The Effects of Group Systematic Desensitization on The Symptoms of Primary Dysmenorrhea

Steven Kenneth Reich
THE UNIVERSITY OF NEW MEXICO
ALBUQUERQUE, NEW MEXICO 87106

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THE EFFECTS OF GROUP SYSTEMATIC DESENSITIZATION
ON THE SYMPTOMS OF PRIMARY DYSMENORRHEA

Title

Steven K. Reich

Candidate

Guidance and Special Education

Department

Wayne P. Hoellenberg
Dean

August 2, 1977
Date

Committee

Chairman

Robert A. White

Clifford A. Albright

William R. Jenkins
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THE EFFECTS OF GROUP SYSTEMATIC DESENSITIZATION ON THE SYMPTOMS OF PRIMARY DYSMENORRHEA

BY
STEVEN K. REICH
B.A., Grinnell College, 1967
M.A., The University of New Mexico, 1970

DISSERTATION

Submitted in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy in Education Area of Counseling Psychology in the Graduate School of The University of New Mexico Albuquerque, New Mexico December, 1972
DEDICATION

This work is dedicated to the memory of Dr. L.C. Bernardoni, for his tremendous contributions to my career and growth, and mostly for his overall goodness as a human being.
ACKNOWLEDGEMENTS

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THE EFFECTS OF GROUP SYSTEMATIC DESENSITIZATION ON THE SYMPTOMS OF PRIMARY DYSMENORREA

BY

Steven K. Reich

ABSTRACT OF DISSERTATION

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THE EFFECTS OF GROUP SYSTEMATIC DESENSITIZATION
ON THE SYMPTOMS OF PRIMARY DYSMENORRHEA

Steven K. Reich, Ph.D.
Department of Guidance and Special Education
The University of New Mexico, 1972

The purpose of this study was to examine the effects of group systematic desensitization on the symptoms of primary dysmenorrhea in relation to anxiety. The sample consisted of an experimental group of 12 women drawn from the University of New Mexico Student Health Center and the Presbyterian Hospital School of Practical Nursing who were treated in four sessions with group systematic desensitization focused on menstruation, and a control group drawn from the Bernalillo County Planned Parenthood Association not treated with group systematic desensitization. The experimental subjects were treated in small groups, utilizing semi-automated procedures through the use of tape recordings, and standardized hierarchies.

Two instruments were used in this investigation. The first was the Semiobjective Criteria of Teen-Age Dysmenorrhea, which was used to measure degree of primary dysmenorrhea, and subsequent change in dysmenorrhea. The second was the Taylor Manifest Anxiety Scale, which was used to determine the anxiety level of the subjects, and to provide a cut-off point between the high-anxiety and low-anxiety groups.

Multiple classification analysis of variance, and Pearson product-moment correlation coefficients were computed. The .05 level was accepted for significance.
The results of this study showed a significant difference in amount of change in primary dysmenorrhea between the treated and the untreated subjects. There was a significant interaction, in addition, between treatment and anxiety level, indicating that the subjects receiving most benefit from treatment were those belonging to both the treatment and the low-anxiety groups. No difference in amount of dysmenorrhea change was found between the high-anxiety and low-anxiety groups, however. Four significant correlation coefficients supported the above findings, and indicated significant relationships between level of anxiety and degree of dysmenorrhea or change in dysmenorrhea.

It was concluded that an economical and efficient technique is available to the practitioner with which to treat the symptoms of primary dysmenorrhea. This is of great potential significance, since the treatment could, if applied to the many women suffering from primary dysmenorrhea, contribute to the saving of millions of working hours per year, and an unknown amount of money on medications.

The data suggested, in addition, that the treatment was effective in reducing highly specific anxiety related to menstruation and dysmenorrhea. Since systematic desensitization, an anxiety reduction technique, was effective in reducing dysmenorrheic symptoms, anxiety in some form is probably responsible in part for the syndrome.

It was recommended that the relationships between anxiety and primary dysmenorrhea be further studied, particularly in reference to the development of methods with which to alleviate the symptoms of women with high general anxiety levels.
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CHAPTER I
INTRODUCTION

Modern man appears to be attempting, through both formal and informal methods of education, to treat the various functions of the menstrual cycle scientifically and impassively. Current textual material in sex education often portrays a naturalistic and accepting attitude towards the menstrual function, and actively strives to counteract the effects of long-standing myths and superstitions (Johnson, 1968). Although the entire subject of menstruation is still embarrassing to some women, there are apparent efforts to reduce the secrecy and mystique surrounding the function. In their advertising publications, manufacturers of sanitary apparel advise parents to inform their children of the facts of menstruation with the maximum amount of accuracy and acceptance, and with the least possible degree of embarrassment and fear.

The attitudes towards the menstrual function among various primitive cultures, however, were virtually opposite those being espoused today. The notion of the uncleanness of the menstruating woman was practically universal, and was an extension of a generalized demonic world conception held by primitive man (Sumner, 1960). In addition, in a great many cultures, the menstruating woman was a fearsome and revolting creature, as reported by Ellis and Abarbanel (1961):
In primitive cultures the menstruating woman has always been regarded not only as dirty, but also as dangerous. She is believed to be particularly dangerous to all other manifestations of reproductive functions. Thus, her influence is especially damaging to crops, to domestic animals, and even more devastating to men. It is usually imperative, therefore, that menstruating women withdraw from the household, if not from the community itself. Menstruation is, accordingly, surrounded by many strict taboos, rituals, and strange superstitions. Elaborate rituals for purification following menstruation are common in some cultures, especially in the Hebrew and Mohammedan religions. In virtually all of the older cultures coitus during menstruation is specifically interdicted (p. 738).

Unfortunately, these beliefs have not been rejected in their entirety by modern scientists, much less by laymen. The unspoken taboo on intercourse during the menstrual period is still observed quite commonly, and the incidence of menstrual disorder, partially due, perhaps, to cultural attitudes, is sufficient to justify this study.

Hays (1964) stated:

Even Hermann Ploss and Max Bartles in their gynecological and anthropological work *Woman*, first published in Germany in 1905, wrote: 'But it seems very doubtful whether these superstitions and traditions will ever be eradicated. They are far too deeply and far too widely ramified in the mind and emotions of humanity (p. 42).'

Beliefs about women's sexuality are not universally enlightened, and conceptions of menstruation and childbirth as representative of suffering are still very much alive. These aspects of female sexuality were viewed negatively by Bonaparte (1953), and perhaps indicate the extent to which these beliefs are held:
The most superficial observer cannot help noting that in the sphere of reproduction the lot of men and of women, in respect of pain suffered, is an unequal one. The man's share in the reproductive functions is confined to a single act - that of coitus - which he necessarily experiences as pleasurable, since, for him, the function of reproduction coincides with erotic function. The woman, on the other hand, periodically undergoes the suffering of menstruation, the severity of which varies with the individual; for her, sexual intercourse itself is initiated by a process which involves in some degree the shedding of her blood, namely, the act of deflo-ration (p. 169).

There is undeniably real pain and suffering associated with female sexual functioning. To concentrate solely on the negative aspects of feminine sexuality, however, is to distort seriously the nature of the entire experience.

The fact that there exist many ignorant and fearful beliefs surrounding the menstrual function does not negate the reality of disabling menstrual syndromes, the most common of which is dysmenorrhea. Israel (1965) stated that dysmenorrhea is the most neglected disorder of adolescence. Two definitions of the term "dysmenorrhea" will be presented to provide a comprehensive view of the clinical picture. Israel (1967) defined primary dysmenorrhea as:

...disabling menstrual pain of obscure etiology. The uterine colic is often associated with other symptoms such as headache, backache, physical hebetude, nausea, and vomiting... (p. 135).

A more complete description of the disorder was offered by Santamarina (1969):
Clinically, many classifications for dysmenorrhea have been suggested, but for all practical purposes the most feasible is to divide the patients with this disorder into two groups. First, the primary (essential, idiopathic, or intrinsic dysmenorrhea) where no discernible lesion is demonstrable in the uterus, fallopian tubes or ovaries. The other group is the so-called secondary or acquired dysmenorrhea. By the latter, one means that the pain is produced by organic disease, which in the majority of cases is confined to the pelvis.

As has been stated previously, this variety is often referred to as intrinsic dysmenorrhea and the most prominent manifestation is pain in the pelvic region which may be accompanied by other symptoms such as nausea, headache, lassitude, irritability or gastrointestinal disturbances... Many of the subjects with dysmenorrhea will experience prodromal symptoms such as mammary discomfort, swelling of the feet, lower abdominal distention, depression or irritability (pp. 708-709).

The nature of dysmenorrhea, both in terms of its etiology and treatment, has been surrounded by controversy. There are various theories concerning the etiology of primary dysmenorrhea, but due to the blending of physiological and psychological factors, the results are obscure (Dysmenorrhea, 1967). Meunier (1962) related a variety of causes of the syndrome, including both psychological and physical components, but concluded that any statement concerning etiology would have to recognize the many complex factors that are involved. "It would appear that the maximum understanding of this syndrome may well be a function of a combined approach in which psychological as well as organic concomitants are equally considered and evaluated (Paulson and Wood, 1966, p. 995)."
The physiological factors contributing to the entire clinical picture in dysmenorrhea have been identified as hormonal imbalance, cervical obstruction, hypoplastic neurogenic uterus of Theobald, and vasoconstriction of the spiral vessels (Santamarina, 1969).

The psychological components of the disorder are equally varied. There are many advocates of the "neurosis theory," which views dysmenorrheic symptoms as indicative of an underlying neurotic disorder. Benson (1968) stated that "primary dysmenorrhea is the most common manifestation of neurosis in women (p. 693)." Horney (1967) asserted that:

The emotional factors underlying a dysmenorrhea are much too complicated to be established in an experimental situation; but even if you could by experiment expose a person to certain very complicated emotional conditions, you could not expect any concrete results, because a dysmenorrhrea is never the result of just one emotional conflict, but always presupposes a series of emotional preconditions whose foundation has been laid at different times (p. 163).

Coppin (1965) reported that while there is no relationship between dysmenorrhea and neuroticism on test results, a significant percentage (25%) of neurotic women suffer from the disorder. This does not, however, necessarily exceed the average for all women, which has been estimated as including from 3 to 84 per cent of the entire female population (Golub, Menduke, and Lang, 1959; Israel, 1967; and Pasnau, 1969). Frisk, Widholm, and Hortling (1965) emphasized difficulties in psychosexual identification, and tension connected with insecurity.

Significantly less complex are those theories emphasizing the
role of learning in the symptom constellation of dysmenorrhea. A number of authors have suggested that the emergence of the disorder may reflect cultural (Mead, 1955) and family expectations, and might therefore be learned by a young girl directly from her mother. Israel (1967) described the comprehensive role that learning might play in the etiology of primary dysmenorrhea:

The persisting taboos and ignorant superstitions, unending modern evidence of ancient folklore that surrounds all aspects of the menstrual cycle, make the psychogenic aspect of dysmenorrhea inevitable. Some of these factors are superficial disturbances of the ego, such as an easily perceived fear of pain; others are deep-rooted, not discernible, and are undetected in a lifetime - for example, the difficulty that some women have in accepting their feminine role.

Psychogenic seeding during adolescence, leading to fear and anxiety, is probably an important contributory factor in the etiology of primary dysmenorrhea. Such unconscious, social conditioning of girls by older women in their environment, although perhaps not entirely causative, does quite conceivably conduce faulty reactions. It is perhaps significant that the vernacular terminology for menstruation in practically all languages, manifesting the customary relationship between linguistic and cultural behavior, includes a group of words that point to inconvenience and disability - unwell, indisposed, sick, the curse, etc. It is worth noting, in passing, that such polite but damming synonyms for the catamenial state are far more common in the United States (p. 136).

Israel added that anxiety might result from this linguistic suggestion, and could be reinforced by the coddling and overindulgent mother who may have suffered from dysmenorrhea herself, and therefore displays her own anxiety.
Benson (1968) stated that the dynamics of primary dysmenorrhea include symptoms due to negative conditioning. "Misinformation, taboos, and old wives' tales convince the patient that menstruation and sickness are identical. A neurotic, dysmenorrheic mother or close friend who retreats into invalidism each month personifies this problem (p. 693)."

Mead (1955) added an interesting perspective of cultural learning, comparing reactions to dysmenorrheic symptoms among different peoples.

