatic results from abortion have been expressed also, but to a lesser extent and with seemingly less impact. Mandy (1967) observed that even devout Catholics, in his experience, underwent criminal abortions with little guilt or depression. He saw in a clinic setting a number of women each of whom had experienced as many as 15 to 20 self-induced abortions without any evidence of guilt or serious depressive consequences. Kummer (1963) surveyed 324 psychiatrists with an average of twelve years of practice mostly in southern California. He found that 75 percent of them had seen no moderate or severe psychiatric sequelae of induced therapeutic or illegal abortions. The other 25 percent had seen such sequelae only in rare cases.

Follow-up Studies of Abortion Patients

In contrast to some of the clinical impressions, retrospective studies of the reactions of women to induced abortions have revealed little of a traumatic nature occurring in relation to abortion. It appeared that abortion has been truly psychotherapeutic in most cases where that was the intent. Early data from Kinsey and his colleagues on 442 women from the upper 20 percent of socio-economic groups, most of whom had illegal abortions, showed the following results: seventy-five percent of these women reported no negative consequences; sixteen percent reported negative physical consequences; and only nine percent experienced negative psychological consequences of abortion (Gebhard, et al., 1958). In addition negative effects in terms of subsequent sterility, frigidity, or marital difficulties were not present at all in this group of women. More recent follow-up studies of women having therapeutic hospital abortions on psychiatric grounds corroborate these findings (Simon, Senturia, & Rothman, 1967; Heller and Whittington, 1968; Patt, et al., 1969; Peck and Marcus, 1966).

Several major conclusions appear repeatedly in the follow-up studies of therapeutic abortion patients. Although abortion is a special case in that it involves a woman's femininity and sexuality, it is still a surgical

procedure. Any such procedure that greatly affects a person's body has psychological consequences and can leave psychological scars in some persons (Fleck, 1970). In addition any outcome of a pregnancy, whether it is terminated by birth, spontaneous abortion, or elective abortion, involves readjustment and can be viewed as stressful. Data concerning post-partum psychoses and depressions revealed that carrying a pregnancy to term, especially for a disturbed woman, can be more traumatic and have much more serious consequences than a medically safe legal abortion (Kummer, 1963; Yalom, Lunde, Moos, and Hamburg, 1968). The medically safe abortion was more often a relief or at most a minor stress for such a woman. Post-abortion psychoses were practically unheard of (Fleck, 1970). Although reported incidences of guilt reactions to abortion varied from 0 to 30 percent in different studies, evidence of serious consequences due to guilt was lacking. The critical factors associated with guilt include pre-existing emotional conflicts unrelated to the abortion, the physical set-up for the abortion, attitudes of doctors and hospital staffs, a woman's fear of rejection and negative repercussions from the important persons in her life, and the social atmosphere of mental illness and illegality associated with abortion, rather than the abortion itself (Walter, 1970; White, 1966). In the small number of cases where depression appeared subsequent to abortion (estimates range up to 25 percent of women) it was usually short-lived and self-limiting (Simon,

et al., 1967). Hormonal factors have not been ruled out as in post-partum depressions. Suicides from abortion were almost non-existent (Walter, 1970). Unless pressured into the abortion by a man, a woman did not seem to suffer in her heterosexual relationships due to abortion. Reports of improved sexual relationships following an abortion have been noted with decreased promiscuity and more consistent use of contraception (Patt, et al., 1969; Ford, et al., 1971).

Although follow-up studies uniformly indicated that except in rare cases abortion on psychiatric grounds is genuinely therapeutic, the conclusions must be considered in light of conteminating factors that exist in this research. Most of the studies were retrospective rather than prospective and depended on recall of abortions experienced sometimes many years beforehand (Peck and Marcus, 1966). A self-selecting factor operated in determining which women were available and willing to participate in a follow-up study (Sloane, 1969). A package deal requiring sterilization as the price for a therapeutic abortion at many institutions was also a complication, since sterilization has many more serious consequences than abortion alone. Rarely have controls been implemented for the type of abortion performed, for the attitudes of hospital staff, or for the effects of a woman having to undergo sometimes several psychiatric examinations to prove herself mentally ill enough to be granted a legal abortion (Walter, 1970). As Ford, et al. (1971) concluded, it was virtually impossible

to have objective research in the area of motivation for and consequences of abortion as long as abortions were performed legally under such limited conditions.

Recent Developments in Abortion Research

The changes in abortion legislation which now make more objective research in abortion possible have come about partly as a result of pressure from several sources. These sources include population control groups concerned about environmental quality and species survival, women's groups concerned about a woman's right to control her own body and reproductive capacity, and medical persons concerned about the serious dangers of illegal abortions. There has been a shift away from the concept of abortion-seeking as a symptom of mental illness in a woman and away from the expectation of negative psychological sequelae from abortion.

With the shift away from a mental illness concept of abortion there has been a greater interest in and acceptance of women's ambivalance about pregnancy and motherhood. Concern has arisen as well about the psychological aspects of contraceptive use and the prevalance of unwanted and unplanned pregnancies (Shainess, 1968; Newman, et al., 1971). Estimates of the percent of women who initially rejected a first pregnancy go as high as 85 percent (Walter, 1970); between 15 and 20 percent of in-wedlock births in the U.S. are believed to be unwanted (Newman, et al., 1971); and 44 percent of births to married women in the U.S. between 1966

and 1970 were unplanned (Second Report of Federal Commission, 1972).

In states such as California, where more liberal grounds were established in the Therapeutic Abortion Act of 1967, better controlled follow-up studies of abortion have been undertaken. These studies corroborated previous evidence that there are few serious negative consequences of therapeutic abortion (Brenner, Kirshen, & Didio, 1971; Ford, Castelnuovo-Tedesco, & Long, 1972; Miller and Weisz, 1971). They indicated, however, that women diagnosed as the most disturbed psychiatrically handle an abortion less well than those who are more nearly normal (Ford, et al., 1971; Talen and Kimball, 1972). The fact that samples were varied in terms of race, socioeconomic status, and religion, that the abortion method was taken into consideration, and that control groups of women carrying a pregnancy to term or using contraception successfully were studied as well, adds generalizability to the results.

One concept developed in recent studies is that abortion has positive effects in many cases and has growth-enhancing potential as an organizing event in a woman's life (Patt, et al., 1969; Pine and Schaffer, 1971). Studies of psychological antecedents of unwanted pregnancy and of motivational and decision-making processes involved in continuing versus terminating an unwanted pregnancy are in process (S. Budner, personal communication, October 1972; N. Goldberger, personal communication, November 1972).

Women seeking repeat abortions have been the focus of several recent studies. Attempts have been made to determine factors contributing to repeated contraceptive failure, to repeated exposure to unwanted pregnancies, and to the choice of abortion once unwanted pregnancies have occurred. The results of these studies have indicated that this pattern of abortion recidivism is more complex than simply the expression of unconscious desires for a child, as previously suggested (Lehfeldt, 1959). Aside from true birth control failures and problems due to agencies providing contraceptives, there were personality factors involved in a large percentage of these unwanted pregnancies. One type of woman who avoided the use of birth control was unwilling on moral grounds to deal realistically with her sexual desires (Wolf, 1973). Another type, perhaps more prevalent, was a woman who was impulsive in many areas. This type of woman found it difficult to foresee the consequences of behavior and to plan ahead, which accounted for repeated unwanted pregnancies (Rovinsky, 1972).

The present study continues this new trend in abortion research. In this context in which abortion is beginning to be seen in a positive light as a secondary level of birth control (Brenner, et al., 1971) or as an emergency measure when contraception fails (Tietze, 1969), punitive attitudes toward a woman undergoing an abortion are receding. It becomes possible, therefore, to focus on making the abortion experience comfortable and relatively pleasant for a woman.

Rovinsky (1971),however, in a review of the first eight months of the New York City abortion situation stated:

> ... contrary to wishful thinking, abortion can be a relatively uncomfortable procedure. For early abortion, many patients can be managed adequately with mild sedation and paracervical local anesthesia, but for a considerable number this is not sufficient to provide satisfactory analgesia nor to prevent agitated and abrupt pelvic movements which can only contribute to increasing the complication rate [p. 338).

Possible causes for this discomfort and means for dealing with it aside from analgesics or anesthesias which contribute to other problems, require further investigation.

Statement of Hypotheses

The present study investigated the relationship of a number of variables to distress during a suction-curettage abortion performed under local anesthesia.[1] Distress was defined as pain and discomfort reported by a subject and observed by the nurse involved in the procedure.

Hypothesis 1: The degree of distress during an abortion procedure is a function of the level of anxiety just prior to the procedure.

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[1]Originally the effects of types of staff care on anxiety and distress were to have been investigated. Individual counseling, group counseling, and continuous care of a patient by one counselor throughout the clinic stay were part of the standard procedure. However, individual counseling and continuous care by one counselor were discontinued prior to data collection. All patients received the same type of staff care at the clinic.

Studies of pain have shown that a person's emotional state influences the experience of pain (Mersky and Spear, 1967). Specifically fear or anxiety exacerbate the normal pain expected with physiological changes, such as during labor. Various methods for reducing anxiety have been found to alleviate pain to a very similar extent. These methods include: hypnosis, placebos, psychotherapy, and the tranquilizing and sedative drugs. Even morphine's effectiveness in reducing pain is believed to be due to its anxiety-reducing properties. During an abortion procedure physical distress, such as uterine cramping, is expected. The emotional state of the woman, particularly her anxiety level, is likely to affect the amount of distress she experiences and reports.

Osofsky, Osofsky, Rajan, and Fox (1971) in a follow-up study of abortion patients shortly after the procedure and one month later noted that prior to the procedure one third of the patients were very fearful, one third were moderately so, and one third were not fearful. Relationships were not examined, however, between fear levels and any other variables in the study. Laboratory experiments on uterine motility and studies of childbirth have reported effects of anxiety and fear which have implications for abortion. Several studies have shown that high anxiety and tension levels in the third trimester of pregnancy are associated with long labors (Davids and DeVault, 1962) and with high rates of abnormalities and complications during pregnancy, labor, and delivery (Davids, DeVault, & Talmadge,

1961; Erickson, 1965; Winget and Kapp, 1972). Experimentally induced anxiety and fear have been shown to effect increases in uterine activity (Kelly, 1962a) and to produce two different types of uterine contractions depending on the type of stimulus and the woman's personality (Bardwick and Behrman, 1967). The mechanism through which psychological stress affects uterine motility has been hypothesized as changes in blood levels of hormones (catechol amines), some of which are secreted by the adrenal medulla during emergencies related to fear (Winget and Kapp, 1972). It is likely therefore, that anxiety during an abortion procedure results in increases in uterine contractions or in incoordinate contractions which produce pain and distress. The fact that anxiety during pregnancy has been shown to be directly related to the amount of analgesic required during delivery lends further support to this hypothesis (Zuckerman, Nurnberger, Gardiner, Vandiver, & Barrett, 1963).

The question of whether subjects experience fear or anxiety or some combination of both prior to an abortion is relevant here. Fear is generally assumed to be a reaction to a real threat situation; anxiety, a reaction to stimuli that "arouse hidden and/or unacceptable feelings" in one person but which might be innocuous to someone else (Freedman, Carlsmith, & Sears, 1970). It is assumed for the purposes of this study that anxiety is aroused prior to an abortion procedure. The real danger involved in the abortion is minimal. A sunction-curettage abortion is known to

be safe in terms of complications (Tietze and Lewit, 1972). Women at the particular abortion facility are informed of the safety of the procedure. Individual levels of negative affect before the abortion are assumed to result from personal meanings the abortion has for different women, rather than from actual threat in the situation.

Other negative affects such as guilt, shame, or depression also operate at the time of an abortion and may influence the amount of distress experienced during the procedure. Fine discriminations between these affects are difficult to obtain from subjects, however. In a pilot study by the author in which mood was measured before and after the abortion by means of the Nowlis Mood Adjective Check List (Nowlis, 1965) anxiety was found to be the predominant affect reported by women before the abortion. Depression was reported to a considerably lesser degree and reports of guilt were negligible.

Hypothesis 2: Anxiety prior to the abortion procedure and subsequent distress during it are a function of socio-cultural factors, specifically:

2a) education level and

2b) degree of religious devoutness, particularly within the Roman Catholic, Orthodox Jewish, and Fundamentalist Protestant religions.

Education Level. As Kinsey, Pomeroy, and Martin (1948) indicated, a "raw rating of educational level is the single best indicator of the social stratum of the individual [p. 77]." Past evidence for a preponderance of both

illegal and therapeutic abortion patients coming from the upper educational and socio-economic strata (Gebhard, et al., 1958) indicated that abortion had become more acceptable over the years to women from these brackets. Thus less conflict over and fear of abortion is expected among the better educated and the upper classes (Ford, et al., 1971). Since less educated and lower socioeconomic class women live in subcultures in which back-room-butcher types of abortion and self-induced ones with subsequent complications are more prevalent, they are likely to fear abortion and be anxious about it.