The treatments for dysmenorrhea are as varied as the theories concerning its etiology. Physiological treatments broadly include the use of analgesics, steroid therapy, and surgery (Santamarina, 1969). Israel (1967) reported that many analgesics provide symptomatic relief, while Kresmer and Mitchell (1971) described the results of research indicating that the use of birth control pills frequently alleviated many of the symptoms of primary dysmenorrhea.

Psychotherapeutic treatments are probably less common, and include, for the most part, reeducation (Benson, 1968) and simple reassurance (Santamarina, 1969). Psychoanalysis is the treatment of choice by those who view dysmenorrhea as a symptom of underlying neurotic conflict, but does not deal specifically with dysmenorrhea as the presenting problem. The only psychotherapeutic treatment specifically directed at dysmenorrhea was Mullen's (1968) use of systematic desensitization, reported in his case study of "Sally." The patient had suffered from extremely severe symptoms of long duration, and was nearly incapacitated at the time of menstruation. The treatment included desensitization focused both on the menstrual
function itself and pregnancy, with an apparently successful outcome. No symptom substitution was observed, and the patient was still vastly improved on six-month follow-up. To date, this would have to be considered the most promising example of psychotherapy for dysmenorrhea reported in the literature.

Systematic desensitization, both individually and in groups, has been consistently proven to be a successful and reliable method of treatment for phobias and more generalized anxieties, but has been less frequently used for the treatment of psychophysiological disorders (Paul, 1969).

Statement of the Problem

The purpose of this study was to determine the effects of group systematic desensitization on the symptoms of primary dysmenorrhea in relation to anxiety level. The .05 level of significance was used to test the following null hypotheses:

\[ H_0 \] There will be no significant difference in amount of change in degree of primary dysmenorrhea, as measured by the Semiobjective Criteria of Teen-Age Dysmenorrhea, between an experimental group exposed to four sessions of group systematic desensitization, and a control group not exposed to group systematic desensitization.

\[ H_0 \] There will be no significant difference in amount of change in degree of primary dysmenorrhea, as measured by the Semiobjective Criteria of Teen-Age Dysmenorrhea, between a high-anxiety group and a low-anxiety group, as measured by the Taylor Manifest Anxiety Scale.
\textbf{H_{03}} There will be no significant interaction between the two independent variables (high or low anxiety, as measured by the Taylor Manifest Anxiety Scale, and exposure or non-exposure to group systematic desensitization) and amount of change in primary dysmenorrhea, as measured by the Semiobjective Criteria of Teen-Age Dysmenorrhea.

\textbf{Justification of the Problem}

The justifications for the investigation of this problem were varied, and centered around several factors. The first important element was the incidence of primary dysmenorrhea among the female population. In a study of teen-age dysmenorrhea, Golub, et al. (1959) reported that, in a previous study of more than 1200 young women, 68 per cent had considered themselves dysmenorrheic. In the 1959 study, 71 per cent of the subjects evidenced dysmenorrhea to some degree.

The amount of money spent by women on visits to physicians and medication as a result of dysmenorrhea has been impossible to estimate. The amount is considerable, inasmuch as the symptoms are of sufficient severity to cause the loss of approximately 140,000,000 working hours annually (Santamarina, 1969).

Finally, this appeared to be a potentially profitable investigation in view of the significant number of authors who considered the psychological aspects of dysmenorrhea to be a major component of its etiology. Since the medical opinions about both etiology and treatment have been varied and obscure, and since one
psychotherapeutic procedure has been proven effective (albeit in a single reported case study), a subjection of this approach to controlled research was deemed appropriate.

Assumptions

A number of assumptions have been made in conducting this study. The experimenter assumed that the subjects participating in the research answered the measuring instruments openly and honestly. It has been further assumed that the subjects were not biased in any way because the experimenter was a male. The reading level of the measuring instruments was presumed to be within the capabilities of all subjects included in the sample, and the experimental treatment was assumed to have been of sufficient duration to be effective.

Limitations of the Study

In the present study no explicit statement regarding the physiological aspect of the etiology of primary dysmenorrhea has been proposed or investigated. The existence of physiological components in this syndrome have not been denied; this study, however, was attempting to discover whether treatment aimed at the psychological aspect of the disorder would in any way alleviate the symptoms.

The subject of dysmenorrhea has been neglected (Israel, 1965),
and the literature that does exist is characterized principally by its lack of purpose. The literature reviewed has been confined primarily to the past ten years. In addition, the materials on systematic desensitization have been reviewed only when they were appropriately related to the subject and procedure of this study.

Systematic desensitization has rarely been applied to psychophysiological disorders. A solid foundation of proven application of this technique in similar types of therapeutic situations is therefore not available.

This study was limited in the sense that only volunteers were used as subjects. There was no method of determining, within the context of this investigation, whether there were any qualitative differences between the experimental sample, and other individuals who refused to participate in the study.

Due to the nature of the variables under consideration, objective techniques of measurement were precluded, and only self-reports were available to provide the necessary information. The use of subjective data did not hamper the investigation (as was discussed further in Chapter III), and it was assumed that all subjects answered the measuring instruments honestly and openly.

There was a degree of non-equivalency between the control and experimental groups that could be considered a limitation. Although all subjects used in this study were volunteers, many of the women participating in the research refused to take part in the actual treatment procedure, and were only willing to answer the
questionnaires required of the control group. The control and experimental groups, therefore, were composed of women who had volunteered to participate in different aspects of the research.

Abbreviations and Definitions of Terms

Anxiety:

A feeling of apprehension, uncertainty, or fear, which was defined for the purposes of this study as that which the individual revealed on the Taylor Manifest Anxiety Scale (Taylor, 1953).

Change Score:

The difference between a subject's score on the pre-test and post-test of the Semiobjective Criteria of Teen-Age Dysmenorrhea (Golub, et al., 1959).

$D_{s_1}$:

The pre-test score on the Semiobjective Criteria of Teen-Age Dysmenorrhea.

$D_{s_2}$:

The post-test score on the Semiobjective Criteria of Teen-Age Dysmenorrhea.

Group Systematic Desensitization:

The psychotherapeutic technique developed and refined by Wolpe (1958), and further modified to include group application, use of tape-recorded relaxation and hierarchy instructions, and short-term time limiting.

Primary Dysmenorrhea:

The complex of physiological and psychological symptoms commonly referred to as functional
"menstrual cramps;" defined for the purposes of this study was the score revealed by the individual on the Semiobjective Criteria of Teen-Age Dysmenorrhea (Golub, et al., 1959).
CHAPTER II
REVIEW OF LITERATURE

This chapter presents the theoretical and empirical background of the specific subject areas relevant to this study. The following areas were considered:

1) Anthropological bases of menstrual attitudes and taboos.
2) Physiological and psychological concomitants of menstruation, dysmenorrhea, and other menstrual disorders.
3) Systematic desensitization - theoretical framework and application.
4) Modifications of systematic desensitization.

Anthropological Bases of Menstrual Attitudes and Taboos

Menstrual attitudes and customs play a relatively minor part in contemporary society in terms of public ritual, but this was definitely not the case in primitive cultures. Throughout a variety of cultures, both primitive and contemporary, menstruating women are regarded, overtly or covertly, as unclean, dangerous, and generally injurious to other living things. Speaking of the attitude toward menstruating women, Ellis and Abarbanel (1961) wrote:

Very widespread is the attitude that a man should not have sexual intercourse with his wife (or any woman) when she is menstruating. Only a very few
societies consider the menstruating woman a fit sex partner. Most peoples regard the menstrual discharge as 'unclean' and the intimate contact with it which would occur during the sex act something to be strictly avoided. In addition to the ban on intercourse, the menstruating woman may find that she must avoid certain foods, discontinue bathing, or refrain from participating in certain social activities, such as dancing. In other societies the menstruating woman is even more confined for her period to a special compartment in the dwelling or in a separate hut (p. 310).

The preceding general taboos were based on a number of notions concerning the nature and meaning of the menstrual cycle. The variety of instances of the awe, fear, and disgust with which man has regarded this function is vast (Driver, 1961; Frazer, 1960; Hays, 1964; Johnson, 1968; Pasnau, 1969; and Sumner, 1960). The sources of these attitudes appear to revolve around the meaning of blood in primitive society. Hays (1964) stated that "Blood in all of its manifestations is a source of mana. In the case of menstrual blood the ancient ambivalence is in evidence with the harmful aspect predominating. The dangers of contact and contagion are so great that women are nearly always secluded or forced to reside apart during their monthly periods (p. 40)."

Sumner (1960) emphasized the ritual idea of uncleanness, which women were thought to represent. Women were regarded as unclean due to the belief that they were possessed by demons at the time of childbirth, menstruation, and marriage. At these times, therefore, they were a source of danger to other individuals and the community at large.

Within the larger spectrum of taboos and fears connected with
the menstrual cycle, the emphasis on the specific rituals at the menarche appears to be rather pronounced. Menstrual customs were in themselves quite severe, but generally first menstruation was the time of strictest ritual. Frazer (1960) reported that:

The motive for the restraints so commonly imposed on girls at puberty is the deeply ingrained dread which primitive man universally entertains of menstruous blood. He fears it at all times but especially on its first appearance; hence the restrictions under which women lie at their first menstruation are usually more stringent than those which they have to observe at any subsequent recurrence of the mysterious flow (p. 698).

In addition, the nature of the specific puberty rites often related to the wealth and stature of the girl's family. For example, the daughters of chiefs often appeared to be subjected to more stringent rituals.

So great was primitive man's fear of the first appearance of menstrual blood that puberty seclusions were often extremely long, and unimaginably severe. In New Ireland, girls were often confined for as long as four or five years in small cages kept in the dark. In Kabadi, a district of British New Guinea, chief's daughters, when they reach puberty, are kept indoors for periods of two to three years, never being allowed to see the sun, and are on no condition permitted to leave the house (Frazer, 1960).

Among the Ot Danoms of Borneo, girls at the age of eight or ten years are shut up in a little room or cell of the house, and cut off from all intercourse with the world for a long time. The cell, like the rest of the house, is raised on piles above the ground, and is lit by a single small window opening on a lonely place, so that
the girl is in almost total darkness. She may not leave the room on any pretext whatever, not even for the most necessary purposes. None of her family may see her all the time she is shut up, but a single slave woman is appointed to wait on her. During her lonely confinement, which often lasts seven years, the girl occupies herself in weaving mats or with other handiwork. Her bodily growth is stunted by the long want of exercise, and when, on attaining womanhood, she is brought out, her complexion is pale and wax-like (Frazer, 1960, p. 642).

Ellis and Abarbanel (1961) cited numerous instances of long confinement at the time of menarche, among primitive tribes of South America. The seclusion, often lasting as long as two years, varied according to the status of the girl's family. Men generally avoided all contact with these girls during their confinement, as exposure could mean the loss of their masculine powers. The customs among North American Indians, while not as severe, were elaborate in their focus on the natural sources of sustenance of the tribe (Driver, 1961):

...the menstruant is in a state of close contact with the supernatural which may harm her or other persons if she does not behave properly. She is generally secluded. She especially avoids contact with hunters, fishermen, gamblers, shamans, and priests, all of whom are especially susceptible to harm at this time. She diets in order to avoid illness or bodily disfigurement, and especially abstains from meat so as not to spoil the hunting success of the men who killed the game. She must not touch her body with her hands, lest she catch a skin disease or lose her hair but must use a stick provided for the purpose (p. 443).

Although the fear of menstruation was considerably greater at the menarche, the taboos applied to older women were comparable
in their focus on seclusion. Women were almost universally isolated during their menstrual periods, apparently to protect the rest of the community from a variety of dangers (Driver, 1961; Ellis and Abarbanel, 1961; Frazer, 1960; Hays, 1964; Mead, 1955, 1963; Sumner, 1960; and Wagley, 1964). Menstrual taboos in general share a variety of characteristics, regardless of the proximity of the cultures, and can therefore be considered universal. Although the details are different in each case, the common themes among these superstitions include:

1. Menstruating women are unclean.
2. Menstruating women are dangerous to men.
3. Menstruating women are dangerous to game and livestock.
4. Menstruating women are dangerous to plant life.

The manifestations of these beliefs are numerous, and are illustrated by the following passages. Driver (1961) reported that in Tepoztlan, an Aztec village in Mexico:

The genitals are considered ugly and dirty; adolescent girls believe that sexual intercourse is necessarily painful, and even married women refer to the sex act as 'the abuse by the man.' Sex is a taboo subject in the home and sexual play among children as well as masturbation is punished. Between seven and ten years of age the sexes are separated both for work and for play; at adolescence the separation becomes intensified and continues until marriage. Girls are not told about menstruation, which so shocks them that they rarely tell even their mothers after it happens (p. 550).

Driver (1961) stated, in addition, that among North American Indians,
there was a widespread belief that menstruating women were offensive to game animals. Therefore, a hunter would abandon his work during his wife's period, or at least insure that she did not touch any of his hunting gear.

Among the natives of the Amazon region (Wagley, 1964), men also consider women unclean during their menses, and refrain from sexual relations during that time to protect themselves from gonorrhea. Women are not permitted to wash themselves while menstruating, and they must avoid acid foods, such as citrus fruits. They are especially careful to avoid streams and rivers for fear of "the caruara, a spider-like arthropod living near the water's edge. The smell of menstrual blood irritates the caruara, several midwives explained, which shoots the woman with invisible arrows as she passes. She will have painfully swollen legs and arms as a result (pp. 243-244)." Midwives are also responsible for providing various herbal remedies and blessings to prevent the effects of the "caruara" and other symptoms of dysmenorrhea.

Pitt-Rivers (1961) reported on another Latin American culture in which women, during their periods, are believed to possess certain involuntary destructive powers. "If they pick flowers they wither; they can kill bushes and trees with their touch and can wound the back of an animal upon which they ride. Their presence suffices to put out the fire in a lime-kiln or a plaster-kiln (p. 197)."

Although these beliefs were common in the Americas, and still persist among some tribes (Wagley, 1964), they were not confined
to this part of the world. Mead (1955) has reported that in Bali, menstruation and pregnancy disqualify women from participation in religious ceremonies. They are not permitted in the temple, or even in the small courtyard temple in their own home. At these times, women must avoid priests, to protect them from contamination. In New Guinea, women are secluded during menstruation, leaving their husbands to fend for themselves. In the Admiralty Islands, menstruation is regarded as so shameful that women are careful to keep the fact hidden from all other members of the community.

Sir James George Frazer (1960) has provided a number of pertinent examples of the seriousness with which aborigine tribes regarded the menstrual cycle:

Thus, in the Encounter Bay tribe of South Australia there is, or used to be, a 'superstition which obliges a woman to separate herself from the camp at the time of her monthly illness, when if a young man or boy should approach, she calls out, and he immediately makes a circuit to avoid her. If she is neglectful upon this point, she exposes herself to scolding, and sometimes to severe beating by her husband or nearest relative, because the boys are told from their infancy, that if they see the blood they will early become grey-headed, and their strength will fail prematurely (p. 699).'

In some Australian tribes the isolation of menstruating women was even more severe, and the penalties for disobedience were more stringent than a mere scolding or beating. In the Wakelbura tribe, there is a regulation which "forbids the women coming into the encampment by the same path as the men. Any violation of this rule
would in a large camp be punished with death (p. 699).” Frazer (1960) continued, stating that:

The Bushmen of South Africa think that, by a glance of a girl's eye at the time when she ought to be kept in strict retirement, men become fixed in whatever positions they happen to occupy, with whatever they were holding in their hands, and are changed into trees that talk. Cattle-rearing tribes of South Africa hold that their cattle would die if the milk were drunk by a menstruous woman; and they fear the same disaster if a drop of her blood were to fall on the ground and the oxen were to pass over it (pp. 699-700).

Menstrual taboos among primitive cultures appear naturally to fit within the large body of superstition and ritual created by the tribal religions. These attitudes, however, have persisted within more "modern" religions and cultures, and are evident among both Western and Eastern contemporary peoples. Among Western man, the origins of menstrual superstitions appear to be derived from the oldest recorded encyclopedia, Pliny's *Natural History*. Ashley-Montagu (1940) quoted a section devoted primarily to the effects menstruating women have on their environment:

It would indeed be a difficult matter to find anything which is productive of more marvelous effects than the menstrual discharge. On the approach of a woman in this state milk will become sour, seeds which are touched by her become sterile, grafts wither away, garden plants are parched up, and the fruit will fall away from the tree beneath which she sits. Her very look, even, will dim the brightness of mirrors, blunt the edge of steel, and take away the polish from ivory. A swarm of bees, if looked upon by her, will die immediately; brass and iron will instantly become rusty, and
emit an offensive odour; while dogs which have tasted of the matter so discharged are seized with madness, and their bite is venomous and incurable (p. 211).

The superstitions linger, despite the accumulation of scientific evidence to the contrary. Orthodox Judaism has carried on many of the Talmudic traditions with reference to menstruation. "According to the Talmud, if a woman at the beginning of her period passes between two men, she thereby kills one of them (Frazer, 1960, p. 700)."

The taboos are no longer this severe, but do in many ways influence the lives of people living within the shtetl, or Jewish ghetto. Zborowski and Herzog (1952) provided extensive descriptions of the customs practiced within these small European communities after the Second World War:

If the bride - 'it shouldn't happen!' - is menstruating on her wedding night the ceremony is not postponed - 'heaven forbid!' - but she is a 'bride who is not kosher.' Great precautions are taken to make sure that no rule is broken. Until the ceremony of purification has been performed and the bride is 'kosher' a little girl sleeps in the bridal chamber, in the same bed with her, an infantile chaperone to protect the newly married pair against the impetuousness of youth.

From now on throughout her married life the bride must go to the mikva seven days after menstruation ends. The ritual is for purification, not for physical cleanliness. Before going there one bathes either at home or at the bathhouse. If the shtetl is not very large the same mikva is used by men and women on different days, the men's day being Friday. The men go weekly, the women once a month.

Regular visits to the mikva are one of the
three womanly mitsvos, without which 'a
cwoman cannot be a good Jew,' no matter how
many other acts of piety she performs.
During the time of menstruation she may not
hand any object directly to any man, for
this would defile him. Otherwise she is per-
mitted to go about her duties as usual,
except that she must not make or touch
pickles, wine or borshtsh. If she did they
would not keep.

The penalty of the man who touches her is
severe. He would become impure so that he
could not even pray before he had undergone
elaborate purification. It is taken for
granted that no man would wittingly commit
so blatant a sin. The rules are set up to
protect him from accidental pollution
(pp. 285-286).

These attitudes towards the menstrual function are no longer universal
within Judaism, but are still practiced by many women in the United
States and Europe.

In Scandinavia, the Lapps do not permit menstruating women
to walk near the shore where the fishermen generally set out their
fish (Frazer, 1960). In various parts of Europe, people still believe
that if a menstruous woman enters a brewery the beer will become sour;
if she touches beer, wine, vinegar, or milk, they will go bad; jam
she makes will not keep; if she mounts a mare, it will miscarry; if
she touches buds, they will wither, and if she climbs a cherry tree,
it will die (Frazer, 1960). These superstitions appear to be quite
similar to those originally mentioned in the Natural History of
Pliny, demonstrating how little influence has apparently been exerted
on taboo by increasing knowledge of bodily functions.
Hays (1964) confirmed the preceding reports, stating that:

The prohibitions which we have just been discussing occur in ancient or primitive cultures. Menstrual anxiety, however, is so deeply ingrained in the male psyche that it lingers in folk tradition. The peasants of eastern Europe believe that a woman must not bake bread, make pickles, churn butter or spin thread during her period or all will go wrong (pp. 41-42).

Hays added that menstrual blood is believed to provide a cure for leprosy and is sometimes used as a love charm by European peasants.

In Russian folklore, menstrual blood was said to cure warts and birthmarks.

The menstrual prohibitions followed by Hindu and Moslem women are quite similar to those observed by Orthodox Jews. Ellis and Abarbanel (1961) described the actual customs:

The menstruating Hindu woman becomes untouchable in the family circle, eating, sleeping, and generally living aloof from all others in the house, even from the husband, until purified by the ceremonial bath at the end of her period. The Moslem woman, when menstruating, also has certain restrictions binding her but not to the extreme degree of her Hindu sister. She must not offer her daily prayers, touch the holy Koran, observe fast in the month of Ramazan, or enter a mosque (p. 536).

Sexual relations during menstruation are, of course, prohibited as well.

The presence of these attitudes within the consciousness of modern and primitive man would appear to influence general reactions towards women, as well as the self-concept and role
identity of the female during her menstrual period. Hays (1964) stated that "all the basic predispositions to anxiety are involved. Women by their recurring supernatural wound are set apart from the male norm (pp. 42-43)." Women, therefore, being a symbol of anxiety for the man, undoubtedly develop attitudes towards themselves as a result of the effects they have on other individuals, and in some cases the community at large.

Ellis and Abarbanel (1961) also commented on the continuing influence of menstrual anxiety on contemporary man:

All of these primitive ideas represent basic human feelings that find overt expression among semienlightened people, but are more or less repressed into the unconscious among the more sophisticated. Thus, the primitive prohibition of coitus during menstruation is probably the most widely accepted of all restrictions upon human sexual behavior. Many sophisticated and sexually liberal individuals may rationalize their avoidance of coitus during the menstrual flow in terms of its 'unesthetic' or 'unhygienic' aspects, and indeed, this attitude may be related to the concept of menstrual blood as an excrement. However, the real attitude is more likely the unconscious fear of danger (p. 738).

Physiological and Psychological Concomitants of Dysmenorrhea

The reported incidence of dysmenorrhea has been quite varied. Golub, Lang, Menduke, and Gordon (1957) reported that 42.9 per cent of the young women studied in three schools suffered from the disorder, while Golub, et al. (1959) found an incidence of 71 per cent
among the young women participating in the project. Israel (1967) has provided a range of incidence from 3 to 47 per cent, while Pasnau (1969) stated that dysmenorrhea exists in from 32 to 84 per cent of cases, depending on the criteria being employed.

Frisk, Widholm, and Hortling (1965) reported the findings of other authors, stating that dysmenorrhea has been found to occur in 27.5 to 52 per cent of the cases considered. Van Die Redaksie (1966) found an incidence of 45 per cent in a random sample of the female population. Benson (1968) has added that 80 per cent of the cases of dysmenorrhea are of the variety termed "primary."

Although the physiological aspects of dysmenorrhea have not been dealt with extensively in this study, they are significant despite the degree of controversy existing over their contribution to the etiology of the disorder. Santamarina (1969) reported that among the possible physiological factors in the etiology of dysmenorrhea are hormonal imbalance, cervical obstruction, hypoplastic neurogenic uterus of Theobald, vasoconstriction of the spiral vessels, poor posture, and change in uterine sympathetic nerves and Frankenhauser's plexus. Santamarina, however, doubted the contribution made by posture, inasmuch as exercises have rarely been found to relieve the symptoms of the disorder.

Israel (1967), in considering the possible causes for the dysmenorrhea syndrome, concluded that etiology is still obscure. Mandell and Mandell (1967) were unable to discover a consistent hormonal relationship between psychological disturbances and menstruation.
Much has been written about the psychological aspects of the etiology of dysmenorrhea. Santamarina (1969) stated that:

Menstrual disorders are affected to a great extent by emotional and mental reactions but it is not clear why in some individuals dysmenorrhea occurs while in others with an identical history amenorrhea intervenes. One hears a great deal about a diminished pain tolerance and as a result, psychotherapy has appeared to many as the panacea for all gynecologic ills. Psychiatrists have shown that women with dysmenorrhea experience hate-laden fantasies and dreams in addition to exhibiting a tendency to pugnacity, violence and even self-destruction. Over indulgent maternal care, the exposure during adolescence to misrepresentation of the facts concerning menstruation, together with an unstable emotional environment indubitably play a role in the evolution of dysmenorrhea in the teen-age girl. These latter factors have led many gynecologists to claim that dysmenorrhea is an ailment of social maladjustment (p. 712).

Santamarina, however, added that these factors are probably contributory to the etiology of dysmenorrhea, but do not account for all aspects of the appearance of the disorder.