Devoutness. Of the major religions in the United States it is mainly the Roman Catholic Church with its doctrine that the soul is inviolate from the moment of conception that has taken a strong stand against abortion under any circumstances (Lader, 1966). A woman who is devoutly Catholic and who chooses to have an abortion is placed in a moral dilemma with consequent anxiety at the time of the abortion. Women devout in the Orthodox Jewish faith or in fundamentalist Protestant denominations, which also openly condemn abortion, are in a similar situation. Women of other faiths or non-religious ones may have conflicts about abortion based on personal beliefs, but would not have the same strictly religious, deeply-instilled conflict.

Hypothesis 3: Anxiety and subsequent distress are functions of individual experiences related to reproductive functions, in particular:

3a) a history of menstrual difficulties

3b) number of internal gynecological examinations

3c) problems related to the use of contraception

3d) length of pregnancy

3e) a previous abortion under similar clinic circumstances

Menstrual difficulties. Studies of the menstrual cycle and of the relationship between menstrual difficulties and post-partum reactions have yielded results with implications for anxiety and distress during an abortion. Between 50 and 68 percent of girls and young women suffer from dysmenorrhea (Coppen and Kessel, 1963). Although pain during menstruation occurred as frequently in women who were normal as in those diagnosed as neurotic, Moos (1969) concluded that "women who complain of menstrual pain are also more likely to complain of pain at other times during the cycle [p. 23]." Pre-menstrual symptoms on the other hand tended to correlate with neuroticism and abnormal personality traits and were exacerbations of traits present at other times as well (Coppen and Kessel, 1963). When stress occurred during the inter-menstrual phase a woman whether normal or neurotic was likely to experience relatively mild symptoms of the same nature as those that appear in greater severity in the menstrual or pre-menstrual phase. An abortion involving stress directly related to the reproductive organs may likewise elicit anxiety in women who have suffered from menstrual discomforts, as well as symptoms and complaints (distress) in women predisposed to such symptoms

during the menstrual cycle. Irregular menses and prolonged menstrual flow correlated significantly with other menstrual symptoms. Together with early menarche they related to post-partum blues and more serious post-partum reactions (Hamburg, Moos, & Yalom, 1968).

Gynecological examination. Embarrassment, fear, and a sense of vulnerability are reported by women at the time of their first gynecological examination. This examination first occurs for most women in the late teens or early twenties. Unpleasant feeling persist to some degree during later examinations for many women. If the abortion situation is the first time, or one of the first few times, a woman has had a pelvic examination, her anxiety about the novelty of the abortion situation is likely to be greatly increased. The author's observations of women having first pelvic examinations during an abortion procedure revealed many who wept or hid their faces from the doctor. These behaviors were not observed among women experienced with gynecologists. Novelty and strangeness in situations has been observed to produce anxiety in other types of situations (Grinker, 1966).

Problems in the use of contraception. In this study problems in the use of contraception were defined as erratic use of birth control measures, discontinuation of several methods due to symptomotology, or failure to use contraception at all. Attempts to show a relationship between psychological variables and success or failure in the use of

contraceptive methods have not produced clear-cut results. In relation to negative side effects of methods, particularly the pill, it was often difficult to separate hormonal factors from psychological ones. The real dangers and discomforts of most methods cannot be ignored. Most women who discontinued methods were motivated by a pregnancy, by unpleasant side effects, by a change in the relationship with a sexual partner, or by new life circumstances such as a change of residence (Miller, 1970). Symptoms such as depressive reactions, loss of libido, and somatic complaints which appeared in women using both pills and intrauterine devices were believed by some to be psychological in origin and to be related to feelings about interference with fertility (Lidz, 1970; Hamburg, et al., 1968). Difficulties with pill use have been associated with various factors. Some of these factors include a previous psychiatric history and emotional problems during pregnancy (Hamburg, et al., 1968), immaturity, acting out, and sexual attitudes conflicting with those of the sexual partner (Kutner and Duffy, 1970), and low femininity as measured by masculine-feminine scales. There is limited evidence that expulsion of an IUD was related to psychic conflict, since women who expelled them were more likely to be in psychotherapy than those who retained them (Kutner and Duffy, 1970). One conclusion drawn from studies of contraception was that some women with sexual inhibitions and guilt avoided sexual contact through rationalization based on a fear of pregnancy. When contraception which interfered with this rationalization entered

the picture, difficulties with contraceptive methods arose (Lidz, 1970). Women who used no contraception at all tended to be young women just beginning to have intercourse, devoutly Catholic women adhering to church doctrine, and women with conflicts about sex that made it difficult to plan ahead and take responsibility for wanting to have intercourse (Miller, 1970). Bardwick (1971) pointed out that, "Taking the pill can arouse anxiety about one's morality and this anxiety is an emotion that is strongly defended against [p. 56]." Women who use no contraception or who use it irregularly are risking an unplanned pregnancy which may necessitate an abortion. The same conflicts and difficulties related to the use of birth control methods were hypothesized to operate in a more extreme way in contributing to anxiety level prior to an abortion.

Length of pregnancy. Prior to eight weeks of pregnancy cervical dilation during an abortion is painful since the cervix is relatively firm until then. Subsequently, the cervix becomes softer over time and dilation becomes less painful. There is, however, a reverse effect in the extent of fundal cramps experienced during vacuum aspiration. Women less than eight weeks pregnant experience less severe cramps and have shorter-lasting ones after the procedure; women between eleven and twelve weeks pregnant experience more severe cramps during suction and have cramps afterward lasting sometimes into the next day (R. Gibbons, M.D., personal communication, September 29, 1972). The differences in these two types of discomfort may balance each other.

Differences in pain and physical distress in women who are six to twelve weeks pregnant are not expected on purely physical grounds. Personality differences, however, have been noted between women who seek early and late abortions (Ford, et al., 1971; Shaffer and Pine, 1971). Late aborters tended to be younger, more anxious and frightened, more ambivalent about the abortion, and more denying of the pregnancy than early aborters. Factors such as knowledge about abortion and finances operated as well. In these studies late aborters were defined as women more than twelve to fourteen weeks pregnant who required saline abortion procedures. Subjects in this study were no more than twelve weeks pregnant. Late aborters in this sample (those 11 to 12 weeks pregnant) may be more anxious due to greater conflict about the abortion and consequently a longer decision-making period. Anxiety could result also from the breakdown of the defense of denial of the pregnancy or from fears of being too far along for the suction procedure. In that case referral for the more difficult and expensive D and C or saline procedures would be necessary. The author's observations indicated that women who were aware of being near the twelve-week cut-off line for suction abortions were very anxious prior to the abortion.

Previous abortion. Unless severe distress or complications resulted from the previous abortion, the reduced strangeness and novelty of the situation could lead to low anxiety about the abortion. Again the author's experience suggested that this was the case.

Hypothesis 4: Anxiety and subsequent distress are functions of psychological factors related to female sexuality, including:

4a) amount of sexual experience

4b) acceptance of sexuality which includes coital satisfaction

4c) career choice in a stereotypically feminine field

4d) expressed desire to have a child, and

4e) conflict about the abortion.

Amount of sexual experience. Women with limited sexual experience reported more regrets about pre-marital intercourse than more experienced women (Kinsey, Pomeroy, Martin, & Gebhard, 1953) and in one sample were the only women to discontinue intercourse following an abortion (Gebhard, et al., 1958). This latter finding suggests that the abortion had a greater impact on these women than on those more sexually experienced. Those studying female sexuality have stressed the fact that it requires considerable time, learning, and experience for most women to overcome societally-induced inhibitions, fears, and guilt about sexual intercourse and to enjoy unambivalent, anxiety-free intercouse (Kinsey, et al., 1953; Bardwick, 1971). A woman who becomes pregnant and has an abortion at the very start of this process may view the pregnancy as punishment for intercourse. Anxiety and distress in relation to the abortion could be expected under the circumstances.

Acceptance of sexuality. Comparisons of women carrying a pregnancy to term and those using contraception

successfully with women seeking therapeutic abortions showed significant differences in conflict about sexuality and acceptance of it. Abortion patients were much more likely than women in the control groups to express low enjoyment of sex or an overt dislike of intercourse (Ford, et al., 1972). According to Miller and Weisz (1971) they tended to deny responsibility for having intercourse (e.g., "I was under the influence of alcohol [p. 5].") and engaged in intercourse for reasons other than their own pleasure, as for example, to please the sexual partner (Ford, et al., 1971). The abortion patients also experienced intercourse passively as something done to a woman not by her. An experiment by Bardwick and Behrman (1967) demonstrated that sexually anxious, passive, and neurotic women produced a type of uterine contraction different from that of normal women. The study suggests that women unable to accept sexuality may become anxious about an abortion and may experience distress due to unusual uterine activity during the procedure.

Career. The relationship between sex-role identification, pregnancy, and abortion is complex. The assumption here is that a woman's career choice, whether in a field usually considered masculine or feminine, reflects to a great extent her degree of acceptance of the stereotypically feminine sex role of the society. In the past, motherhood has been defined as the normal societal function of a woman (Flappen, 1969). Consequently, desire for an abortion implied that a woman was unfeminine to some degree. More

recently a tolerance has developed for a woman's choice of a career in addition to or instead of motherhood with consequent greater acceptance of abortion. A woman who enters a field of work previously reserved for men is likely to have values that deemphasize motherhood as the main function of a woman and that include abortion as a positive option over unwanted children.

On the other hand women who are housewives or who have chosen typically feminine occupations are apt to experience an abortion as conflicting with their feminine self-concepts and their value systems. The women may opt for abortions for financial reasons, to please a spouse, or to space children, but they are likely to be conflicted about the decision. At the time of the abortion this conflict related to feminine identity may be expressed as anxiety and distress.

Desire for a child. In a sample of 250 women having legal abortions in New York State, Osofsky, et al. (1971) found that 32.6 percent wanted the child and for that reason found the decision for abortion difficult. Although no relationship between the two sets of data was reported, they also found that one third of the sample was very fearful and one third moderately fearful of the procedure. The extent to which these two groups overlap was examined in the present study. Ambivalence about the abortion decision was assumed to increase anxiety before the abortion.

Conflict about the abortion. Conflict about an abortion may stem from the wish for a child, religious beliefs, moral standards, attitudes of family and friends, and fears of bodily harm. Maximum psychological effects occur during the decision-making stage prior to admission to a hospital or clinic for the abortion (Brenner, et al., 1971). Many women express conflict after admission as well, however. A woman who is actively conflicted at the time of the abortion is likely to experience anxiety concommitant with the conflict leading to distress during the procedure.

Hypothesis 5: Anxiety level prior to the abortion and subsequent distress are positively related to immediate and delayed complications from the abortion.

Physical complications. Studies of the medical sequelae of legal abortion by the suction-curettage method under local anesthesia have consistently shown low complications rates (Rovinsky, 1971; Tietze and Lewit, 1972). Gordon (1973) proposed that anxiety leads to noncooperation by an abortion patient and consequently to increased risk of complications such as perforation of the uterus, incomplete abortion, or cervical laceration. In this study complications reported on a follow-up questionnaire four weeks after the procedure were examined in relation to anxiety level, distress, and other study variables.

METHOD

Subjects

A total of 248 pregnant women seeking voluntary abortion by means of the suction-curettage method at a private metropolitan abortion clinic from June 20 to September 8, 1973 participated as subjects. The sample included single and married women between the ages of twenty and twenty-five. The women were either in their first pregnancy or had no more than one prior abortion under local anesthesia in similar clinic circumstances over six months before. Women with prior deliveries or more than one previous abortion were not included. Likewise nonwhite and foreign-born and foreign educated women were excluded to reduce cultural variation in attitudes about abortion and in pain tolerance (Woodrow, et al., 1972). The number of subjects by age, marital status, and prior abortion are presented in Table 1.

To control for effects on abortion distress of selection for the study and contact with researchers prior to the abortion procedure, one third of potential subjects were assigned to a control condition. Control subjects were asked to participate in the study only after the abortion procedure had been completed. Of the 248 subjects in the study, 165 were experimental subjects tested prior to the abortion and 83 served as control subjects tested after the abortion procedure.