Johnson (1968) emphasized the effects of menstruation on the self-concept of women. He stated that while some women do learn to accept the facts and reality of menstruation, they rarely learn to like it. "Bleeding has always meant 'sickness' or injury and in this special case, something of a 'curse.' At a lower level of abstraction it is likely to mean a stained skirt or other intense embarrassment. Moreover, the menstruating woman is not likely to be the 'self' that she likes most (p. 68)." The onset and anticipation of the
menstrual period is therefore likely to become a source of some disturbance, if not the cause of actual anxiety.

Pasnau (1969) spoke of Deutsch's (1944) discovery that children very early develop an obscure awareness of their mothers' "monthly indisposition" in their fantasy lives. This "obscure awareness" often precedes the child's exposure to the actual facts of menstruation, and therefore makes it possible for large unrealistic fantasies to influence the child's attitude towards the menstrual function.

Deutsch (1944) reported that menstruation was often the one and only subject which women considered to be a major secret between their daughters and themselves. Women would frequently prefer to discuss conception, birth, and pregnancy with their children than menstruation. In this way, then, a woman's ambivalent feelings about menstruation are passed from generation to generation.

Pasnau (1969) added that some girls who received, during their childhood, large amounts of warm attention from their mothers experienced the day or two in bed during menstruation as the high point of the month. By considering the menstrual period to be an "illness" or a "curse," the child is therefore entitled to an unusual share of the mother's attention without the necessity for feeling any guilt. He also stated that other authors have reported that whatever the cause of the painful uterine contractions, the women affected by them were usually hypersensitive to pain and exhibited personality disorders. Therefore, the psychosomatic
influence plays a strong role in the etiology of dysmenorrhea.

Frisk, et al. (1965) stated that "in some cases the individual pain threshold may be lowered and the personal experience of physiological discomfort exaggerated (p. 40)." They suggested, along with Horney (1967), that general tension, often as a result of contact with adult sexual difficulties, might account for part of the etiology of dysmenorrhea.

Tindall (1971) accounted for the etiology of dysmenorrhea by writing that:

Some girls experience dysmenorrhea because they are brought up to regard periods as 'poorly times' during which discomfort is expected. This outlook can be fostered by overanxious parents - especially of an only child - by curtailment of normal activities during menstruation, and by a false sense of uncleanliness which may give rise to feelings of disgust and revolt or other psychological reactions. Circumstances which lead to nervous tension can make dysmenorrhea worse, even if they do not cause it, and these include unhappiness at home or work, fear of losing a job, and anxiety over examinations (p. 330).

Hopkins (1965) stated that it is a woman's attitude toward her societal role that is responsible for the development of dysmenorrhea, and also, perhaps, amenorrhea and menorrhagia psychogenica.

Shainess (1961) wrote that "dysmenorrhea, to some extent, is directly related to unpleasant, humiliating, and unloving experiences in relation to mother (p. 25)."

It was reported (Primary dysmenorrhea, 1969) that the additional autonomic symptoms of dysmenorrhea (nausea, vomiting, bowel
and urinary upsets) may be caused by a fear of functional incapacity as a result of the uterine colic itself.

Mead (1955), after studying menstrual and pregnancy symptoms among a variety of different cultures, wrote:

So we may say of morning-sickness that where it is culturally stylized as appropriate for any period of pregnancy (such as first pregnancy only), a large majority of women will show this behaviour; where it is not, only a very few will. Convulsive vomiting is a capacity of every human organism, which can be elaborated, neglected, or to a large degree disallowed.

The same sort of observation can be made on the subject of dysmenorrhea. The Samoans recognize some mild pain as a normal accompaniment of menstruation, and a large number of girls report its presence. The Arapesh do not recognize menstrual pain at all, possibly because the extreme discomfort of sitting on a thick piece of bark on the damp, cold ground in a leaky leaf-hut on the side of a mountain, rubbing one's body with stinging nettles, obscures any awareness. Careful studies of dysmenorrhea in America have failed to reveal any consistent factors among women who manifest pain except exposure during childhood to another female who reported menstrual pain. Although the possibility of end-organ change has not been ruled out, there seems reason to believe that here we may possibly be dealing with a phenomenon of attention, perhaps comparable to some of the phenomena of causalgia, in which reverberating circuits are set up so that a given individual suffers because she is aware of uterine contractions that occasion other women no pain. Culture expectation can be an important factor in bringing such an awareness about, just as practices like Yogi can accustom individuals to experiencing consciously bodily processes that are normally below the level of conscious attention (pp. 168-169).

There have been a variety of attempts to correlate the phenomenon of dysmenorrhea with a number of other personality variables,
with, it might be added, equivocal results. Benson (1968) viewed dysmenorrhea as the primary manifestation of neurosis in women. Frisk, et al. (1965) found that girls' development was obstructed because their recognition of the feminine sexual role was impeded by disturbed identification with their parents. In addition, they found that many dysmenorrheic girls were anxious and aggressive.

Coppen (1965), however, found no relationship between dysmenorrhea and neuroticism. This conclusion was drawn on the basis of testing, and did not, therefore, consider the more subjective aspects of the women's personalities. Hopkins (1965) reported that two groups of personality types are basically found to suffer from dysmenorrhea. The first is one in which the women experience an unconscious repudiation of their femininity, and the second type is characterized by an hysterical reaction to menstruation, usually accompanied by pain and neurotic symptoms.

Hirt, Kurtz, and Ross (1967), using the Semiobjective Criteria of Teen-Age Dysmenorrhea (Golub, et al., 1959), found a negligible relationship between dysmenorrhea, neuroticism, anxiety, and introversion-extraversion. There was, however, a positive relationship between the "pain" and "cramps" subscales and anxiety. The authors accounted for this by suggesting the possibility of lowered pain tolerance among these women. They stated, "considering anxiety as a more general behavioral disposition than neuroticism, these results might suggest that women with dysmenorrhea are not neurotic in the usual sense of the concept, but have considerable intolerance
for pain associated with their menses (p. 352)."

Beck (1971) studied the correlations between six premenstrual tension variables and traditional versus modern behaviors. Attitudes defined as traditional, such as going to bed, to the doctor, taking medications, and curtailing activities, related positively to tension, depression, and irritability during the premenstrual phase. Depression and irritability during menstruation were related more closely with modern attitudes (no activity decrease during menses).

Spero (1969) found, in studying the relationships between menstrual disorders and interpersonal conflict, that women suffering from functional menstrual conditions tended to be hypochondriacal. Although they often perceived themselves as responsible and nurturing, they were seen by others as distant. In addition, they appeared to be unusually angry, distrustful, dependent, and submissive.

Hain, Linton, Eber, and Chapman (1970) stated that there generally appear to be relationships between psychological maladjustment and premenstrual and menstrual symptoms. There was no effort, however, to extend the study to matters of causation. Moos, Kopell, Melges, Yalom, Lunde, Clayton, and Hamburg (1969) found that women who complain of premenstrual irritability tend to be irritable at other times as well.

In addition to the reported correlations between psychological variables and functional menstrual symptoms, there are a number of reports of disturbed behavior during menstruation. Pasnau (1969) stated:
It has been only recently that researchers in the field of human behavior have focused on the wide range of what is at this time, dangerously impaired behavior of menstruating women. This research...throws new light on what was once considered to be the irrational fear of primitive and ancient man. As Gorney speculates, 'Menstrual taboos, by limiting women's activities and contacts during menses, may constitute a worthwhile protection of the community, and so have positive survival value for the originating culture (p. 725).

Santamarina (1969) reported that women generally show a marked change in emotional stability during the few days preceding the menstrual period and the first two days of the flow. It was stated that 80 per cent of violent crimes committed by women have taken place during the week preceding menstruation. Santamarina stated, however, that "the severity and duration of the pain can be modified by various factors which can enter into the picture and are used by the patient to avoid responsibilities such as social obligations (p. 709)."

Tindall (1971) stated that "during menstruation and for a few days preceding it there is a tendency to emotional upset and a lowering of general efficiency varying in degree with the nervous make-up of the individual (p. 330)."

Dunham (1970) and Byram (1970), however, found that although there was a slight elevation in psychological disturbance among college students during menstruation, the incidence of these symptoms was not significant. They separately concluded that menstruation does not exert a very powerful effect on the average female college student.
Therefore, educational level may exert an influence on menstrual symptoms, possibly as a result of more complete knowledge of the actual facts of menstruation.

Dalton (1966, 1970) investigated the effects of mothers' menstruation on illness in children. She discovered (1966) that even the temporary phase of the mother's illness during menstruation can increase the reported incidence of children's illnesses. In the 1970 study, Dalton stated that over one-half of the children attending a clinic for very minor complaints came within eight days of the mother's paramenstrum, defined as the four days preceding and the four days following the onset of the menstrual flow. This could indicate either a psychosomatic reaction on the part of the child, or the mother's increased emotional lability and concern during the days preceding and following her menstrual onset.

Janowsky, Gorney, and Kelly (1966) also reported that, in many women, the premenstrual and menstrual periods are associated with an increase in psychiatric disturbance. Deutsch (1944) stated that in many countries menstruation is considered to be an extenuating circumstance to crime.

The treatments which have been applied to menstrual disorders generally, and dysmenorrhea specifically, are varied, and include both medical and psychological aspects. Santamarina (1969) listed the four basic modes of treatment as 1) simple reassurance, 2) analgesic therapy, 3) steroid therapy, and 4) surgery. He added that the most important task of the physician is to investigate care-
fully and establish rapport with the patient, since by the time a physician's visit is made, reassurance and analgesics have often been tried without success.

Israel (1967) spoke of the treatment of dysmenorrhea, discussing in detail the use of analgesics and the psychological aspects of therapy:

The belief that dysmenorrhea is entirely emotional in origin makes some physicians therapeutic nihilists in regard to its management. On the other hand, it is necessary to distinguish between the relief of an attack of dysmenorrhea and cure of the disorder. The patient may abort an incipient episode or alleviate pain already present by bed rest, the application of heat to the lower abdomen, and the use of any one of several easily available drugs. The latter include various combinations of household analgesics, such as phenacetin, acetylsalicylic acid, caffeine, and alcohol. In addition, the repeated use (every 2 to 3 hours) of a prescription, handyly filled in advance, which contains acetylsalicylic acid in combination with one of the synthetic antispasmodics (Pavatrine, Vasodilan, Trasentine, etc.) or a sympathicotomimetic such as amphetamine sulfate is efficacious. The number of such combinations is legion, attesting to their variable potency in relieving uterine colic; they are, nonetheless, of value in ameliorating an attack of dysmenorrhea.

The clinical evaluation of the many methods extolled for this purpose is made difficult because of the psychogenic overlay in primary dysmenorrhea. Rock, for instance, quite rightly stated, 'About fifty to sixty per cent relief can be expected from almost anything, including the laying on of hands.' In the experience of the author of this book, recognition of this facet of the therapy of primary dysmenorrhea is paramount. The inseparability of primary dysmenorrhea from psychologic factors makes it imperative to bring the patient to a painless period by some
preventive measure as soon as possible. Once she has experienced a wholly painfree menstruation, whatever the prophylactic agency, the patient with severe primary dysmenorrhea never again presents the same depth of problem. The recurring fear of an attack is largely dissipated for she realizes that cure is possible. Even if the dysmenorrhea recurs (which it mostly does), it is not so hopeless a malady to the once-relieved patient (pp. 141-142).

There is also some evidence that oral contraceptives may be efficacious in the treatment of menstrual distress (Moos, 1969), dysmenorrhea (Kremser and Mitchell, 1971), and the cyclic changes in negative affect (Paige, 1970). Kremser and Mitchell (1971) noted, in addition, some placebo effect, but stated that the side effects of birth control pills may interfere with their usefulness as a therapeutic agent in the treatment of dysmenorrhea.

A number of authors have advised psychiatric and psychological treatments for dysmenorrhea and general menstrual distress. Benson (1968) stated that "the only treatment which offers a hope of permanent cure is psychiatric." He added that:

All superfluous medications should be discontinued. Prolonged use of drugs confuses the issue and permits the patient to take refuge in the assumption that the physician would not prescribe the medication unless there were something organically wrong with her. The patient needs encouragement to face facts, accept implied challenges, and strive to overcome her problem (p. 695).

He also stated that "in women with satisfactory psychobiologic integration, the prognosis is good. Little can be done for women who use menstrual symptoms as a monthly refuge from responsibility (p. 696)." Horney (1967), who also viewed dysmenorrhea as a neurotic manifes-
tation, implied that psychoanalysis was the treatment of choice.

Pasnau (1969) wrote that although the treatment of the functional component of dysmenorrhea is basically similar to that of the premenstrual syndrome, "there is no doubt that pain and reactions to it are elaborated and/or intensified by emotional and personality factors. This consideration must be taken into account when prescribing therapy for each case of dysmenorrhea (pp. 736-737)."

Tindall (1971) concluded that the individual practitioner can help to enlighten families perpetuating myths about menstruation, and can therefore alleviate the aspect of the disorder allegedly caused by misinformation. Sympathy, understanding, and reassurance were said to accomplish these goals.

Mullen (1968) provided a unique report of the use of a specific psychotherapeutic treatment in a case of severe primary dysmenorrhea. The patient was a young married women who had experienced extremely severe menstrual symptoms from menarche. She had reported receiving a significant amount of parental attention during her period, and was generally bedridden at this time. Mullen discovered that the woman was quite anxious over the subjects of both menstruation and pregnancy, and attempted therapy with systematic desensitization focused on those themes. The treatment was conducted according to standard procedures outlined by Wolpe (1958). The patient's response to therapy was positive, and the therapeutic gains were still present at six-month follow-up. There was no evidence of symptom substitution.
Systematic Desensitization - Theory and Application

The theories and techniques employed in systematic desensitization therapy were developed primarily by Joseph Wolpe (1958). Systematic desensitization is one of the treatments considered by Wolpe under the heading of reciprocal inhibition therapies. In the development of reciprocal inhibition therapy, Wolpe was largely influenced by the work of Watson and Rayner in 1920, and Jones in 1924. Watson and Rayner provided information on the laboratory evocation of experimental neurosis, in which they conditioned an 11-month old boy, Albert, to a neurotic fear of rats, which then generalized to other furry animals.

A number of other means of experimentally producing neurotic behavior were considered, including the subjection of the individual, or laboratory animal, to difficult discriminations, and providing a large number of unreinforced presentations of a generalized stimulus (Wolpe, 1958).

The experiments of Jones in 1924, treating children's neurotic anxieties by offering an attractive food and simultaneously presenting increasing exposures to the feared object, were extremely influential in the elaboration and further development of the reciprocal inhibition hypothesis. From these data, Wolpe performed further research with experimentally produced neurosis in cats, and the extinction of these neurotic behaviors through feeding. Since eating when hungry is a pleasurable behavior for most organisms,
this represented a behavior incompatible with anxiety (Wolpe, 1958; Wolpe and Lazarus, 1966).

On these bases, the actual reciprocal inhibition principle was formed (Wolpe, 1958):

If a response antagonistic to anxiety can be made to occur in the presence of anxiety-evoking stimuli so that it is accompanied by a complete or partial suppression of the anxiety responses, the bond between these stimuli and the anxiety responses will be weakened (p. 71).

In response to the reciprocal inhibition principle, an alternative stimulus to anxiety had to be provided. Since feeding was considered to be an inappropriate antagonist for most normal adults, an actual set of techniques was developed by employing the relaxation methods outlined by Jacobson (1938). Wolpe also discovered that it was not always possible or practical to expose the individual in treatment to the actual feared object. Exposure to noxious stimuli was accomplished through imagination, which Wolpe discovered was effective (Wolpe, 1958; Wolpe and Lazarus, 1966).

There are essentially three aspects of the systematic desensitization technique (Wolpe, 1958; Wolpe and Lazarus, 1966). The first is deep muscle relaxation, to provide a competing response with anxiety. Wolpe used the work of Jacobson (1938), and generally employed six 20 minute relaxation sessions, as opposed to the 100 to 200 recommended by Jacobson. This method was chosen due to the proven relationship between muscular relaxation and various autonomic signs of emotional relaxation. The actual technique of
relaxation is accomplished by means of alternating tension and relaxation in various muscle groups. A variety of tranquilizers may be employed in cases where the subject is unable to relax by other means.

The second part of the systematic desensitization technique is the construction of anxiety hierarchies. The anxiety hierarchy was defined by Wolpe (1958) as "a graded list of stimuli that incorporates different degrees of a defined anxiety-provoking feature (p. 139)." Wolpe originally developed hierarchies by combining his knowledge of the patient's history and responses to the Willoughby Questionnaire. In 1964 he added a Fear Schedule Survey developed by Wolpe and Lang. Items found to produce anxiety were then placed in order from the least anxiety-provoking to the most anxiety-provoking. Wolpe reported that the items should be spaced so that adjacent scenes in the hierarchy have roughly the same anxiety differential between them. When working with a patient on anxiety reduction, Wolpe found that it was often necessary to use multiple hierarchies to represent different themes.

The final stage of systematic desensitization was the actual pairing of the relaxation with the anxiety-provoking imagery. This was accomplished by employing the following steps (Wolpe and Lazarus, 1966):

1. The patient must be relaxed, by the use of Jacobson's muscle relaxation techniques, tranquilizers, or a combination of the two. The patient's self-report of subjectively
felt relaxation is generally deemed sufficient.

2. Images from the anxiety hierarchy are presented, and the patient is instructed to imagine them as vividly as possible for 5 to 15 seconds. Each hierarchy item is generally presented 3 or 4 times, although 10 or more presentations are sometimes necessary.

3. After each presentation of a hierarchy item, the patient is instructed to relax again, and the same item is repeated, or the following item is presented.

4. The patient is instructed to signal with his finger if he finds himself experiencing anxiety during the presentation of an item from the hierarchy. If he signals anxiety, he is instructed to relax, discontinue the image, and re-establish the image once he feels the relaxation again.

5. The interval between the presentation of scenes can vary from 10 to 20 seconds, although more than one minute can elapse without endangering the success of the treatment.

6. Sessions generally last from 15 to 30 minutes, although sessions of 90 minutes have been successfully employed.

7. The sessions themselves can be spaced from daily to once a month. The average spacing is 2 to 3 sessions per week.

8. The total number of sessions can vary from six to over 100. The average is 31 (pp. 72-73).

Systematic desensitization has been applied mainly to phobic reactions (Wolpe, 1958). Among these have been interpersonal anxiety, claustrophobia, general phobias, hypochondriacal obsessions, death phobias, fear of marriage, feelings of inferiority, sexual anxiety, agoraphobia, and extreme jealousy leading to paranoid behavior.

Wolpe and Lazarus (1966) reported having applied desen-
sitization to a number of similar problems, including fear of storms, quarrels, examinations, disapproval, bright lights, criticism, blood, and rejection.

Paul (1969) stated that:

While controlled studies have established the effectiveness of desensitization with 'classic phobias,' more generalized social-evaluative anxiety, and some psychophysiological disorders, suggestive positive results have been reported across the full range of distressing behaviors in which direct treatment of anxiety could be considered of fundamental clinical significance (p. 146).

In terms of the results of systematic desensitization, Wolpe (1958) claimed that approximately 90 per cent of the patients treated with this technique were cured or much improved. Wolpe and Lazarus (1966) reported a cure or large improvement percentage of 91. Rachman (1967), however, stated that the clinical effectiveness of systematic desensitization was 75 per cent.

Other authors have reported findings relative to the effectiveness of systematic desensitization, although they have not necessarily supported the 90 per cent claims made by Wolpe (1958) and Wolpe and Lazarus (1966). Gelder, Marks, and Wolff (1967) found that systematic desensitization was a more effective treatment for phobic patients than either group or individual insight therapy. Hain, Butcher, and Stevenson (1966) reported that patients treated with systematic desensitization showed a 70 per cent general improvement rate, while a slight degree of relief was experienced by 19 per cent. Paul (1969) quoted other studies showing that 60 per cent of the
patients treated with desensitization were considered cured, while 32 per cent were moderately improved. Positive results were also obtained by DiLoreto (1970) and Leon (1968) in the treatment of snake phobias and interpersonal anxieties with group desensitization.

Crighton and Jehu (1969), however, found no difference in the effects of systematic desensitization and group psychotherapy on test anxiety. Meichenbaum, Gilmore, and Fedoravicius (1971) discovered no difference in speech anxiety between those subjects receiving systematic desensitization and those exposed to insight treatment emphasizing self-instructional training.

There has been much investigation of the actual mechanisms of change in systematic desensitization treatment. Many experimenters have questioned whether the success attributed to desensitization was actually a result of the treatment itself or was caused by the presence of the therapist, suggestion, relaxation, etc. A number of studies addressed to these specific questions have proven repeatedly that the actual technique was responsible for the changes seen in therapy.

Change after systematic desensitization therapy has been proven not to be caused by the suggestion implicit in being "in therapy." In other words, systematic desensitization did not achieve its results by placebo effect (Gelder, 1968; Lang, Lazovik, and Reynolds, 1965; and Rachman, 1967).

In addition, muscular relaxation by itself was not the vehicle of change in desensitization, since relaxation without the
paired aversive imagery has been found to be ineffective (Gelder, 1968; Lang, et al., 1965; Leon, 1968; and Rachman, 1967).

In studies testing the effects of hierarchy building on anxiety, there was no response to hierarchy building unless the completed hierarchies were then used in formal systematic desensitization (Lang, et al., 1965; and Leon, 1968).

Finally, the therapist-patient relationship was not in itself curative in systematic desensitization, and was therefore not considered to be a crucial aspect of the treatment (Jameson and Vernon, 1970; Krapfl and Nawas, 1969; Lang, et al., 1965; and Rachman, 1967).

Some authors, however, have ascribed therapeutic significance to the relationship established by therapist and patient in systematic desensitization. Wilkins (1971) wrote that:

It appears that the cognitive and social aspects of the therapeutic situation, which are common both to desensitization as well as to more traditional forms of psychotherapy are critical variables for successful therapeutic outcome. These variables include expectancy of therapeutic gain, the social reinforcing qualities of the therapist, information feedback of approximations toward successful fear reduction, training in the control of attention, and the vicarious learning (via instructed imagination) of contingencies of non avoidance behavior in the fear situation (p. 314).

Nawas and Pucel (1971) found no relationship between similarity of sex of subject and experimenter and outcome of desensitization, but did believe that the relationship factor had to be considered impor-
tant since the pseudotherapy group showed some improvement after being exposed to relaxation and neutral imagery. Although these factors may be contributory to the success of systematic desensitization, the preceding studies have demonstrated that they are probably not essential for positive outcome.

Modifications of Systematic Desensitization

One of the most significant modifications of Wolpe's (1958) systematic desensitization therapy has been the application of the technique in group settings. Since systematic desensitization has been consistently proven to be an efficient and successful mode of treatment, the need for more economical ways in which to use the procedure have been recognized (Mann and Rosenthal, 1969). The need for group methods has been advised largely because of the traditionally inadequate staffing to meet the psychological needs of the population.

Lazarus (1961) was the first to apply systematic desensitization in groups. In the treatment of specific phobias, 18 patients were treated with group desensitization of whom 13 initially recovered and 3 relapsed. Of the 9 patients treated with "group interpretation," there were no recoveries.

Paul and Shannon (1966) discovered, in the study of group desensitization, that:

The results of the present study demonstrate that the method of systematic desensitization
previously found effective in individual treatment (Paul, 1964, 1965) can be efficiently combined with group discussion and administered in groups without loss of effectiveness in the treatment of interpersonal anxiety (pp. 132-133).

The authors noted a potentially important aspect of the group desensitization treatment:

Additionally, both therapists noted that the subjects in the group seemed to perceive the desensitization method as an active mastery technique which they could acquire and use themselves, more than in the individual application. Clients' descriptions of utilizing desensitization training to master anticipated areas of stress themselves suggest the development of a confidence-building 'how to cope' orientation (pp. 133-134).

Several authors have tested the effects of group as opposed to individual systematic desensitization, and have found that the technique is equally effective when applied in groups (Ihli and Garlington, 1969; and Wolpe, 1969). A number of other researchers have provided instances of the general effectiveness of group systematic desensitization, when compared to a variety of different types of controls (Cohen, 1969; DiLoreto, 1970; Fishman and Nawas, 1971; Leon, 1968; McManus, 1971; Suinn, 1968; and Taylor, 1971).