TABLE 1

Number of Abortion Patients According to Age, Marital Status, and Prior Abortion

Age	Prior Abortion	Marital Status			Total[a]
		Single	Married	Sep./Div.	
20	11 (14%)	69	6	2	77 (31%)
21	8 (14%)	51	4	3	58 (23%)
22	4 (14%)	23	5	0	28 (12%)
23	3 (8%)	30	7	1	38 (15%)
24	2 (7%)	22	2	4	28 (11%)
25	1 (6%)	14	1	2	17 (7%)
Total	29(12%)	209(85%)	25(10%)	12 (5%)	246[b]

[a] This total excludes prior abortion patients since all are subsumed under marital status.

[b] Two subjects did not report marital status.

In all 404 clinic patients were selected to participate in the study. Of these potential subjects 86 were found subsequently not to meet study criteria and were excluded. Another 70 subjects eliminated themselves from participation. Seven women who were assigned to the experimental group refused to participate for reasons such as being tired from traveling and having to rush to catch a plane after the abortion. Five experimental and one control subject dropped out of the study. The majority were lost, however, due to the subject's choice of general rather than local anesthesia. Distress measures could not be obtained for these 28 experimental and 29 control subjects.

Procedure

Those women who met study criteria were selected from the clinic's patient list each morning. Every third potential subject to register at the clinic during the day was assigned to the control condition. These control subjects were approached and asked to participate in the study after the abortion procedure. As soon as a potential experimental subject had registered at the clinic and had completed the required clinic forms, she was called into an office by one of the two researchers and was asked to be in the study. (See Appendix A for instructions.) Birthplace and recent gynecological problems were recorded. The subject was given a clipboard with the anxiety scale (Self-Evaluation Questionnaire) and a study questionnaire (Patient Information Sheet). She completed these forms in the patient waiting

area and returned them to the researcher. A nurse's rating scale was then attached to her chart.

Subjects followed the usual clinic procedure of attending a group orientation meeting to learn in detail about the abortion procedure and about contraceptive methods. During this meeting the nurse-counselor explained the differences between local and general anesthesia. Each patient then chose one or the other type of anesthesia. The 28 experimental and 29 control subjects who selected general anesthesia were dropped at this point. Patients then moved to another area of the clinic, changed into hospital gowns, and waited as a group for the abortion procedure. When a procedure room was ready the nurse from that room took the chart of the next patient in line and called the patient to the room. Once the woman was prepared for the procedure by a nurse, the next available doctor was summoned to perform the abortion. In summary a subject was called by a particular nurse on the basis of chart position and was seen by the next available doctor. The pairing of subjects with nurses and doctors was due to chance. (See Appendix B for the number of patients seen by each nurse and doctor.)

Measures of distress. Blood pressure, pulse, and respiration rates were recorded for subjects by the nurses both before and after the procedure. These measures were copied from each subject's chart by the researcher during the subject's rest period following the procedure. While lying down during the recovery period subjects completed a

self-distress scale (Self-Rating Scale) indicating the pain and distress experienced during the abortion procedure. They also completed a second questionnaire (Questionnaire II). At this time nurses also rated the subject's observable distress during the procedure (Procedure Rating Scale). The doctors were unable to fill out a comparable rating scale as originally planned due to time pressure and the fact that they focused only minimally on the patient's emotional state during the procedure. The doctor's scale was omitted.

Control subjects. During the recovery period preselected control subjects were approached for the first time and their participation requested just as with experimental subjects. Control subjects completed all study forms after the procedure in the following order: Self-Distress Rating Scale, Anxiety Scale, Patient Information Sheet, and Questionnaire II. Physiological measures were recorded and nurses rated control subjects on distress. Despite the fact that a considerable amount of writing was required of them just after the abortion procedure, control subjects were cooperative. Many of these subjects had seen experimental subjects filling out study questionnaires earlier and were curious about the study. Questionnaires also provided activity which drew attention away from cramps they were experiencing. In fact several patients not selected for the study asked to be allowed to fill out study forms during the recovery period.

Follow-up. When all questionnaires were completed both experimental and control subjects were given a follow-up questionnaire and a stamped, self-addressed envelope. They were asked to complete the form after four weeks and to mail it to the researcher. The date after which it was to be sent was written on the form. In case the form was misplaced during the four week interval, subjects' addresses were obtained on a voluntary basis. Those subjects who offered an address and who did not return the form within a reasonable amount of time were sent a second one. Only two subjects failed to take a follow-up questionnaire from the clinic, although the voluntary basis of participation in the follow-up study was made clear. A total of 141 subjects returned the original questionnaire and 33 subjects responded to a second one sent them.

Scales and Questionnaires

Information pertaining to the independent variables was obtained from two questionnaires and an anxiety scale; dependent variables were measured by means of a self-rating scale, a nurse rating scale, and a follow-up questionnaire. (See Appendix A for measures.)

Anxiety measure. The State-Trait Anxiety Inventory (Spielberger, et al., 1970) was administered to all subjects. The authors state: "The State-Trait Anxiety Inventory (STAI) is comprised of separate self-report scales for measuring two distinct anxiety concepts: state anxiety (A-State) and

trait anxiety (A-Trait)." On the twenty items of the A-Trait scale subjects describe how they feel generally. This scale gives an indication of relatively stable individual differences in anxiety proneness or in the tendency to respond to situations seen as threatening with increases in the level of state anxiety. On the 20 items of the A-State scale subjects indicate how they feel "at a particular moment in time." This scale is a measure of a transitory emotional state characterized by "subjective feelings of tension and apprehension, and heightened autonomic nervous system activity." State anxiety appears in reaction to situations perceived as threatening and may vary in intensity and fluctuate over time. The concepts of state and trait anxiety on which the test is based were developed by Spielberger (1966).

Experimental subjects reported anxiety on both STAI scales prior to the abortion procedure; control subjects completed the two scales subsequent to the abortion. It was not feasible to repeat the A-State scale post-operatively for experimental subjects as originally planned because of time and space limitations at the clinic. Two anxiety scores were computed for each subject: an A-State score and an A-Trait score.

Normative data for the STAI are available for large samples of subjects including college students and high school students. Test-retest reliability data from normative samples revealed reasonably high correlations for the A-Trait scale (ranging from .73 to .86 with time lapses

ranging from 1 hour to 104 days). For the A-State scale, however, these data showed relatively low test-retest correlations (ranging from .16 to .54), in accordance with expected fluctuations in mood over time and in relation to situational factors. Internal consistency measures for both scales determined by means of alpha coefficients show high reliability coefficients (ranging from .83 to .92) for both scales among male and female college samples.

Patient Information Sheet. This questionnaire developed for use in this study augmented the routine clinic chart in gathering information about a subject's history. Data from these two sources related to nine independent variables and included: (a) number of prior abortions, (b) date of last menstrual period, (c) education, (d) occupation, (e) religious background and degree of religious devoutness, (f) number of prior pelvic examinations, (g) contraceptive history, and (h) conflict about the abortion, and (i) desire for a child.

Questionnaire II. The information obtained through this questionnaire pertained to menstrual problems, amount of sexual experience, and acceptance of sexuality (three independent variables). The questionnaire was presented after the abortion to eliminate its effect on measurement of the dependent variables. It also allowed the subjects time to become comfortable with the researchers in order to reveal personal information.

This questionnaire included the Menstrual Distress

Questionnaire (MDQ) developed by Moos (1969). The MDQ, a factor-analytically derived scale, "allows a woman to describe her menstrual symptoms in three phases" of the menstrual cycle: the menstrual, pre-menstrual, and inter-menstrual phases.

Procedure Rating Scale. This measure of distress during the abortion procedure (dependent variable) was completed immediately after the abortion by the nurse present during the procedure. An estimate of the reliability of the measure was determined by the researcher observing and independently rating distress during the abortion. A correlation coefficient of .55 was obtained between the researcher's ratings of distress and z-scores[1] of five nurses' distress ratings. The researcher tended to rate greater distress than the nurses probably as a function of her relative inexperience in observation of the abortion procedure.

Physiological measures including pre and postabortion systolic and diastolic blood pressure, pulse rate and respiration rate were recorded.

Self-Rating Scale. Subjects indicated the amount of pain and distress experienced during the procedure by completing a five-point rating scale. In addition they checked

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[1]Nurses' distress ratings were converted into z-scores based on the mean and standard deviation of each nurse's ratings. These z-scores were used in the correlation to control for systematic differences among nurses in rating distress.

specific complaints experienced during the procedure from among those listed (subject reported dependent variable).

Follow-Up Questionnaire. Subjects took this questionnaire home and returned it by mail at least four weeks after the abortion. It contained information about physical and psychological sequelae of the abortion.

RESULTS

All data were coded and keypunched for computer analysis.[1] Scoring of questionnaire items consisted of a frequency count for suitable items (e.g., number of years of school completed) and a catagorical scoring of 0-1 for dichotomous variables (e.g., whether the subject had a prior abortion or not). Two items concerning a subject's conflict about the abortion and her degree of externalization of responsibility for having intercourse were scored based on ratings by mental health professionals. (See Appendix A for the items and ratings.)

Intercorrelations among all variables were calculated using Pearson Product-Moment correlation coefficients. Correlation analyses by this method were performed for experimental and control subject data separately and together. Missing data for a subject were filled in with the mean of the variable involved. This process was necessary to insure accuracy of multiple regression analyses based on correlations. Since it reduces variability, it resulted in lower correlations than would have occurred otherwise. Two principle axis factor analyses with quartamax orthogonal rotations of factor matrices were used to reduce the many variables under investigation. Multiple regression analyses

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[1]Statistical analyses were performed on an IBM/360 computer at the City College computer center and the City University of New York central computer facility using the PSTAT statistical package.

were performed for three purposes. The first purpose was to determine variables related to anxiety before the abortion procedure. The second was to determine variables contributing to distress during the procedure. The third purpose was a discriminant analysis of experimental and control group differences. These techniques are described further in relation to the specific results of each analysis.

Significance Level

All statistical analyses were performed on the same set of data obtained from subjects in the study. Since these analyses were not independent of each other, reported probabilities must be viewed cautiously within the context of nonindependent analyses. Based on the large number of subjects in the study (N = 248), correlation coefficients of a relatively small magnitude were significant at the .01 level. For example, for all subjects combined (N = 248) a correlation coefficient of .15 was statistically significant, although probably not of practical value. For experimental subjects (N = 165) an r of .19 was significant; for control subjects (N = 83), an r of .26. Because of the large number of nonindependent correlation coefficients computed, some relationships, despite statistical significance, may have occurred due to chance. In interpreting the reported correlations the size of the coefficient as well as the probability level must be taken into consideration.

Factor Analyses

Dependent Variables. The eleven dependent variables

(self- and nurse's ratings of distress and pre- and post-abortion physiological measures) were intercorrelated and the matrix factor analyzed. Principle axis factor analysis techniques yielded three factors: (I) Blood Pressure (BP), (II) Pulse, Respiration and Systolic BP Rates, and (III) Psychological Distress Ratings. The factor loadings of the 11 variables on these three factors are presented in Table 2. No specific hypotheses were made about subjects' physiological responses before and after the abortion. Nevertheless, these measures were considered related to abortion distress and were examined in relation to psychological distress measures.

Factor scores were computed for each subject for Factor III: Psychological Distress Ratings. These factor scores which take into account both the patient's subjective experience of distress during the abortion procedure and the nurse's observation of such distress were used subsequently as the measure of the dependent variable distress during the abortion procedure. Factors I and II which combined pre- and post-abortion physiological measures were not used in further analyses.

Menstrual Distress Questionnaire. The 24 scale scores on the Menstrual Distress Questionnaire (MDQ) were also factor analyzed. The three factors derived from the analysis include: (I) Menstrual (M) and Pre-menstrual (Pre-M) Symptoms, (II) Positive Affect in Menstrual Cycle and Pre-M Symptoms, and (III) Inter-menstrual (Inter-M) Symptoms. The

TABLE 2

Rotated Factor Loadings[a] of the Eleven Dependent Variables (N = 248)

VARIABLE	LOADINGS I	II	III
SYS. BP-pre	.79	.35	--
SYS. BP-post	.73	.28	--
DIAS. BP-pre	.83	--	--
DIAS. BP-post	.79	--	--
PULSE-pre	.24	.59	--
PULSE-post	--	.56	--
RESPIR-pre	--	.45	--
RESPIR-post	--	.44	--
NURSE-DISTRESS	--	--	.48
SELF-DISTRESS-1	--	--	.82
SELF-DISTRESS-2	--	--	.47

[a]Only factor loadings greater than .20 are reported.

factor loadings of the 24 MDQ scales on these three factors are presented in Table 3. Factor scores were computed for each subject for these three factors whose retention was based on their eigen values. These scores were used as independent variable measures of menstrual distress. Factor I was particularly useful in that it offered one overall measure of a subject's menstrual and pre-menstrual symptomotology and discomfort. Factor II represented a subject's positive feelings in relation to her menstrual cycle and a pre-menstrual syndrome as defined by Moos (1969). Factor III indicated a subject's tendency toward complaining about physical symptoms in general, especially types of symptoms associated with the menstrual cycle.