Despite the generally favorable claims concerning the use of systematic desensitization as a group therapy technique or treatment, there are a number of difficulties associated with this specific modification. According to Wolpe's (1958) original outline of the technique of systematic desensitization, each individual must have an anxiety hierarchy created especially for his own needs. The use of
a variety of individual hierarchies within a group setting would, however, provide the therapist with an obviously cumbersome task. Wolpe (1958) clearly stated that anxiety must be deconditioned on each individual hierarchy item before proceeding to the next item. Since an individual may signal anxiety and therefore repeat a hierarchy item more than 10 times, the number of presentations of scenes could become enormous in a group setting.

A variety of different solutions for these problems have been developed through research on the specific application of group desensitization. Nawas, Fishman, and Pucel (1970) stated that experimenters generally define the length of treatment in group desensitization either by the number of sessions or the number of hierarchy items to be completed by all subjects. Since no two subjects move through an anxiety hierarchy at exactly the same pace, all individuals participating in group desensitization will receive differential amounts of exposure to the treatment. The authors stated:

A number of recent developments suggested the feasibility of solving this problem by standardizing the treatment. Among these developments are the automated 'desensitization' pioneered by Melamed and Lang (1967); the finding of Krapfl and Nawas (in press) that taped relaxation training and desensitization is as effective in reducing snake phobia as live treatment; and the experimental results of Miller and Nawas (1970) which cast serious doubt on the validity of Wolpe's assumption that desensitization to one hierarchy item should be completed before the therapist proceeds to the next item, lest sensitization might take place (p. 49).
The research indicated that standardized systematic desensitization was as effective as regular desensitization therapy. The only differences between the standardized and the regular group were that no instructions for signaling of anxiety were given to the standardized group and no signaling took place; and each subject listened to the same 78 pairs of aversive imagery and relaxation suggestions in the course of five sessions. The treatment received by the subjects was, therefore, identical in every respect over which the experimenters had control. To combat the problem of determining the amount of anxiety evoked by hierarchy items, the number of presentations of items progressively increased as subjects moved up the list.

Donner and Guerny (1969) reported that "the combination of administering the desensitization techniques via a tape recorder, using a common pre-determined hierarchy and presentation rate, seems to be viable (p. 12)." Fishman and Nawas (1971) concurred, stating that research has shown that one session of relaxation training is sufficient, and taped desensitization was as effective as "live" desensitization and free of possibly biasing features.

Another major issue in the use of desensitization in groups, that of individual versus standard hierarchy construction, has been studied in great detail by a variety of researchers. Ihli and Garlington (1969) reported "that using a standardized order of the composite hierarchy was as effective as allowing each individual to order the hierarchy used (p. 208)." Emery and Krumholz (1967) also found that there was no difference in the effects of group systematic
desensitization according to the use of individualized versus standardized hierarchies. In separate experiments, McGlynn (1971) and McGlynn, Wilson, and Linden (1970) found no differential effects in desensitization treatment on the basis of the use of individualized versus standardized hierarchies.

The discovery of the effectiveness of automated desensitization has exerted tremendous impact on the entire subject of psychotherapy by systematic desensitization. Krapfl and Nawas (1969) found no difference between live and semi-automated desensitization using tape recordings. Migler (1968) employed automated desensitization routinely in a self-desensitization program. Phillips and Johnson (1972) found that a totally self-administered desensitization program was an effective method of reducing fear, although it might have been slightly less powerful than a therapist-assisted program. Carlington and Cotler (1968), using tape recorded relaxation instructions and standardized hierarchies, found the procedure effective in reducing test anxiety. Cotler (1970) stated that automated systematic desensitization was found to be an effective means of reducing snake phobia.

A number of additional findings on possible modifications of systematic desensitization suggest further questions about the validity of Wolpe's (1958) assumptions concerning the specific methods of treatment. In studying the effects of general anxiety level on the outcome of systematic desensitization, Mitchell and Ingham (1970) found no differences in accessibility to treatment, although this
contradicted Wolpe's original assumption that high general anxiety would impede therapy.

Depth of relaxation is not crucial, and short-term relaxation is sufficient for therapeutic results (Fishman and Nawas, 1971; Nawas, Fishman, and Pucel, 1970; and Rachman, 1968). In addition, the entire amount of time necessary for successful therapy is shorter than Wolpe (1958) reported. Suinn (1970) and Suinn and Hall (1970) found that desensitization could be successfully accomplished within a 24 hour period, both by relatively traditional procedures and in a marathon setting. Lanyon, Manosevitz, and Imber (1968) found that systematic desensitization was equally effective in reducing spider fear, whether it was administered on a spaced (2 to 3 times per week) or massed (several times per day) basis, although a greater reduction in general anxiety was found to accompany only the spaced desensitization group treatment.

Ross (1971) reported that 30 second exposures to hierarchy items were more effective than three 10 second exposures, casting doubt on Wolpe's (1958) original assertions about the length of presentation of hierarchy items.

Summary

While there is a significant amount of literature concerning the universality of dysmenorrhea, and many speculations regarding the etiology of the disorder, there have been few references dealing with
possible methods of treatment. One study (Mullen, 1968) has reported a psychotherapeutic attack on dysmenorrhea, while the remaining publications have been devoted primarily to attempts to identify the personality factors involved in the syndrome.

A great deal of material has been written describing menstrual customs and taboos throughout a variety of primitive and modern cultures, and has helped to shed some light on the distortions with which many people regard this natural and unavoidable physiological function. Menstruation and the menstruating woman are almost universally regarded with fear; openly in primitive societies, more subtly in sophisticated contemporary cultures.

The physiological and psychological theories and research regarding the etiology of primary dysmenorrhea have been equivocal at best, and have failed to provide investigators in this area with a sound body of knowledge on which to base further research.

The one reported case study illustrating a psychotherapeutic approach to dysmenorrhea has shown some promise of an effective method of treatment for the disorder. Systematic desensitization has been widely used over the past several years in treating anxiety states, although little research has been conducted on the effectiveness of desensitization in treating psychophysiological disorders.

Systematic desensitization as originally described by Wolpe (1958) consisted of a well-defined set of procedures to be applied to a specific type of psychological problem. The sequence and nature of application of the treatment were thought to be inviolable, and the
scope of treatment remained narrow for many years after the development of the therapy. Recent research, however, has strongly indicated that the effectiveness of the treatment is not hindered by modifications of many types. The nature of systematic desensitization has, therefore, been altered to fit a wider variety of disorders, and the application of the treatment has been consequently broadened.
CHAPTER III
METHODOLOGY

Population

Three distinct, though similar, population sources were used to obtain subjects for this study. The three institutions comprising the population of this study were the University of New Mexico Student Health Center, the Presbyterian Hospital School of Practical Nursing, and the Bernalillo County Planned Parenthood Association, all located in Albuquerque, New Mexico.

The University of New Mexico, with an enrollment of approximately 19,000 students, provides medical services for all full-time students at the Student Health Center. The female students entitled to these services at the Health Center constituted the population from this area.

The Presbyterian Hospital School of Practical Nursing is a publicly-supported program with 61 full-time students, three of whom are male. The remaining 58 students were included in the population of this study.

The Bernalillo County Planned Parenthood Association is composed of several publicly-supported clinics, offering contraception, family planning, abortion, and educational services to the residents of Bernalillo County, in which Albuquerque is situated. This
represented the final portion of the population.

Three separate population sources were chosen for this study for a variety of reasons. The literature indicated that many women do not bring their problems with dysmenorrhea to the attention of a physician once it becomes obvious to them that there is no clear-cut cure. For this reason, many women resort to non-prescription medications and a variety of other treatments in order to avoid seeking further medical attention. Secondly, many women contacted by the experimenter and the three listed agencies during the course of this study evidenced extreme embarrassment, and consequent reluctance to participate in the study. Three sources were used, therefore, to provide a wider cross-section of females who might have problems with dysmenorrhea.

Sample

The samples for the experimental group and the control group were chosen separately. The experimental group was drawn from the University of New Mexico Student Health Center and the Presbyterian Hospital School of Practical Nursing.

The medical staff at the Student Health Center was briefed by the experimenter, and was given written information (Appendix A) explaining the nature of the research, and the type of subject needed. Women who were seen at the Health Center with primary dysmenorrhea as one of their complaints were given a sheet explaining
the nature of the study (Appendix B), and were referred to the experimenter for a brief interview. At this time their questions were answered, and they were given the option of participating in the study. The sample drawn from the Student Health Center was therefore composed entirely of volunteers.

In a similar fashion, the nature of the research was explained to the Chairman of Health Occupations and faculty of the Presbyterian Hospital School of Practical Nursing. Students in the school who admitted to suffering from dysmenorrhea were then invited to participate in the study. Those who indicated an interest were contacted and interviewed by the experimenter, and were given the option of participating further in the research. A total of twelve experimental subjects were collected in this manner; six from the Student Health Center, and six from the Presbyterian Hospital School of Practical Nursing. The mean age of the experimental subjects was 23.08, 54.5 per cent were married, and 27.2 per cent had children.

The control group for this study was drawn entirely from the Bernalillo County Planned Parenthood Association. The Planned Parenthood Association provides a number of weekly clinics, serving many young women who are still living with their parents. The women contacted through the Planned Parenthood Association were not included in the experimental group, since none of them were willing to participate in the treatment procedures, and refused to give reasons for their reluctance. The experimenter and the Planned Parenthood Association Education Director finally determined that many of these
women were present at the clinics without their families' knowledge, and were concerned about risking discovery through additional participation in the study. Many of these women, however, were willing to fill out the forms required of control subjects, and therefore volunteered for this aspect of the research. They were informed that the training procedure would be available to them at a later date upon their request. A total of twelve women volunteered as subjects for this group. The mean age of the control subjects was 22.17, 36.4 per cent were married, and 9.1 per cent had children.

The control and experimental groups were different in their willingness to submit to treatment, but the data indicated that they were otherwise quite similar. The degree of dysmenorrhea expressed by the subjects was largely equivalent, as was the level of anxiety. Personal data, including such factors as age, marital status, and menstrual history, were equivalent for both groups. The non-equivalency of the control and experimental groups was therefore accounted for by very pressing aspects of personal environment.

Instruments

The instrument chosen to measure dysmenorrhea was the Semiobjective Criteria of Teen-Age Dysmenorrhea (Golub, et al., 1959). The instrument (Appendix C) consists of a simple, undisguised self-rating scale, in which the subject is asked to evaluate the degree of a specific symptom. The scale provides a list of ten symptom
areas, and the subjects are given a choice of four levels of severity. The entire scale yields a single numerical score which is assigned a diagnostic category according to the following schedule:

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 9</td>
<td>No dysmenorrhea</td>
</tr>
<tr>
<td>10 - 19</td>
<td>Mild dysmenorrhea</td>
</tr>
<tr>
<td>20 - 29</td>
<td>Moderate dysmenorrhea</td>
</tr>
<tr>
<td>30+</td>
<td>Severe dysmenorrhea</td>
</tr>
</tbody>
</table>

These categories were assigned on the basis of the clinical observations made by the authors of the scale (Golub, et al., 1959).

Due to the nature of the area being measured, and the design of the scale itself, this instrument is considered truly "semiobjective," rather than purely subjective or objective. Reliability and validity coefficients are therefore completely unavailable, and probably unobtainable. This need not be considered a weakness in measurement, however, since it is recognized that the experience of pain is a highly subjective matter involving an element of perception as well as an identifiable physiological event (Goldenson, 1970; and Szasz, 1957). Dalessio (1970) stated:

...there are at least two attributes of pain that tend to differentiate it from the other subjective experiences associated with ordinary sensation and perception, such as touch, vision, hearing and the like. The first attribute is related to the significant emotional experience which usually occurs with pain or threats of pain...The second attribute is closely related to the first, this being the proposition that pain is a subjective sensation peculiar to the individual which, at least in humans, requires an introspective report from the subject experiencing pain. This latter property of pain makes its precise measurement uncertain (p. 624).

The instrument, therefore, requires a subjective judgment from
the woman involved, and demands that she make an evaluation concerning the severity of her symptoms, rather than merely reporting an observation. Jahoda and Barnitz (1955) stated that some information cannot be gathered by any type of observation, and must be determined by asking the subject. Cronbach (1960) concurred, stating that the subject is indeed an authority on his own behavior and feelings.