Anxiety and Distress

Since experimental subjects completed the State-Trait Anxiety Inventory prior to the abortion procedure and control subjects subsequent to the procedure, the two groups were not combined for analysis of anxiety level. Momentary anxiety level (A-State) prior to the abortion procedure was of primary interest here, as opposed to general anxiety proneness (A-Trait). Therefore correlations between A-State level and abortion distress, and a multiple regression analysis of A-State, were computed for experimental subjects only.

Hypothesis 1: Anxiety and Abortion Distress: For the 165 experimental subjects A-State scores from the STAI obtained prior to the abortion procedure were correlated with Factor III from the dependent variable factor analysis:

TABLE 3

Rotated Factor Loadings[a] of 24 Menstrual Distress Questionnaire Scales

(N = 248)

SCALE NAME	LOADINGS I	II	III
M Pain	.79	--	--
M CONCENTRATION	.66	.26	--
M Behavior Change	.75	--	--
M Autonomic Reactions	.58	--	--
M Water Retention	.56	--	--
M Negative Affect	.83	--	--
M Arousal	--	.77	--
M Control Scale	.47	--	--
Pre-M Pain	.56	.37	--
Pre-M Concentration	.51	.46	--
Pre-M Behavior Change	.50	.42	.25
Pre-M Autonomic Reactions	.52	--	.30
Pre-M Water Retention	.42	.29	--
Pre-M Negative Affect	.51	.56	--
Pre-M Arousal	--	.73	--
Pre-M Control Scale	.34	--	.24
Inter-M Pain	.29	--	.69
Inter-M Concentration	.33	.40	.28
Inter-M Behavior Change	.25	--	.66
Inter-M Autonomic Reactions	--	--	.47
Inter-M Water Retention	--	--	.61

TABLE 3 Cont'd.

SCALE NAME	LOADINGS I	II	III
Inter-M Negative Affect	.33	.31	.51
Inter-M Arousal	.26	.68	--
Inter-M Control Scale	.21	.22	.44

[a]Only factor loadings of .20 or higher were included.

Psychological Distress Ratings. The correlation of .33 ($p < .001$) was consistent with the hypothesis that a relationship exists between a woman's anxiety level prior to an abortion and the distress she subsequently experiences during the abortion procedure.

Variables Contributing to Anxiety Prior to an Abortion. Predictions were made as to the kinds of factors that would contribute to A-State level before an abortion procedure. Specifically it was hypothesized that anxiety level would be a function of the following variables:

Hypothesis 2: Socio-cultural Factors

a. Education Level
b. Degree of Religious Devoutness, especially within the Catholic, Orthodox Jewish, and Fundamentalist Protestant Religions

Hypothesis 3: Individual Experiences with Reproductive Function

a. Menstrual Difficulties
b. Number of Internal Examinations
c. Problems Related to the Use of Contraceptive Methods
d. Length of Pregnancy
e. Having had a Prior Abortion Under Similar Circumstances

Hypothesis 4: Psychological Factors Related to Female Sexuality

a. Amount of Sexual Experience
b. Acceptance of Sexuality
c. Femininity of Occupation
d. Expressed Desire for a Child
e. Expressed Conflict About the Abortion

These 12 sub-hypotheses were measured in a variety of ways included in 32 questionnaire items.[2] A multiple regression

[2]Means and standard deviations of all variables appear in Appendix B.

analysis yielded thirteen of these items as major contributors to pre-abortion anxiety level. The results of this analysis appear in Table 4. Variables are listed in Table 4 in the order in which they were entered in the equation. The hypothesis number to which each variable relates is included in parentheses by the variable in the table. The multiple R for the multiple regression equation containing these thirteen variables was .54 ($F = 7.24$; $p < .001$).

A step-wise multiple regression process was used in this analysis. Initially all 32 questionnaire measures which were considered to be potential contributors to A-State level before the abortion were correlated with A-State scores. In the first step of the multiple regression analysis the independent variable with the highest absolute correlation with A-State was entered in the equation. In each of a series of subsequent steps the best of the remaining independent variables was entered in the equation, if the variable met the predetermined criterion ($F > 1.5$). The regression ended when all independent variables meeting the criterion had been entered in the equation. In this process an independent variable, although correlated with A-State level, could be deleted from the equation if it had been weakened too much to meet the criterion for remaining ($F > 1.0$) by overlap with a previously entered variable. Although there was overlap among independent variables based on their correlation with each other, no variable was weakened to the point of deletion from this equation.

TABLE 4

Multiple Regression Analysis of A-State Level (STAI) Prior to the Abortion Procedure (N = 165)

Variable (Hyp.No.)	Raw Coeffic-ient	Beta Coeffic-ient	Simple Corela-tion	Partial Corela-tion
Desire for Child(4d)	2.73	.27	.29	.29
Enjoy Sex (4b)	-1.28	-.11	-.25	-.10
M and Pre-M (3a)	2.41	.22	.24	.23
Unusual B.Control Symptoms (3c)	-2.49	-.09	-.13	-.10
Heavy M. Flow (3a)	2.57	.11	.17	.12
Number B. Control Methods (3c)	-1.87	-.18	-.19	-.17
Effectiveness B. Control Longest (3c)	1.11	.15	-.01	.14
Regular Sex (4a)	2.11	.12	.05	.13
Years of Sex (4a)	- .65	-.12	-.09	-.12
Inter-M Symptoms (3a)	1.19	.12	.10	.12
External Respons-ibility for Sex (4b)	1.98	.09	.17	.10
Orgasm (4b)	-1.04	-.09	-.16	-.10
Devoutness (2b)	1.54	.08	.14	.09

Note: Multiple R for the equation is .54; constant is -132.1.

The raw coefficients in Table 4 are regesssion weights for raw scores on the variables and are necessary for predicting anxiety scores in a comparable sample of abortion patients. The beta coefficients are standardized regression weights for the variables and permit direct comparison of the predictive value of each variable in the equation. Simple correlations are Pearson product-moment correlation coefficients computed for A-State level and each variable separately; partial correlations show the relationship between A-State level and each variable within the context of all thirteen variables, but with the remaining twelve variables held constant.

There was redundancy of variables in the multiple regression equation. Several of the variables entered in the equation were measures of the same hypothesis and were correlated with each other. As a result of the redundancy each overlapping variable contributed less to the prediction of A-State level than it would have if uncorrelated with other variables in the analysis. A comparison of the simple correlation of each variable with A-State level and its partial correlation in the multiple regression equation reveals the effect of redundancy on that variable. Of the thirteen variables only desire for a child, the strongest predictor, remained unaffected in its contribution to A-State level by inclusion of other variables in the equation. Menstrual and premenstrual symptoms, heaviness of menstrual flow, and intermenstrual symptoms were related to each other,

as were enjoyment of sexual intercourse, frequency of orgasm, and low externalization of responsibility for intercourse. In the latter case each of the three variables was weakened considerably in predicting A-State level by overlap. However, combined as a measure of hypothesis 4a, acceptance of sexuality, the three variables contributed strongly to A-State level. Unusual symptoms with birth control methods, number of birth control methods used, and religious devoutness were all affected by overlap as well. Three variables in the equation were more highly correlated with anxiety in the multiple regression equation than separately due to suppressor effects. These variables included years of sexual intercourse, regularity of intercourse, and effectiveness of the birth control method used for the longest period of time. The latter two variables were not interpreted due to their low simple correlations with A-State level. They increased overall prediction of A-State level in combination with the other variables; however, their psychological meaningfulness is questionable.

Comparison of Experimental and Control Group Subjects

Since subjects were assigned on a random basis to experimental and control groups, it was assumed that there would be no differences between the two groups except on variables which might be affected by pre- versus post-abortion measurement. To investigate differences between the two groups a discriminant analysis was performed for experimental and control subjects. Independent, dependent,

and follow-up variables were examined in relation to the two groups. A total of 47 measures were included in this discriminant analysis. These variables included background information, personality factors, reactions during the abortion, and complications reported afterwards. The groups differed on ten of the 47 variables. The results of the discriminant analysis for these ten variables appear in Table 5. The multiple R for the function is .43 ($F = 5.32$, $p < .001$). Group means on the ten discriminating variables and t-values for the means are also reported. Only the first four variables in Table 4 which discriminated considerably between the two groups were interpreted.

The groups did not differ on measures of A-Trait nor on psychological distress ratings of the abortion procedure. On A-State level, however, the groups differed significantly. This measure of anxiety reflects fluctuations in anxiety level over time and across situations. Since it was administered pre-abortion to experimental subjects and post-abortion to control subjects, the time of test administration may have produced the group difference.

Variables Contributing to Psychological Distress Ratings

The same factors were hypothesized to contribute to distress during the abortion as to A-State level prior to the abortion. A multiple regression analysis was used to determine the contribution of these variables to distress now defined as Psychological Distress Rating factor scores.

TABLE 5

Discriminant Analysis[a] of Differences Between Experimental and Control Groups

Name of Variable	Beta Coefficient	Simple Correlation	Partial Correlation	Experimental Mean	Control Mean	t
A-State level	-.28	-.24	-.28	48.35	42.49	3.81**
Desire for a Child	.22	.14	.22	.63	.99	2.20*
Externalization of Responsibility for Sexual Intercourse	.14	.13	.14	.27	.43	2.08*
Education level	.13	.11	.14	13.93	14.35	1.77*
Systolic BP Residual Score	.17	.12	.16	- .63	1.26	1.96*
Number of Days Since Start of Last Menstrual Period	-.11	-.07	-.12	64.34	62.82	1.16
Amount of Temperature after the Abortion (follow-up)	.10	.11	.11	99.89	100.50	1.67
Diastolic BP Residual Score	-.09	-.05	-.09	.21	- .43	0.81
Months of Use of Longest Used Birth Control Method	-.08	-.05	-.09	18.67	16.86	0.77
Severe Pain or Cramps After the Abortion (F-U)	-.08	-.09	-.08	.36	.25	1.47

* $p < .05$, two-tailed test.
** $p < .001$, two tailed test.
[a] Multiple R for the equation is .43; constant is -2.76.

A series of F-tests had shown that the pattern of beta weights and the intercepts of multiple regression equations for experimental and control groups did not differ significantly (Kerlinger and Pedhazer, 1973). The two groups were therefore combined for a multiple regression. The results of this step-wise analysis are presented in Table 6. Only variables meeting the predetermined criterion (F=1.5) were entered in the equation. The multiple R for the equation containing these seven significant variables was .36 ($\underline{F}$ = 5.15; $\underline{p} < .001$). As in the multiple regression analysis of anxiety, redundancy of variables affected the obtained contributions of these seven variables to distress within the multiple regression equation. Two variables, number of abortions and uterine size, improved overall statistical prediction of distress in the multiple regression analysis through suppressor effects. Psychologically, however, these variables are of doubtful value in relation to distress and were not interpreted further.

Anxiety measures were not obtained from control subjects prior to the abortion. Therefore anxiety level was not included in the multiple regression analysis of distress for the two groups combined. The multiple correlation coefficient for distress would have been increased had it been possible to include anxiety level in the analysis, since anxiety and distress were significantly correlated.

There was some overlap between variables contributing to distress (Factor III) and those contributing to pre-abortion anxiety (STAI A-State) level. The three variables

TABLE 6

Multiple Regression Analysis of Abortion Distress
(N = 248)

Variable Name (Hyp.No.)	Raw Coeffic-ient	Beta Coeffic-ient	Simple Coeffic-ient	Partial Correla-tion
M and Pre-M Symptoms (3a)	.25	.22	.23	.22
Months of Longest B. Control Method (3c)	.02	.22	.15	.23
Enjoy Sex (4b)	-.15	-.12	-.14	-.13
Months of Gaps in B. Control Use (3c)	.03	.11	.12	.11
Heavy M. Flow (3a)	.21	.09	.11	.09
Number of Abortions (3e)	.27	.08	.04	.08
Uterine Size (3d)	-.06	-.08	-.04	-.08

Note: - Multiple R for the equation is .36; constant is 37.9.

contributing to both included: menstrual and pre-menstrual symptoms, heaviness of menstrual flow, and low enjoyment of sexual intercourse.

Follow-Up Results

Hypothesis 5: A total of 246 subjects accepted a follow-up questionnaire. Two refusals were based on fears of parents finding the form and learning about the abortion. Of the 174 returned questionnaires, 141 were originals and 33 were second ones mailed out when the first was not returned. The total return rate of 71% was comprised of approximately equal percentages of experimental and control subjects.

The rate of major complications following the abortion was low. There were no immediate complications of any nature. One subject who reported follow-up data was hospitalized approximately a month after the abortion. In her case the abortion had been incomplete leading to infection and severe pain and cramps. A repeat abortion was performed at the time of hospitalization. An additional 15 subjects sought out-patient medical care for complications. Nine of these women suffered pain and infection; two developed hemorrhaging and another was treated for "discharging clots." Three women were treated for infections, such as monilia, which possibly were unrelated to the abortion procedure. The numbers of experimental and control subjects who developed any physical complications from the abortion are summarized in Table 7. The total number of women who

TABLE 7

Numbers of Experimental and Control Subjects Reporting Physical Complications and Psychological Reactions at Follow-up (N = 174)

Physical Complication[a]	Experimental	Control	Total
Any physical complaint	52	29	81 (47%)
Increase in temperature	36	20	56 (32%)
Severe pain or cramps	41	15	56 (32%)
Infection	11	5	16 (09%)
Hemorrhage	1	1	2 (01%)
Other (slight pain, etc.)	13	12	25 (14%)
Treatment of Complication			
By a physician			16 (09%)
By hospitalization			1 (0.6%)
Psychological Reaction[b]			
Relief	94	50	144 (83%)
Happiness	38	26	64 (37%)
Depression	43	20	63 (36%)
Sadness	36	12	48 (28%)

[a]The total number of subjects with physical complications is smaller than the sum of all specific complaints, since many subjects reported multiple problems, e.g. pain and infection.

[b]Subjects reported multiple emotional reactions following the abortion.

complained of physical difficulties following the abortion was 81 (47%). Severe pain and cramps and an increase in temperature comprised most of these difficulties. The total number of subjects reporting complications is smaller than the number of specific complaints, since many women reported multiple symptoms. Of the follow-up sample, 19 women (11%) reported an increase in temperature for more than three days; two women reported fever lasting more than two weeks.

The relationship between A-State level prior to the abortion and complications afterward was examined for experimental subjects by means of correlations. The number of weeks of bleeding following the procedure correlated .27 ($P < .01$) with anxiety prior to the abortion. Distress during the procedure and subsequent complications were intercorrelated for all subjects combined. Amount of distress related significantly to severe pain and cramps reported on follow-up ($r = .16$, $p < .01$).

Other Findings

Choice of Anesthesia. A most striking finding in the study was the difference between experimental and control subjects in opting for general rather than local anesthesia at the choice point following a group orientation meeting. Choice of anesthesia was recorded for 366 potential subjects. For experimental subjects 12% (28 out of 241) selected general anesthesia; for control subjects 23% (29 out of 125). A Chi Square analysis (using Yates' correction) yielded χ^2 of 7.54 ($p < .01$, if this relationship had been predicted).

Measures of STAI A-State and A-Trait levels prior to the abortion were obtained for the 2 experimental subjects who chose general anesthesia. The mean A-State score for these women, if predicted, would have been significantly higher than that of experimental subjects who chose local anesthesia ($t = 2.46$; $p < .02$). The two groups did not differ on measures of A-Trait.

Physiological Measures. Four physiological measures were recorded before and after the abortion procedure. The four physiological measures included systolic and diastolic blood pressures, pulse rate, and respiration rate. Since measures were recorded immediately before and after the abortion procedure, neither pre- nor post-measures could be considered baseline reactions under normal circumstances. In analyzing the relationships among the measures a regression process was used to partial out from the post-abortion reactions variance due to the pre-abortion reactions. These four residual scores for each subject were then correlated with other measures for experimental and control subjects separately.

For experimental subjects A-State level prior to the abortion was not related to physiological residual scores. Psychological distress ratings, however, were significantly related to two physiological measures: systolic and diastolic blood pressure residual scores. The correlation coefficient between distress and systolic blood pressure was $-.25$ ($p < .01$) and between distress and diastolic blood pressure was $-.20$ ($p < .01$). Systolic blood pressure residual scores of

the 165 experimental subjects also related to two other variables: religious devoutness ($r = .20$; $p < .01$) and number of previous pelvic examination ($r = -.20$; $p < .01$). Pulse rate residuals were negatively correlated with MDQ Factor III, Inter-menstrual symptoms ($r = -.28$; $p < .01$). These correlations are low and a large number of intercorrelations were computed. However, they do indicate areas worthy of more specific investigation.

A different pattern of intercorrelations between physiological measures and other variables was found for 83 control subjects. The only significant correlation was between systolic blood pressure residual scores and a history of unusual symptoms with birth control methods ($r = .26$; $p < .01$). No relationship between physiological measures and anxiety or distress was obtained for control subjects.

Psychological Sequelae of the Abortion. In addition to information about physical complications the follow-up questionnaire elicited data concerning emotional reactions during a four week period after the abortion. Numbers of subjects reporting various emotional reactions are presented in Table . Of the 174 respondants, 83 percent reported feelings of relief and 37 percent feelings of happiness subseuqent to the abortion. Sadness was reported by 28 percent of the follow-up sample and depression by 36 percent. Many subjects reported more than one type of feeling after the abortion. Altogether fifty percent of the respondents experienced sadness or depression following the abortion. In

most cases these feelings were short-lived. For example 35% of the follow-up sample felt sadness or depression for one week or less; another 11% had negative affects between one and three weeks; and 5% experienced these feelings more than three weeks. Experimental and control group subjects did not differ in emotional reactions after the abortion.

Both scale scores from the State-Trait Anxiety Inventory related to the length of feelings of sadness and depression after the abortion. The relationship was stronger for experimental subjects who completed the STAI prior to the abortion. Pre-abortion A-State level and number of days of depression or sadness after the abortion yielded a correlation coefficient of .40 ($p < .001$); pre-abortion A-Trait level and days of sadness or depression correlated .37 ($p < .001$). For control subjects who completed both scales of the STAI post-abortion, a relationship was found only between A-Trait level and days of sadness or depression ($r = .27$, $p < .01$).

Doctor Performing the Abortion. The particular doctor performing the abortion affected the amount of distress experienced during it. For one of the six doctors in the study a significant correlation was obtained between his performing the procedure and psychological distress ratings ($r = .24$, $p < .001$). Women undergoing procedures by him reported, and were observed to experience, significantly more distress than those seeing other doctors.

DISCUSSION

This study investigated the role of anxiety in determining the amount of distress a woman experienced during an abortion procedure. In addition variables contributing to anxiety and distress were examined. Previous studies of abortion have focused on psychological sequelae of abortion and have been less concerned with the actual abortion experience for a woman. The focus here was on the relationship between the actual abortion experience, factors preceding the abortion, and physical and emotional consequences of the abortion.

The hypothesized relationships with anxiety and distress were generally supported by the data. The prediction that physical complications from the abortion would be related to anxiety existing before the procedure and distress during it did not receive confirmation. Of the twelve subhypotheses about factors related to anxiety and distress, eight received direct support and two indirect support. Only education level and femininity of career choice showed no relationship either to anxiety before the abortion or distress during it. Number of internal examinations and conflict about the abortion were washed out in the multiple regression analysis of anxiety and distress due to overlap with other variables in the analysis.

Anxiety Level and Distress: Hypothesis I

Anxiety level prior to the abortion procedure was positively related to distress during the procedure. This

finding is consistent with studies of childbirth in which women who were more anxious during the third trimester of pregnancy were found to experience longer labors, more complications during birth, and a need for more analgesia than women who were less anxious (Grimm, 1961; Davids, et al., 1961; Davids and DeVault, 1962; Zuckerman, et al., 1963). In the childbirth studies anxiety level was measured at least one month prior to delivery using a variety of techniques both objective and projective. In the present study anxiety was measured within an hour of the abortion procedure and was found to contribute to the amount of distress during the procedure. The consistency of this finding in pregnant women suggests that anxiety affects the ease or discomfort with which a woman undergoes a reproductive-related procedure, whether childbirth or an abortion.

Physiological mechanisms may be the mediating link between reports of anxiety and abortion distress. Laboratory studies of the effects of induced-fear on uterine motility have shown that fear increases the amplitude of uterine contractions and in some cases produces unusual contractions (Bardwick and Behrman, 1967; Kelly, 1962a; Kelly, 1962b). Kelly (1962a and 1962b) suggests that the specific physiological mechanisms involve an increase in production of epinephrine by and adrenal medulla or an increase in oxytocin from the hypothalmus under fear-producing circumstances. In either case uterine contractions are amplified.

A general tendency to complain may in part underlie

the relationship between anxiety and distress. One contributor to pre-abortion anxiety level was a tendency to complain of menstrual-like symptoms during the inter-menstrual phase of the menstrual cycle. Both anxiety and distress were related to a history of menstrual and pre-menstrual symptoms. Women who complained of distress during the menstrual cycle also reported anxiety symptoms before an abortion and complained of distress during it. Anxiety, however, may have been a consequence of repeated negative experiences with the reproductive system. Continual negative menstrual experiences may have left a woman vulnerable to anxiety and distress at the time of an abortion.

Contributors to Anxiety Level Prior to an Abortion

A complex relationship exists between personality factors, past experiences, and anxiety before an abortion.

Religious devoutness: hypothesis 2b. Women reporting anxiety before the abortion tended to be religiously devout. It was inconsequential whether the woman was Catholic, Protestant, or Jewish; her regular involvement with her particular faith contributed to anxiety before the abortion. Specific religious doctrine, such as that of the Roman Catholic church may be less important than previously suggested in a woman's immediate reactions to an abortion. However, even religious devoutness was found to be a relatively weak predictor of anxiety.

Menstrual difficulties: hypothesis 3a. As previously mentioned a history of menstrual difficulties contributed to anxiety before an abortion. Particular difficulties reported included: menstrual and pre-menstrual symptomotology, inter-menstrual symptoms, and heavy menstrual flow.

Problems with birth control methods: hypothesis 3c. Sexual and contraceptive experience were found to interact in relation to anxiety prior to an abortion. As hypothesized, failure to use contraception signifies problems in birth control use that contribute to anxiety about an abortion. Women having used no contraception or only one method were more anxious before the abortion than those having used several methods. These women were very likely to be sexually inexperienced. As age and sexual experience increase women have been noted to become freer to use contraception and to experiment with different methods (Glascock, 1973). Women reporting unusual symptoms with contraceptive methods were lower in anxiety before the abortion than those without such symptoms. This paradoxical finding may be accounted for in that reports of all symptoms, whether usual or unusual, increased as the number of methods used increased. A woman who had used several contraceptive methods had had more opportunity to experience side-effects of the methods than a woman who had used only one method. Symptoms occur with the more reliable methods which are used more often by women as they grow older (Glascock, 1973). Reports of symptoms also reflect amount of sexual experience in this

study, which was found to relate to lower anxiety before the abortion.

Experienced contraceptors have had more sexual experience, more pelvic examinations, and greater acceptance of and enjoyment of sexual intercourse than women with little or no use of contraception. These variables combined were shown to be good indicators of which women did and did not become anxious prior to an abortion. Finer discriminations are necessary before conclusions can be drawn about women with complex and varied contraceptive histories. The present findings suggested that a woman's use of several birth control methods was not in itself a negative indication. Trying several methods systematically and discontinuing methods due to symptoms may reflect competent decisions for some women; for others these behaviors may be erratic contraceptive use representing impulsivity and ambivalence. Future studies might focus on the relationship between abortion and complex patterns of contraceptive use. More precise measures of contraceptive history and control for curvilinearity of relationships are recommended in future studies of this nature.

Acceptance of sexuality and sexual experience: hypothesis 4a and 4b. Knowledge of a woman's sexual history gave an indication of the amount of anxiety she was likely to experience prior to an abortion. Women who accepted their sexuality, as reflected in enjoyment of sexual intercourse, frequent orgasm, and internalized responsibility for engaging

in sexual intercourse were not likely to experience high anxiety before the abortion. Their reports of enjoyment of intercourse may have been associated with generally low anxiety proneness in relation to sexual functioning. Specifically these women may not have experienced increases in anxiety before an abortion due to their low anxiety proneness about sexual matters.

Women who had engaged in sexual intercourse for a greater number of years reported lower anxiety prior to an abortion than those with fewer years of experience. Bardwick (1971) suggested that as sexual experience increases, a woman's anxiety and conflict about sex decrease. The findings in relation to years of sexual experience indicated that anxiety about sexual situations other than intercourse, for example an abortion, may decrease somewhat with sexual experience as well.

Desire for a child: hypothesis 4d. The most potent single contributor to anxiety level before the abortion was a woman's desire for a child. A woman who consciously wanted a child experienced conflict in having an abortion. The findings indicated that such feelings produced anxiety prior to the abortion procedure. Other interrelated variables in combination with each other predicted anxiety level as powerfully as desire for a child; however, this variable alone was a strong indicator of anxiety level before the abortion.