There are other important reasons to consider seriously the use of subjective data in psychological research. Wolman (1965) wrote that "the subjective reports based on introspection are highly correlated with objective data obtained independently with the same subjects (p. 13)." In the same article, Wolman added:

A refusal to include 'private' events in psychological research (Skinner, 1950) does not necessarily imply good empiricism. An empiricist studies all factual data, irrespective of their nature and of the way in which he must assess them. If there is such a thing as private events, science must study them (p. 13).

Holt (1965) wrote, with reference to the use of subjective data:

What is needed to work with them is essentially a faith that they are real and worthy objects of study; the rest comes relatively easily. This is not to say that the experimenter sits back and introspects to get his prime data, in the style of the old structural psychology of consciousness. We still must be operational in our approach. In large part, this reduces simply to getting verbal, introspective reports from our Ss and applying to them the same kinds of judgmental analyses that we use on other qualitative data (p. 50).

The control subjects in this study have also, in part, aided
in a rough approximation of the reliability of the instrument, by defining the normal range of variation in symptoms between two successive menstrual periods.

The *Taylor Manifest Anxiety Scale* (Taylor, 1953) provided a discrete measure of chronic anxiety. The scale was constructed from the *Minnesota Multiphasic Personality Inventory* by submitting items to a panel of judges and having them select those that were clinically representative of chronic anxiety states. Since the instrument has remained unpublished, extensive information regarding validity and reliability are unavailable. Test-retest reliability was reported by Taylor (1953) to be .89. Lucas (1952) found a .82 test-retest reliability with the same instrument. In her own normative work, Taylor (1953) computed a mean of 14.56, and stated that the 80th percentile fell at 21, the 50th percentile at approximately 13, and the 20th percentile at 7. The scale appeared to discriminate between highly anxious and non-anxious subjects according to the observations of the experimenter. The fifty items scored for anxiety are shown in Appendix F, with the responses considered anxious designated.

An experimenter-designed questionnaire (identified in this study as Questionnaire #2) was composed of items eliciting general information about the subjects and their families (Appendix D). This form was constructed in an attempt to understand some of the background data, such as age at menarche, regularity of menstruation, and menstrual patterns of relatives, that might help explain the etiology
of the disorder. The non-statistical results of this questionnaire have been discussed in Appendix G.

Questionnaire #3 (Appendix E) was designed specifically to elicit items that would be appropriate for a desensitization hierarchy focused on menstruation. This alternative was chosen over personal interview due to the reluctance of the subjects to discuss the topic of menstruation. The subjects were therefore asked to list the kinds of problem areas they experienced with menstruation, and the actual hierarchy list was assembled on the basis of both the order and frequency of the specific complaints.

Procedure

The control subjects were contacted and informed of the research by the Bernalillo County Planned Parenthood Association Education Director and staff. The research was briefly explained to those women who had complained of dysmenorrhea and volunteers were asked to fill out the questionnaires. Since the control subjects were only willing to complete the questionnaires, they were informed that the treatment would be available to them at a later time, should they desire and request to participate.

Since the control subjects were extremely concerned about the confidentiality of the study, they were instructed to use their initials, rather than their full names, on the various questionnaires. They were given one copy of all four questionnaires to be completed
and returned at the Planned Parenthood Clinic, and were given one additional copy of Questionnaire #1 (*Semiobjective Criteria of Teen-Age Dysmenorrhea*), along with a self-addressed, stamped envelope, to be filled out and returned after their next menstrual period.

The experimental subjects who had volunteered through the University of New Mexico Student Health Center and the Presbyterian Hospital School of Practical Nursing were contacted by the experimenter in small groups to provide some personal involvement with the subjects. All questions were answered during this group session, and the subjects were given the four questionnaires to fill out and return immediately. An initial session of relaxation exercises (Appendix H) completed the first meeting.

After the questionnaires were completed, the hierarchy (Appendix I) was constructed on the basis of the information contained in Questionnaire #3. The relaxation instructions and hierarchy were then recorded on a series of cassette tapes to insure standardization, and to reduce the possibility of experimenter presence biasing the research. The subjects were then broken into two smaller groups for administrative purposes. The group consisting of nursing students met at Presbyterian Hospital, while the University of New Mexico students met at the University Student Health Center. The content and structure of the meetings were the same for both groups. Four one-hour sessions were used rather than a larger number of shorter sessions to facilitate attendance in accordance with the subjects' schedules.
The first session consisted of administrative matters, questions and answers concerning the research, and the first relaxation session. The second meeting consisted of relaxation plus hierarchy items one through four. The third session was composed of relaxation plus hierarchy items five through ten, and the fourth and final meeting consisted of further relaxation plus the last four hierarchy items, eleven through fourteen.

Since the entire treatment procedure was automated, and there was not signaling for anxiety (as used in traditional desensitization methods), the hierarchy items were presented on an increasing schedule to insure that all subjects received adequate exposure to the scenes. The hierarchy items were presented on the following schedule:

<table>
<thead>
<tr>
<th>Items</th>
<th>Presentations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 3</td>
<td>4</td>
</tr>
<tr>
<td>4 - 6</td>
<td>6</td>
</tr>
<tr>
<td>7 - 9</td>
<td>7</td>
</tr>
<tr>
<td>10 - 12</td>
<td>8</td>
</tr>
<tr>
<td>13 - 14</td>
<td>9</td>
</tr>
</tbody>
</table>

The tape recorder was set up by the experimenter, who left the room while the tape was playing. The experimenter then returned at the completion of the session, and reminded the subjects of the next meeting.

After the final tape was completed, the subjects were given an additional copy of Questionnaire #1, with instructions to complete and return it after their next menstrual period.

Sources of Data

A dysmenorrhea score was reported for each subject, both
before \((D_s_1)\) and after \((D_s_2)\) the experimental period. The potential score range was between zero and sixty-six, and was interpreted according to the chart developed by Golub, et al. (1959).

An anxiety score was reported for each subject on the Taylor Manifest Anxiety Scale. The score could range between zero and fifty, since there were fifty items scored for anxiety.

**Analysis of Data**

Means and standard deviations were computed on dysmenorrhea \((D_s_1 \text{ and } D_s_2)\) scores and anxiety scores for both groups. The median was determined on the anxiety score to provide a cut-off point for the high-anxiety and low-anxiety categories. The dysmenorrhea and anxiety scores were analyzed in part by performing a Pearson product-moment correlation on both continuous variables. The correlation was computed on \(D_s_1\) and anxiety, \(D_s_2\) and anxiety, and dysmenorrhea change and anxiety, to determine whether there was any change in the relationship between these variables.

The amount of change between \(D_s_1\) and \(D_s_2\) was computed for both groups. Improvement was recorded as a positive change score, and deterioration was recorded as a negative change score. The high-anxiety and low-anxiety categories were defined by computing the median score on the anxiety scale. All scores above the median were considered high-anxiety, while scores falling below the median were considered low-anxiety.
In order to determine the amount of change in dysmenorrhea scores between groups, a 2 x 2 multiple classification analysis of variance was computed on dysmenorrhea change scores with respect to anxiety. The .05 level of significance was used in testing the null hypotheses.

The statistics were computed by the experimenter, using a Monroe Model 650 Electronic Display Calculator on loan from the University of New Mexico College of Education. All computations were performed three times to insure accuracy.

**Summary**

For this study on the effects of group systematic desensitization on the symptoms of primary dysmenorrhea, subjects were chosen from the University of New Mexico Student Health Center, the Presbyterian Hospital School of Practical Nursing, and the Bernalillo County Planned Parenthood Association. The experimental subjects were volunteers from the University of New Mexico, and the Presbyterian Hospital School of Practical Nursing, while the control subjects were volunteers contacted through the Bernalillo County Planned Parenthood Association.

All subjects were given a series of four questionnaires measuring dysmenorrhea, anxiety, and personal data. Hierarchy items for the desensitization hierarchy were elicited through one of the questionnaires. The experimental group received four one-hour
sessions of systematic desensitization in small groups, consisting of relaxation exercises and exposure to hierarchy items focused on menstruation. The control group was informed that the treatment would be made available at a later time upon their request. All subjects completed an additional copy of Questionnaire #1 measuring dysmenorrhea, and returned it following their next menstrual period.

Dysmenorrhea and anxiety scores were received for all subjects, and were described in terms of means and standard deviations. The data was further analyzed with Pearson product-moment correlations, and a $2 \times 2$ multiple classification analysis of variance.
CHAPTER IV
RESULTS AND DISCUSSION

This chapter presents the results of this study, with analysis and interpretation of the data. Additional data are presented, with a discussion of their relationship to the primary results and hypotheses.

A 2 x 2 multiple classification analysis of variance, utilizing change scores, was computed to test the effects of group systematic desensitization on primary dysmenorrhea in relation to anxiety. Pearson product-moment correlations were computed to determine the relationship between degree of dysmenorrhea, as measured by the *Semiobjective Criteria of Teen-Age Dysmenorrhea* (Golub, et al., 1959), and level of anxiety, as measured by the *Taylor Manifest Anxiety Scale* (Taylor, 1953).

Hypothesis 1

Hypothesis 1 stated: There will be no significant difference in amount of change in degree of primary dysmenorrhea, as measured by the *Semiobjective Criteria of Teen-Age Dysmenorrhea*, between an experimental group exposed to four sessions of group systematic desensitization, and a control group not exposed to group systematic desensitization.

Table 1 presents the descriptive statistics for the experi-
mental and control groups, which indicate a marked decrease in
dysmenorrhea scores for those subjects exposed to treatment, while
the control subjects show a much smaller degree of change. The
large deviations from the mean in the dysmenorrhea scores are
consistent with the highly individual and variable nature of the
menstrual cycle. The standard deviation of the dysmenorrhea change
score for the control group was less than half that of the experi-
mental group, which indicates that the amount of change in primary
dysmenorrhea remained relatively stable in untreated subjects, while
treated subjects showed varying degrees of response to the systematic
desensitization.

| TABLE 1 |
| MEANS, STANDARD DEVIATIONS, AND CHANGE SCORES FOR THE EXPERIMENTAL AND
CONTROL GROUPS ON THE DYSMENORRHEA (PRE-TEST AND POST-TEST)
AND ANXIETY MEASURES |

<table>
<thead>
<tr>
<th>Group</th>
<th>Ds₁ M</th>
<th>Ds₁ SD</th>
<th>Ds₂ M</th>
<th>Ds₂ SD</th>
<th>Change M</th>
<th>Change SD</th>
<th>Anxiety M</th>
<th>Anxiety SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>38.92</td>
<td>13.59</td>
<td>22.50</td>
<td>17.94</td>
<td>16.42</td>
<td>14.91</td>
<td>17.50</td>
<td>8.87</td>
</tr>
<tr>
<td>Control</td>
<td>29.00</td>
<td>18.12</td>
<td>23.33</td>
<td>17.85</td>
<td>5.67</td>
<td>6.91</td>
<td>21.17</td>
<td>10.76</td>
</tr>
</tbody>
</table>

Before the analysis of variance was computed, a test of con-
fidence intervals was performed, to insure that the groups were
statistically comparable. The F of 5.47 (Table 2) was significant at
the .05 level, and Hypothesis 1 was therefore rejected. There was a significant difference in amount of change in primary dysmenorrhea, as measured by the *Semiobjective Criteria of Teen-Age Dysmenorrhea*, between the experimental and control groups.

**TABLE 2**

MULTIPLE CLASSIFICATION ANALYSIS OF VARIANCE FOR EXPERIMENTAL AND CONTROL GROUPS - DYSMENORRHEA CHANGE SCORES

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>1</td>
<td>693.37</td>
<td>693.37</td>
<td>5.47*</td>
</tr>
<tr>
<td>Anxiety</td>
<td>1</td>
<td>287.04</td>
<td>287.04</td>
<td>2.27</td>
</tr>
<tr>
<td>Interaction</td>
<td>1</td>
<td>759.39</td>
<td>759.39</td>
<td>5.99*</td>
</tr>
<tr>
<td>Within</td>
<td>20</td>
<td>2533.16</td>
<td>126.66</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>23</td>
<td>4272.96</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at the .05 level.