Other variables. Two variables, which in combination with the ones previously discussed, improved prediction of anxiety level before the abortion, were not found to be

individually meaningful in relation to anxiety level. These two variables were regularity of sexual intercourse and the effectiveness of the birth control method used for the longest period of time. Interpretation of these variables would be misleading since they have meaning only within the context of the group of variables with which they are interrelated.

Distress During the Abortion

A somewhat less complex pattern of variables were found to contribute to distress during the abortion than to anxiety level beforehand. These variables included: menstrual difficulties, contraceptive history, acceptance of sexuality, a prior abortion, and uterine size at the time of the abortion. Anxiety level before the abortion and the doctor performing the abortion were also related to abortion distress.

Menstrual difficulties: hypothesis 3a. The number of menstrual and premenstrual symptoms and also heaviness of menstrual flows were directly related to abortion distress as well as to pre-abortion anxiety. A tendency to complain of symptoms or an alertness to them may have been a contributing factor.

Problems with birth control methods: hypothesis 3c. A relationship was demonstrated between total length of gaps between birth control methods and distress during the abortion. This finding supported the hypothesis that erratic use of contraception, as an index of problems with birth

control use, contributes to abortion distress. Erratic use of contraception may have resulted from conflict and ambivalence about sexuality and motherhood, which led to an unwanted pregnancy. An abortion, as a further step in the conflict, may have been a conflicting and distressing resolution.

The longer a woman used any one birth control method, the more distress she reported during the abortion procedure. It is not immediately apparent why lengthy use of one contraceptive method was related to abortion distress. Having used one method for a period of time may have reflected relatively little sexual experience, since use of different methods increases with experience. In that case women with longer sexual experience would have used several methods (not necessarily for long periods of time) and would have experienced less distress as a function of experience. Women with more experience were shown here to experience less anxiety before the abortion. A second possibility is that extended use of one birth control method, considering the problems inherent in each, represented rigidity in a women. Further examination of this variable is necessary.

Acceptance of sexuality: hypothesis 4b. Women reporting enjoyment of sexual intercourse showed neither marked increases in anxiety before an abortion nor severe distress during it. This finding suggested that women who have experienced pleasure through the reproductive system may have been low in anxiety-proneness with regard to that system.

Other women, prone toward anxiety about sex and reproduction, may not have enjoyed intercourse in the past and in the same vein may have been distressed by the abortion procedure. It is suggested that the inability to relax during intercourse and during the abortion may have had negative consequences in each situation.

Other contributors. As with anxiety before the abortion there were variables which increased overall prediction of abortion distress within the context of other interrelated variables, but which alone were not significantly related to distress. Having had a prior abortion and uterine size at the time of the abortion were two such variables. Although useful in statistically predicting distress for a comparable sample of women, these variables have little or no psychological significance in terms of reducing distress.

Doctor performing the abortion. In addition to anxiety level and other contributors to abortion distress previously mentioned, the doctor performing the abortion procedure had an important impact on the amount of distress experienced during the procedure. One of the six doctors involved in the study produced considerably more distress in his patients than the other doctors. He was apparently not well-liked by some clinic personnel because of his callous approach to patients and the procedure. The doctors who were kind and gentle toward patients were well-liked by patients and also respected by staff. Selection of doctors with a sympathetic approach to women having abortions, or if possible training in this direction, could reduce distress

of women having abortions under local anesthesia.

Implications. There was overlap in variables contributing to anxiety before an abortion and to distress during the procedure. Tendencies to complain and anxiety-proneness in sexual and reproductive situations may explain this overlap. Anxiety-prone women may experience acute anxiety in relation to the menstrual cycle, to contraceptive use, to sexual intercourse, and to an abortion procedure. The consequence is a disturbance in each situation. It should not be overlooked that distress during an abortion may result from physical factors as well as psychological ones. Inconsiderate medical personnel apparently affect abortion distress.

A number of factors have been shown to relate to anxiety before an abortion procedure and distress during it. It has been assumed, since these factors, such as enjoyment of sexual intercourse, antedated the abortion procedure, that they are predictors of anxiety and distress. Women reported their past experiences and feelings retrospectively, however, at the time of the abortion. Current anxiety level and reactions to the abortion situation may have colored reports of past menstrual and sexual experiences. In future studies of this kind inclusion of a control group undergoing a comparable but non-reproductive related procedure would indicate the influence of the abortion on responses to these types of questions. A group of women blood donors might serve this purpose.

These findings about antecedents of abortion anxiety and distress, particularly if replicated with an appropriate control group, might prove useful to gynecologists, counselors, and mental health personnel working with potential abortion patients. Knowledge of a woman's desire for a child, sexual and contraceptive experiences, menstrual history, and religious devoutness indicate to some extent how anxious she may become before an abortion. Although not strongly related to anxiety or distress within the context of other variables because of much overlap with the variables, the number of pelvic examinations a woman has had gives a good indication of her amount of sexual and contraceptive experience and is an easily obtained index.

Women likely to have high anxiety before an abortion and distress during it could be given special counseling before the abortion with a focus on the particular anxiety-arousing and distress-producing issues for the women. It should be pointed out that counseling based on the issues indicated here may reduce anxiety and distress to some extent and may be particularly useful for women highly anxious about the abortion. A study of the effectiveness of counseling in reducing distress in women identified as highly anxious is indicated.

Physical Complications from the Abortion: Hypothesis 5

Although no immediate complications occurred, the rate of total physical complications reported by women on follow-up was considerably higher than those obtained from

comparable samples (Pakter, et al., 1973; Tietze and Lewit, 1972). The large number of reports of pain and cramps following the procedure may have resulted partly from insertions of intrauterine devices in a small percentage of women immediately after the abortion. Bleeding and cramps are common after these insertions. Only one woman reported a major complication. She had an incomplete abortion which required hospitalization and a repeat abortion on month later. In a report of the Joint Program for the Study of Abortion (JPSA) Tietze and Lewit (1972) included three or more days of fever as a major complication from abortion. In this sample, however, the number of days of fever did not necessarily indicate severity of complication. The majority of those reporting more than two days of fever reported no concomitant problems and did not see a physician. Women at this abortion facility were advised to check their temperature daily and may have reported increases which were overlooked among other samples.

The high rates of infection, hemorrhage, and temperature increase among this sample may have been a function of the follow-up technique using self-report via questionnaire. Other follow-up studies of complications from abortion have used different techniques. A study by the New York City Board of Health utilized reports from abortion facilities, which may have been underestimates due to loss of contact with out-of-town clinic patients (Pakter, et al., 1973). Questionnaires and telephone contact with patients and

physicians, which may have reflected more accurate diagnoses than self-report alone, were used in the JPSA study (Teitze and Lewit, 1972). The proportion of women in this sample who sought medical treatment for complications (nine percent) was nevertheless higher than expected on the basis of previous reports. Several women indicated, however, that infections treated may not have been due to the abortion.

Anxiety and distress were not related to physical complications from the abortion. However, length of bleeding after the abortion, which normally varies greatly from woman to woman, was found to be associated with anxiety. Extended bleeding after the procedure was associated not only with anxiety before the abortion but also with long menstrual periods and heavy menstrual flow. Whether anxiety contributes to length of bleeding or is a product of it cannot be determined here.

Women reporting anxiety prior to and distress during the abortion procedure also reported physical distress, such as cramps and pain, during recuperation from the abortion. Some women showed a pattern of complaining of symptoms in the reproductive system in general. They complained of menstrual and pre-menstrual symptoms, acute anxiety before the abortion, distress during the procedure, and pain and cramps during recuperation.

The return rate of follow-up questionnaires was impressive and was consistent with the initial cooperativeness of clinic patients in participating in the study. Women were eager to discuss feelings about the abortion, particularly within the context of helping other women.

Experimental and Control Group Differences

Choice of anesthesia. Major differences between experimental and control group subjects were not expected, since assignment to conditions was a random process. Differences appeared, however, and can be accounted for by an unexpected finding of the study. A markedly greater proportion of control subjects than experimental subjects were lost to the study due to choice of general rather than local anesthesia. The request to participate in the study may have affected choice of anesthesia by experimental subjects. Prior to the abortion these women completed study questionnaires concerning feelings about the abortion; they spent a brief time with a researcher whom they anticipated speaking with again after the procedure; they were also informed that their participation in the study would further the understanding of women's feelings about abortion and benefit women having abortions in the future. These experiences may have influenced the choice of anesthesia by reducing anxiety or by encouraging the woman to remain awake in order to continue participation in the study. Control subjects, who had no knowledge that they would be asked to participate before the abortion, were not influenced in the decision to receive local or general anesthesia.

The experimental group therefore, included a number of subjects of a type that would have chosen general anesthesia. They would have excluded themselves from the control group by such a choice. Indirect evidence suggested

that the two groups differed in the proportion of highly anxious women in each. Anxiety measures were obtained before the abortion for experimental subjects who opted for general anesthesia. The mean transitory anxiety (A-State) score for this group of 29 women was higher than that of experimental subjects choosing local anesthesia. Comparative measures could not be obtained from control subjects choosing general anesthesia. Most likely, however, they were also highly anxious and too fearful to remain awake during the procedure.

Anxiety level. Marked differences in anxiety level were found for experimental and control subjects. These differences, however, can be accounted for by the fact that experimental subjects completed the anxiety scale prior to the abortion and control subjects after the abortion. Women would be expected to report more acute anxiety before a surgical procedure than afterwards, when relief is an important affect. The two groups did not differ on the personality characteristic of general anxiety-proneness (A-Trait), despite pre- versus post-abortion measurement. This finding is consistent with those of Auerbach (1973) who reported that A-State but not A-Trait level was affected by impending surgical procedures. Elevated transitory anxiety in experimental subjects may have been due both to measurement prior to the abortion and to inclusion in this group of a greater proportion of women highly anxious about the abortion, who because of participation in the study selected local anesthesia in lieu of general anesthesia.

Desire for a child. Control subjects reported a greater desire for a child than experimental subjects. As with anxiety time of responding may have affected these reports. Experimental subjects indicated desire for a child prior to the abortion procedure and control subjects afterward. Some women in the experimental group may have denied conscious wishes for a child prior to the abortion to reduce feelings of conflict and anxiety about the abortion; others may have suppressed such wishes due to fear of not being granted an abortion if such wishes were expressed. After the abortion, however, the defenses against awareness of wanting a child were no longer necessary and more women in general may have reported desires for a child. The abortion procedure may have emphasized the woman's present decision not to have a child and increased awareness of wanting one in the future. Measurement of desire for a child in the same group of women both before and after an abortion is necessary to examine this relationship further.

Externalization of responsibility for intercourse. Although both groups were asked to report responsibility for sexual intercourse after the abortion procedure, control subjects exceeded experimental ones in externalization. Reasons for this difference were not immediately obvious. One may speculate that the experimental group had a longer period of time to introspect which may have affected their interpretation of personal responsibility.

Education level. Control subjects showed a higher average education level than experimental subjects. Women

with less education may have preferred general anesthesia during a surgical procedure. A higher proportion of women with less education may have been included in the experimental group due to influence away from general anesthesia by participation in the study.

Other variables. Differences between experimental and control groups were also found on physiological reactions during the procedure, on reports of time since the last menstrual period, on months of use of the longest used birth control method, and on amount of temperature and pain reported on follow-up. These differences were small in magnitude, however. They are assumed to have resulted from the differences in choice of anesthesias by the two groups.

In summary differences appeared between experimental and control groups as a result of the different conditions under which the groups participated in the study. Participation in the study prior to the abortion may have reduced acute anxiety in some experimental subjects. Some women may have been reassured by contact with a researcher and by anticipation of continued contact after the abortion. Others may have felt special about being selected for a study and helping women having abortions in the future. Some women may have felt more anxious after reporting feelings about the abortion and may have chosen general anesthesia as a result. Ultimately the experimental group included a different population of women from the control group, which was unaffected in composition by participation in the study.

Physiological Responses

Women with lower blood pressure just after the abortion procedure reported more distress and were observed to have more distress than those with higher blood pressure afterward. Both systolic and diastolic blood pressure showed the same result for experimental subjects only. Baseline physiological measures were not available for these women. It was not clear, therefore, whether they have low blood pressure in general or whether the procedure affected blood pressure. There was no evidence that lower blood pressure immediately before the procedure was associated with distress during it. A drop in blood pressure during the procedure may have accompanied distress or may have been interpreted as distress.

Anxiety level was not related to physiological responses. The time lapse of at least 45 minutes between reports of acute anxiety and physiological measurements may have attenuated such a relationship if it exists. In some cases measurement of physiological responses may have been rather perfunctory due to time pressures at the abortion clinic. Relationships between physiological measures and other variables may have consequently been weakened. Comparisons of physiological measures at the time of an abortion with baseline onces under normal circumstances would be necessary to determine more precisely the relationship between anxiety, distress, and physiological reactions.

Psychological Sequelae

By far the most prevalent feeling women reported during four weeks after the abortion was relief. This finding is consistent with previous studies of emotional reactions following abortion (David, 1972; Kummer, 1963; Osofsky, et al., 1971). The frequency of mild or short-lived depression was higher in this group of women than in samples studied previously. Over a third of the women reporting follow-up data experienced depression after the abortion. Prior studies showed the incidence of mild, self-limiting depression after an abortion to be between 10 and 25 percent (Castelnuevo-Tedesco, 1972; Peck and Marcus, 1966; Rovinsky, 1972). Women in this sample reported not only more physical complications but also more emotional distress following the abortion than those in previous studies. Self-report on follow-up rather than diagnosis by a mental health professional may have contributed to the high rate of depression.

Women with longer lasting depression following the abortion were higher both in general anxiety proneness and in acute anxiety before the abortion procedure than those with no feelings of depression or brief ones. Women who report negative affect under normal circumstances have negative reactions before and after an abortion. Payne, et al. (1973) diagnosed abortion patients similar to those in the present sample as mature or immature in ego organization. Over a third of their sample, labeled immature, showed increases in depression during six weeks following the

abortion; other women declined steadily in such feelings. The present findings suggest that anxiety-proneness is one characteristic which differentiates between women who will and will not have protracted negative emotional sequelae from an abortion.

Conclusion

The study delineated psychological and experiential factors involved in acute anxiety before an abortion and distress during it and revealed a relationship between these two variables. Anxiety and distress about an abortion were shown to be part of a complex pattern of negative experiences in sexual and reproductive functioning generally. The findings may prove useful to those interested in identifying women who are likely to experience difficulty before and during an abortion procedure. The extent to which reduction of anxiety and distress through counseling prior to an abortion is possible remains to be determined. Unlike psychological reactions, physical complications after an abortion were not found to be related to anxiety before or distress during an abortion procedure.

Selection to participate in the study itself appeared to have a beneficial effect in reducing the proportion of subjects choosing general anesthesia. The physician also was shown to play a significant role in the amount of distress experienced during the abortion.

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APPENDIX A

I. Introduction.

My name is Dorothy McQuown. I'm a psychologist studying women's feelings about abortion. The study I'm doing is in connection with the City University and the Population Council.

You'll be here at the clinic for several hours today. Only part of that time will be involved in the actual abortion procedure. There will be some short periods of waiting and a rest period after the procedure. I'd like you to help me with this study during the waiting and rest periods.

After the abortion procedure when your part in the study would be over I'd be glad to talk to you about anything concerning the abortion that I as a psychologist might be able to help you with.

I would ask you to answer some questions about yourself and about your feelings today at the clinic. The information we get from women such as you will be used in the future to help other women having abortions.

Your name would not be used in the study. In fact the questionnaires I'm asking you to fill out would have only a code number. I would also ask you to take home a questionnaire about how things go after the abortion. It should be mailed to me in four weeks.

Will you help me with the study?

Do you have any questions?

There are two things I need to know before I give you these questionnaires.

Were you born in the United States? (If not) Where were you educated?

Have you had any type of vaginal infection or discharge in the past few months?

You can take this clipboard back into the waiting area and fill out these two forms. Return it to me when you're finished.

II. Follow-up Instructions.

Here's a form with some questions about how you might feel after the abortion. The form is voluntary. You don't have to take it home, but it would be very helpful to the study if you do. It's important that you answer the questions four weeks from now and mail the form to me at that time. I'm also giving you a stamped envelope with my address. Return the questionnaire only after four weeks, that would be (date). The date is written on the form. Will you take it?

If I don't receive the questionnaire I'd like to be able to send you another one. Four weeks is a long time and the form could get lost. Is there an address where you would feel comfortable for me to send a questionnaire? I would contact you only if I did not receive this form. Otherwise you would not hear from me after today.

TO: Nurse in Procedure Room

FROM:Dorothy McQuown

RE: Abortion Study

Instructions for "Procedure Rating Scale" (Nurse)

Each subject in this study has a sticker on her folder. Two Procedure Rating Scales will be in the back of each marked folder. One is for you; one is for the doctor in the procedure. As soon as the procedure is finished, please complete your form.

1. Write your name in the top left corner of the form.
2. For question 1, read the description and choose the one that fits the patient best. Put a check by it. The description may not fit exactly, but check the closest one.

   Do not discuss your rating with the doctor. Separate ratings are very important to the study.
3. Answer all other questions as explained on the form.
4. Return the completed form to the back of the patient's folder.

P D Daily Record Date _____

E or C Day: W F S Su

NAME	Age	Code	Q1	A1	C	A2	Pn	Pd	DS	Q2	FU

Information from Clinic Face-sheet

1. Age _____

2. Marital Status _____

3. City and State of Residence _____

4. Date of birth _____
   month day year

5. Number of Previous abortions _____

6. Number of miscarriages _____

7. Previous surgery _____

8. Date of last menstrual period _____
   month day

9. Persons with whom abortion was discussed _____

   _____

10. Accompanied or alone _____

11. Medical problems _____

    _____

12. USA born: Yes___ No___ USA educated: Yes ___ No____

13. Vaginal Infection in recent months: Yes ____ No _____

PLEASE NOTE:

Pages 87-88, "Self-Evaluation Questionnaire, STAI FORM X-1 & X-2", copyright 1968 by Charles D. Spielberger, not microfilmed at request of author. Available for consultation at the Library of The City University of New York.

UNIVERSITY MICROFILMS.

Patient Information Sheet

1. Number of years of school completed: 8 9 10 11 12 13 14 15

   (circle the number) 16 17

2. Occupation: _____

   If a student, what is your major? _____

3a. Religion or religious upbringing:

   Catholic ___ Jewish ___ Protestant ___ (Denomination _____)

   Other ___

3b. How often do you attend religious services at present?

   At least once a week _____ Less than once a week _____ Rarely or never _____

4. List here all your brothers and sisters. Start with the eldest, write male or female and present age. List yourself in order of your present age as "me".

   Oldest 1. sex_____ age_____ 4. sex _____ age _____

   2. sex_____ age_____ 5. sex _____ age _____

   3. sex_____ age_____ 6. sex _____ age _____

5. How many internal ("pelvic", vaginal) examinations have you had by a gynecologist or regular doctor? This includes Pap Smears if you have had one or more.

   Circle the number: 0 1 2 3 4 5 6-10 10+

6. Check the types of birth control methods you have used and fill in the additional information about each type:

Method		Dates of Continued Use. Mo./yr. to Mo./yr.	Describe your reasons for stopping the method: specify symptoms.
Pills	____	_____	_____
I.U.D. (loop, shield)	____	_____	_____
Diaphragm	____	_____	_____
Foam	____	_____	_____
Condoms/ rubbers	____	_____	_____
Rhythym	____	_____	_____

If you have used any other methods of birth control, write in the name here, the dates of continued use and any symptoms or your reasons for discontinuing use of the method:

_____ _____ _____

7. Put a check by the main reason for your having an abortion. If more than one reason applies to you, write a 2, 3, and so forth by each additional reason in order of importance.

   a. I do not ever want children _____

   b. My parents want me to have an abortion _____

   c. I am not married to my sexual partner _____

   d. Health reasons _____ Specify: _____

   e. I do not want a child now _____

   f. I am financially unable to have a child _____

   g. My boyfriend or husband wants me to have an abortion _____

Place a check anywhere along the line at the point that best describes your feeling:

8. I do not want a child at all now _____ I want a child very much now

9. I expect the abortion procedure to be not at all painful _____ I expect the abortion procedure to be very painful

10. I am not at all afraid of the abortion procedure _____ I am very much afraid of the abortion procedure

    If you are afraid, what are the things you are afraid of?_____

    _____

11. a. If you have to wait a few minutes before the procedure, do you prefer to wait:

    Alone _____ With other patients _____

    b. How strongly do you feel about this preference?

    Not at all strongly _____ Very strongly

SELF-RATING SCALE _____

1. Place a check on the line at the point that best describes the abortion procedure

Not at all painful and distressing	_____	Extremely painful and distressing

2. Check any reactions you felt during the procedure:

_____nausea	_____weakness	_____backache
_____faintness/ fainting	_____coldness in feet or body or hands	_____headache
_____dizziness	_____severe cramps	_____other, specify:
		_____
		_____

MD_____

Nurse_____ PROCEDURE RATING SCALE (NURSE'S FORM) _____

1. Which of the following descriptions would best apply to the patient during the procedure? (Check one)

☐ No pain or distress visible; no complaints of pain or distress; very co-operative and needed minimal reassurance.

☐ Slight pain and distress visible or minimal complaints of pain and distress; mostly co-operative and responded well to reassurance.

☐ Moderate pain and distress visible; some complaints of pain and distress; some tenseness, moving about or slight resistance; able to respond to reassurance and relax somewhat.

☐ Rather severe pain and distress visible; unable to relax with reassurance; some crying, maoning, moving about and physical reactions such as paleness dizziness, nausea.

☐ Very severe pain and distress visible; loud complaints of pain or loud moans and screams; very resistant; thrashing about, unreassurable; physical reactions such as faintness or vomiting.

2. Overall the patient seemed to experience:

☐ less distress than most patients ☐ about the usual amount of distress ☐ more distress than most patients

3. The patient: walked out____ was taken out in a wheelchair____

4. Extent of pregnancy in weeks: (circle number of weeks) 5 6 7 8 9 10 11 12 13 14 14+

5. Blood pressure: before_____ after_____ Respiration: before_____ after_____

6. Pulse rate: before_____ after_____

7. Specify any difficulties during: a) Pelvic exam_____

b) Procedure_____

c) Anesthesia_____

8. Ergotrate injection given: no____ yes____

QUESTIONNAIRE II

INSTRUCTIONS:

The following questions relate to your menstrual periods and to your sexual experience. The information requested is extremely important to help us develop a better understanding of women's feelings about abortion. It is intended to help other women seeking abortions in the future. Do NOT write your name on this questionnaire. Your name will not be used in any way in this study, so that you may answer these questions freely. There are no right or wrong answers.

1. How old were you when you had your first menstrual period? _____ years.

2. How regular have your periods been in the past year (before you became pregnant)?

Like clockwork ____	Sometimes irregular ____	Usually irregular ____	Always irregular ____

2b. If your periods were ever different in the past, what was the difference?

_____

_____

3. How many days does your period last? 1 2 3 4 5 6 7
(circle the number) 8 9 10 11 12 13

4. How often do you have periods? every _____ days

5. How heavy is your menstrual flow? light ____ moderate ____ heavy ____

6. On the next two pages is a list of symptoms which women sometimes experience. Please describe your experience of these symptoms during the three different time periods listed here:

Column A: during your usual menstrual flow.

Column B: during the one week before your usual menstrual flow.

Column C: during the remainder of your menstrual cycle---when you are not having your eriod and other than the one week before it.

Report any experience of these symptoms whether or not they seem to be related to your menstrual cycle.

For each answer choose the descriptive catagory listed which best describes your experience of that symptom during that time. Write the number of that description in the space provided. Even if none of the descriptions are exactly correct, choose the one that best describes your experience. Do not leave anybblank spaces.

Descriptive Catagories:
1 - no experience of symptom
2 - barely noticaable
3 - present, mild
4 - present, moderate
5 - present, strong
6 - acute or partially disabling

	A during usual flow	B one week before	C remainder of cycle
1. Weight gain			
2. Insomnia			
3. Crying			
4. Lowered school or work performance.			
5. Muscle stiffness			
6. Forgetfulness			
7. Confusion			
8. Take nap or stay in bed			
9. Headache			
10. Skin disorders			
11. Loneliness			
12. Feelings of suffocation			
13. Affectionate			
14. Orderliness			
15. Stay home from work or school . . .			

	A during usual flow	B one week before	C remainder of cycle
16. Cramps			
17. Dizziness or faintness			
18. Excitement			
19. Chest pains			
20. Avoid social activities			
21. Anxiety			
22. Backache			
23. Cold sweats			
24. Lowered judgment			
25. Fatigue			
26. Nausea or vomiting			
27. Restlessness			
28. Hot flashes			
29. Difficulty in concentration			
30. Painful or tender breasts			
31. Feelings of well-being			
32. Buzzing or ringing in ears			
33. Distractible			
34. Swelling (of abdomen, breasts, or ankles)			
35. Accidents (cut finger, break dish etc.)			
36. Irritability			
37. General aches and pains			
38. Mood swings			
39. Heart pounding			
40. Depression (feel sad or blue)			
41. Decreased efficiency			
42. Lowered motor coordination			
43. Numbness or tingling in hands/feet.			

KEY: 1- none 2-barely noticeable 3- mild 4- moderate 5- strong 6- acute or disabling	A during flow	B week before	C rest of cycle
44. Change in eating habits			
45. Tension			
46. Blind spots or fuzzy vision			
47. Bursts of energy or activity . . .			

7. How old were you when you first had sexual intercourse? _____ years old

8. Have you had intercourse <u>regularly</u> since then?

_____yes _____no _____for periods of time but not consistently

9. During the last six months how frequently have you had sexual intercourse?

___ several times a week or more ___ at least once a week ___ less than once a week ___ less than once a month

10. Would you prefer to have intercourse:

_____ more often _____ about the same amount _____ less often

11. How often do you have an orgasm during intercourse?

___never ___rarely ___sometimes ___usually ___always

12. How many partners have you had sexual intercourse with? _____

13. Check the ending to the following sentence to best describe yourself:

"I usually engage in sexual intercourse because:

___ I find it hard to say 'no'."
___ I want to, although I do not usually enjoy it."
___ I feel obligated to my boyfriend or husband."
___ I feel sexually excited."
___ I am under the influence of alcohol."
___ I enjoy it and want to."
___ I want to give my boy riend or husband pleasure and it makes him happy."
___ I feel pressure from my boyfriend or husband."

14. Place a check at the point on the line that best describes you.

a. "I usually enjoy sexual intercourse:

"very much" _____ "not at all"

b. "I say 'no' to my boyfriend or husband when he wants to have intercourse:

"never" _____ "nearly always"

ANSWER THE FOLLOWING QUESTIONS ONLY IF YOU HAVE HAD AN ABORTION BEFORE TODAY.

1. Date of previous abortion: _____/_____/_____
month day year

2. Your age at that time: _____ years old

3. How painful was the abortion procedure? (Place a check at the point along the line that best describes you.)

Not at all painful _____ Extremely painful

4. What other feelings do you recall having during that procedure? _____

_____

_____

5. Was the procedure today: ___ more painful? ___ about the same? ___ less painful?

6. Did you have any problems after the abortion that were treated:

___ by a doctor? ___ by hospitalization?

7. If so, what was the problem? ___infection ___hemorrhage ___ other, specify:

_____

_____

8. How did you feel after that abortion? (check all that apply to you.)

___no change from before ___ relieved ___sad ___guilty ___happy ___regretful

(Follow-up Questionnaire)

Return this form on or after (4 weeks later) (S's code number)

1a. How many days did you bleed following the procedure?

0 ___ 1-10 ___ 10-15 ___ 16-20 ___ 21-28 ___

1b. How heavy was the bleeding? slight ___ moderate ___ heavy ___

2a. If you had an increase in temperature, what was your temperature?

99°___ 100°___ 101°___ 102°___ 103°___ above 103°___

2b. How many days was your temperature above normal? _____ days

3a. Check any physical problems you had as a result of the procedure:

None___ Severe pain or cramps ___ Infection ___ Hemorrhage or uncontrolled bleeding ___

Other ___: specify_____

3b. Was this problem treated by a doctor? No___ Yes___

3c. Were you hospitalized? No___ Yes___ For how many days? _____ days

4a. Check all words that describe your feelings since the procedure:

Relief___ Depression___ Happiness___ Sadness___ New sense of control over your life ___

Other___; specify_____

4b. How many days did any feelings of sadness or depression last? _____ days

5. Comments:

TABLE 8

Ratings of Conflict About the Abortion Based On Reason For Having An Abortion (N = 22)[a]

Patient Information Sheet Question 7: Reason for Having an Abortion	Amount of Conflict About The Abortion			Rating Assigned Reason
	None	Some	Much	
Not married	6	12	4	2
Parents want it	2	6	15	3
Do not want child	10	11	1	1
Health reasons	12	9	1	0
Financial reasons	3	15	4	2
Boyfriend/Husband wants it	1	5	17	3
Never want child	14	5	3	0

[a]Twenty-two mental health professionals, including clinical psychologists, psychiatrists, and psychiatric social workers rated the reasons as to conflict.

TABLE 9

Ratings of Reasons for Engaging in Sexual Intercourse as to Externalization or Internalization of Responsibility (N = 15)[a]

Questionnaire II Question 13: Reason for Sexual Intercourse	Responsibility for Intercourse		Rating Assigned[b]
	Internal	External	
Hard to say 'no'	7	8	1
Want to/do not enjoy	10	4	0
Feel obligated	4	11	2
Sexually excited	14	1	0
Influence of alcohol	1	14	2
Enjoy/want to	15	0	0
Give pleasure	7	8	1
Feel pressure	1	13	2

[a]Fifteen mental health professionals rated the reasons

[b]Ratings indicate: 0 = low externalization of responsibility (internal)
1 = moderate externalization
2 = high externalization

Below are listed reasons women give for having an abortion. Please rate each reason for the amount of conflict you believe a woman would have about the abortion if she gave that reason as her main one for having the abortion. Assume the woman has no children and is 20 to 25 years old.

No Conflict = 0
Some Conflict = 1
Much Conflict = 2

I am not married to my sexual partner. _____

My parents want me to have an abortion. _____

I do not want a child now. _____

Health reasons (specified). _____

I am financially unable to have a child. _____

My boyfriend or husband wants me to have an abortion _____

I do not ever want children. _____

The following question is part of a questionnaire given to women having abortions. Please rate the answers to the question according to the following criteria:

I = internal responsibility for sexuality and for having intercourse.

E = external responsibility for sexuality and for having intercourse.

Check the ending to the following sentence to best describe yourself:

"I usually engage in sexual intercourse because:

____ I find it hard to say 'no."

____ I want to, although I do not usually enjoy it."

____ I feel obligated to my boyfriend or husband."

____ I feel sexually excited."

____ I am under the influence of alcohol."

____ I enjoy it and want to."

____ I want to give my boyfriend or husband pleasure and it makes him happy."

____ I feel pressure from my boyfriend or husband."

APPENDIX B

TABLE 10

Selected Characteristics of Study Sample

Characteristic	Number	Percent
Residence		
NYC	32	13
NY State	32	13
Out-of-state	184	74
Religion		
Catholic, Orthodox Jewish, Fundamentalist Protestant	121	50
Other	123	50
Occupation		
Student	71	30
Other (employed, housewife)	169	70
Education		
Less than 12 years	5	02
High school graduate	60	25
Some college	114	47
College graduate	48	20
More than 16 years	17	06
Birth Control at Conception		
Pill, IUD	15	06
Diaphragm	25	11
Condoms, Foam	29	12
Rhythm, Withdrawal	41	18
None	124	53
Expressed Conflict about the Abortion		
Low	5	02
Moderately low	139	57
Moderately high	91	37
High	9	04

TABLE 10 (cont'd)

Selected Characteristics of Study Sample

Characteristic	Number	Percent
Gestation (in weeks)		
Less than 6	1	00
6 - 7	51	21
8	73	30
9	52	21
10	52	21
11 - 12	14	02
Number of Pelvic Exams		
None	36	15
1	47	19
2 - 3	67	27
4 - 5	45	18
6 - 10	34	13
More than 10	18	07
Years of Sexual Intercourse		
Less than 1	16	07
1	31	13
2	57	23
3	38	16
4	45	19
5 - 6	31	12
More than 7	25	10
Enjoyment of Sexual Intercourse		
Not at all	5	02
Slight	10	04
Moderate	24	10
Considerable	51	21
Very much	152	63
Fear of Abortion Procedure		
None	55	24
Slight	46	20
Moderate	57	25
Considerable	37	16
Very much	37	16

TABLE 11

Numbers of Subjects Seen By Nurses and Doctors With Mean Distress Rating of Subjects by Each Nurse

Medical Personnel	Esperimental Ss	Control Ss	Percent of Total	Mean Distress Rating[a]
Nurse[b]				
#1	8	6	06	1.14
#2	3	4	03	1.43
#3	17	6	09	1.09
#4	4	4	03	1.71
#5	14	6	08	.75
#6	42	22	26	.80
#7	26	8	13	1.33
#8	9	5	06	1.14
#9	42	21	26	1.19
Doctor[c]				
#1	61	26	35	--
#2	7	3	04	--
#3	1	1	01	--
#4	45	21	27	--
#5	39	19	23	--
#6	12	12	10	--

[a]Nurse distress ratings are not available for 6 subjects. Scale = 0 to 4.

[b]Data on nurse present during the procedure is not available for 1 subject.

[c]Data on doctor performing the abortion is not available for 1 control subject.

TABLE 12

Means and Standard Deviations of All Study Variables

Hypothesis Number	Variable Name	Mean	Standard Deviation	Range
1	Anxiety (STAI A-State)	46.38	11.69	20 to 77
	Distress Factor Scores[a]	50.00	1.20	47.5 to 53.3
2a	Years of School	14.07	1.75	9 to 20
2b	Degree of Devoutness	.31	.59	0 to 2
	Religion[c]	.50	.50	0 to 1
3a	Age at Menarche	12.68	1.40	9 to 18
	Menstrual Regularity	2.25	.85	0 to 3
	Days of Menstrual Period	5.23	1.19	2 to 9
	Days in Menstrual Cycle	29.07	3.66	8 to 48
	Heaviness of M Flow	1.03	.50	0 to 2
	Menstrual and Premenstrual Symptoms:Factor I Scores[a]	50.00	1.05	48.4 to 54.9
	Positive Affect in M Cycle: Factor II Scores[a]	50.00	1.09	47.5 to 53.6
	Intermenstrual Symptoms: Factor III Scores[a]	50.00	1.13	48.2 to 57.5
3b	Number of Pelvic Exams	3.57	3.23	0 to 11+
3c	Number of Birth Control Methods Ever Used	1.52	1.08	0 to
	Effectiveness of BC Method Used the Longest Time	2.42	1.44	0 to 4
	Months of Use of Longest Used BC Method	18.05	11.67	0 to 60
	Months of Gaps in BC Use	0.97	3.45	0 to 39

[a]Factor scores are standard scores with 50 added to each score so that all are positive.

TABLE 12 (Cont'd)

Means and Standard Deviations of All Study Variables

Hypothesis Number	Variable Name	Mean	Standard Deviation	Range
3c	Number of Usual Symptoms with BC Methods	.51	.82	0 to 4
	Number of Unusual Symptoms with BC methods	.13	.39	0 to 3
3d	Number of Abortions	.13	.34	0 to 1
3e	Days since Start of Last Menstrual Period	63.82	9.55	21 to 93
	Uterine Size in Months	8.51	1.42	6 to 12
4a	Years of Sexual Intercourse	3.26	2.06	0 to 9
	Regularity of Intercourse	1.02	.65	0 to 2
	Frequency of Intercourse	1.82	1.00	0 to 3
	Number of Sexual Partners	4.11	6.10	1 to 80
4b	Satisfaction with Frequency of Intercourse	.65	.47	0 to 1
	Frequency of Orgasm	2.34	.98	0 to 4
	Degree of Externalization of Responsibility for Intercourse	.32	.54	0 to 2
	Enjoyment of Intercourse	3.38	.96	0 to 4
4c	Percent of Women in Career Field Chosen	67.95	24.21	3 to 99
4d	Desire for a Child	.75	1.10	0 to 4
4e	Conflict about the Abortion	1.42	.60	0 to 3

TABLE 12 (Cont'd)

Means and Standard Deviations of All Study Variables

Hypothesis Number	Variable Name	Mean	Standard Deviation	Range
5	Follow-up (FU): weeks of bleeding	1.67	.94	0 to 4
	FU: Amount of Temperature	100.11	.63	99 to 103
	FU: Days of Temperature	.98	2.55	0 to 30
	FU: Pain and Cramps	.32	.39	0 to 1
	FU: Infection	.09	.24	0 to 1
	FU: Hemorrhage	.01	.09	0 to 1
	FU: Treated by a Doctor	.20	.23	0 to 1
	FU: Hospitalized	.01	.06	0 to 1
Psychological Sequelae	Relief	.83	.38	0 to 1
	Happiness	.37	.48	0 to 1
	Depression	.36	.48	0 to 1
	Sadness	.28	.45	0 to 1
	Number of Days of Depression or Sadness	4.66	8.99	0 to 60
Physiological Measures	Sys. BP Pre	122.40	11.83	90 to 160
	Sys. BP Post	114.87	12.26	80 to 150
	Dias. BP Pre	74.45	9.21	40 to 99
	Dias. BP Post	73.29	9.37	40 to 99
	Pulse Pre	83.09	6.73	60 to 99
	Pulse Post	79.55	5.59	60 to 99
	Respiration Pre	19.49	1.04	18 to 24
	Respiration Post	19.24	1.42	18 to 28