**Hypothesis 2**

Hypothesis 2 stated: There will be no significant difference in amount of change in degree of primary dysmenorrhea, as measured by the *Semiobjective Criteria of Teen-Age Dysmenorrhea*, between a high-anxiety group and a low-anxiety group, as measured by the *Taylor Manifest Anxiety Scale*. The descriptive statistics (means, standard deviations, and change scores) for the high and low-anxiety subjects...
in the experimental group are presented in Table 3, for the high and low-anxiety subjects in the control group in Table 4, and for the high and low-anxiety subjects across the experimental and control groups in Table 5. The data indicate the largest reduction in dysmenorrhea within the low-anxiety portion of the experimental group, while the other three subject classifications, high-anxiety experimental, and high and low-anxiety control, show relatively little change. For the high and low-anxiety subjects exclusive of group, the data indicate that the change in dysmenorrhea for the low-anxiety subjects was nearly twice as large as that of the high-anxiety subjects. The large deviation for the low-anxiety subjects indicates the varying responses of subjects to the treatment.

TABLE 3

MEANS, STANDARD DEVIATIONS, AND CHANGE SCORES FOR THE HIGH AND LOW ANXIETY SUBJECTS IN THE EXPERIMENTAL GROUP ON THE DYSENORRHEA (PRE-TEST AND POST-TEST) AND ANXIOUS MEASURES

<table>
<thead>
<tr>
<th>Group</th>
<th>Ds1</th>
<th>Ds2</th>
<th>Change</th>
<th>Anxiety</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>High Anxiety</td>
<td>39.83</td>
<td>13.54</td>
<td>32.50</td>
<td>20.24</td>
</tr>
<tr>
<td>Low Anxiety</td>
<td>38.00</td>
<td>14.86</td>
<td>12.50</td>
<td>7.61</td>
</tr>
</tbody>
</table>

The high and low-anxiety groups within the experimental and
control groups were divided by the median on the Taylor Manifest Anxiety Scale, which was 15.0 for the experimental group and 23.5 for the control group. The F of 2.27 (Table 2), however, was not significant at the .05 level, and Hypothesis 2 was not rejected. There was no significant difference in change in dysmenorrhea between a high-anxiety and a low-anxiety group.

**TABLE 4**

MEANS, STANDARD DEVIATIONS, AND CHANGE SCORES FOR THE HIGH AND LOW ANXIETY SUBJECCTS IN THE CONTROL GROUP ON THE DYSMENORREA (PRE-TEST AND POST-TEST) AND ANXIETY MEASURES

<table>
<thead>
<tr>
<th>Group</th>
<th>$D_{s1}$</th>
<th>$D_{s2}$</th>
<th>Change</th>
<th>Anxiety</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
</tr>
<tr>
<td>High Anxiety</td>
<td>32.83 (15.87)</td>
<td>25.00 (16.67)</td>
<td>-3.50 (9.14)</td>
<td>30.17 (3.25)</td>
</tr>
<tr>
<td>Low Anxiety</td>
<td>25.17 (20.87)</td>
<td>21.67 (20.40)</td>
<td>-7.83 (3.19)</td>
<td>12.17 (7.05)</td>
</tr>
</tbody>
</table>

Hypothesis 3

Hypothesis 3 stated: There will be no significant interaction between the two independent variables (high or low anxiety, as measured by the Taylor Manifest Anxiety Scale, and exposure or non-exposure to group systematic desensitization) and amount of change in primary dysmenorrhea, as measured by the Semiobjective Criteria of Teen-Age
Dysmenorrhea. The F of 5.99 (Table 2) was significant at the .05 level, and Hypothesis 3 was rejected. There was a significant interaction between the two independent variables, anxiety level and exposure or non-exposure to treatment, and amount of change in primary dysmenorrhea. Figure 1 shows the nature and direction of the interaction effect between these variables, and presents the sums of the change scores for each of the four subgroups: high-anxiety experimental, low-anxiety experimental, high-anxiety control, and low-anxiety control.

**TABLE 5**

MEANS, STANDARD DEVIATIONS, AND CHANGE SCORES FOR THE HIGH AND LOW ANXIETY SUBJECTS EXCLUSIVE OF GROUP ON THE DYSMENORRHEA (PRE-TEST AND POST-TEST) AND ANXIETY MEASURES

<table>
<thead>
<tr>
<th>Group</th>
<th>$D_s_1$</th>
<th>$D_s_2$</th>
<th>Change</th>
<th>Anxiety</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>High Anxiety</td>
<td>36.33</td>
<td>14.53</td>
<td>28.75</td>
<td>18.11</td>
</tr>
<tr>
<td>Low Anxiety</td>
<td>31.58</td>
<td>18.52</td>
<td>17.08</td>
<td>15.44</td>
</tr>
</tbody>
</table>

Although the data failed to reject Hypothesis 2, indicating that there is no significant difference between high and low-anxiety subjects in amount of change in primary dysmenorrhea, the rejection of Hypothesis 3 and the analysis of the interaction effect reveal the
differential effects of treatment on the subjects, depending on anxiety level. The high-anxiety subjects were almost totally unresponsive to treatment, while the low-anxiety subjects showed strong positive change, which would indicate that the group systematic desensitization was effective only for low-anxiety subjects.

FIGURE 1

ANALYSIS OF INTERACTION EFFECT BETWEEN ANXIETY AND TREATMENT

Secondary Analysis

Eighteen Pearson product-moment correlation coefficients were computed, relating dysmenorrhea scores to anxiety scores. The results
are presented in Table 6. Four coefficients were significant at the .05 level, and supported the other findings of this study.

**TABLE 6**

COEFFICIENTS OF CORRELATION BETWEEN ANXIETY AND DYSENORRHEA SCORES (PRE-TEST, POST-TEST, AND CHANGE) FOR SIX DIFFERENT GROUPS

<table>
<thead>
<tr>
<th>Group</th>
<th>$d_s_1$</th>
<th>$d_s_2$</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-Anxiety Experimental</td>
<td>.300</td>
<td>.277</td>
<td>-.147</td>
</tr>
<tr>
<td>Low-Anxiety Experimental</td>
<td>-.640</td>
<td>.251</td>
<td>-.813*</td>
</tr>
<tr>
<td>Total Experimental</td>
<td>.046</td>
<td>.594*</td>
<td>-.662*</td>
</tr>
<tr>
<td>High-Anxiety Control</td>
<td>.664</td>
<td>.257</td>
<td>.682</td>
</tr>
<tr>
<td>Low-Anxiety Control</td>
<td>.175</td>
<td>.082</td>
<td>.857*</td>
</tr>
<tr>
<td>Total Control</td>
<td>.333</td>
<td>.146</td>
<td>.495</td>
</tr>
</tbody>
</table>

*Significant at the .05 level.

Among the experimental subjects, three correlation coefficients were significant, indicating that there was a relationship between level of anxiety and degree or amount of change in dysmenorrhea. The r of -.813 between the anxiety scores of the low-anxiety experimental group and the dysmenorrhea change scores for the same group supported the rejection of Hypothesis 3, which indicated that low-anxiety subjects received more benefit from treatment than did high-anxiety subjects. The r of -.662 for the total experimental group provided additional
support for the above findings, and showed that level of anxiety does help determine the effectiveness of treatment. The $r$ of .594 between the experimental group's anxiety scores and dysmenorrhea post-test results indicates that exposure to treatment increased the relationship between the two variables for this group by increasing the range of dysmenorrhea scores. The significant $r$ of .857, relating the anxiety and dysmenorrhea change scores for the low-anxiety control subjects, indicates that there was a positive relationship between level of anxiety and amount of dysmenorrhea change for these subjects.

Four of the correlation coefficients did indicate a significant relationship between level of anxiety and degree of dysmenorrhea or change in dysmenorrhea. Some of the other correlations may be depressed because of restriction of range. The mean anxiety scores for both the control and experimental groups on the Taylor Manifest Anxiety Scale exceeded the mean computed by Taylor (1953), which might indicate that dysmenorrheic women are more anxious than non-dysmenorrheic women.

Summary

This study was designed to test three null hypotheses, exploring the effects of group systematic desensitization on the symptoms of primary dysmenorrhea. The first and third hypotheses were rejected, indicating that there was a significant difference between the experimental and control groups in change in dysmenorrhea,
and a significant interaction between treatment and level of anxiety. The large deviations from the mean for all subjects, particularly those exposed to treatment, would seem to suggest that subjects participating in group systematic desensitization received varying amounts of benefit from treatment, and also that the menstrual process itself is a highly unpredictable one. No differential effect as a result of anxiety level was found, and Hypothesis 2 was not rejected.

Significant correlations were found which indicated inverse relationships between level of anxiety and change in primary dysmenorrhea for the experimental low-anxiety group and the total experimental group. A significant positive relationship was found between anxiety level and primary dysmenorrhea score for the experimental group on the dysmenorrhea post-test. A final significant correlation was found between level of anxiety and change in primary dysmenorrhea for the low-anxiety control subjects. This indicated that those subjects having higher anxiety levels showed a greater change in primary dysmenorrhea.
CHAPTER V
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

This study was conducted to examine the effects of group systematic desensitization on the symptoms of primary dysmenorrhea in relation to anxiety level. The sample consisted of an experimental group of 12 women treated in four sessions with group systematic desensitization focused on menstruation, and a control group of 12 women not treated with group systematic desensitization.

Two instruments were used in this study. The first was the Semiobjective Criteria of Teen-Age Dysmenorrhea (Golub, et al., 1959), which was used to determine degree of primary dysmenorrhea. The scale consisted of a list of ten symptom areas, with four different degrees of severity from which the subject could choose. Scores were weighted and interpreted according to the chart developed by the authors. The second instrument was the Taylor Manifest Anxiety Scale (Taylor, 1953) which was utilized to measure the level of general anxiety for each subject. The scale used 50 items scored for anxiety, and yielded median scores (15.0 for the experimental group and 23.5 for the control group) which established the cut-off points for the high and low-anxiety groups.

Multiple classification analysis of variance was computed to test the three null hypotheses. Pearson product-moment correlations
were computed to provide additional data incidental to the hypotheses. The .05 level was accepted for significance.

The multiple classification analysis of variance provided three F ratios, two of which were significant. The F of 5.47 measuring the difference between the amount of change in primary dysmenorrhea for the experimental and control groups was significant at the .05 level, and Hypothesis 1 was rejected. This indicated that the treatment group showed significantly greater change in primary dysmenorrhea than the control group, subsequent to group systematic desensitization.

The F of 2.27 for the difference between the high and low anxiety groups on the dysmenorrhea change scores was not significant, and Hypothesis 2 was not rejected. There was no difference, therefore, between the high and low anxiety groups in the amount of change in primary dysmenorrhea.

The interaction effect between level of anxiety and treatment yielded a significant F of 5.99, causing the rejection of Hypothesis 3. There was a significant interaction between level of anxiety and treatment, which indicated that those subjects belonging to both the low-anxiety and the experimental groups were the only ones showing significant change in primary dysmenorrhea.

There were four significant correlation coefficients between dysmenorrhea scores and anxiety. There were significant correlations between anxiety and dysmenorrhea change scores for both the low-anxiety experimental group (r = -.813), and the total experimental
group ($r = -0.662$). These indicated that the amount of change in primary dysmenorrhea varied inversely with the level of anxiety, and supported the rejection of Hypothesis 3. The correlation between anxiety and change in dysmenorrhea was significant for the low-anxiety control group ($r = 0.857$), and showed that change in primary dysmenorrhea varied with anxiety for this particular sub-group. The $r$ of 0.594 between anxiety and dysmenorrhea post-test scores for the experimental group was significant, while the correlation between anxiety and dysmenorrhea pre-test scores for the same group was not. This suggested that the treatment reduced exaggerated dysmenorrheic symptoms to a level more relative to the subjects' anxiety.

**Implications**

The results of this study generally confirm many of the statements from the literature previously cited in Chapter II. The significant $F$ leading to the rejection of Hypothesis 1 indicated that in this study a psychotherapeutic treatment was found to be effective in reducing the symptoms of primary dysmenorrhea. This supports the statements of Benson (1968), Horn (1967), and Mullen (1968) recommending psychotherapy as a feasible mode of treatment for this syndrome.

The failure to reject Hypothesis 2, indicating no difference in degree of change in primary dysmenorrhea between those subjects classified as high-anxiety and those classified as low-anxiety, confirms the findings of Hirt, Kurtz, and Ross (1967). Their study
did reveal, however, a positive relationship between the "pain" and "cramps" subscales of the *Semiobjective Criteria of Teen-Age Dysmenorrhea* (which were weighted higher than the other factors) and anxiety. This may, in part, explain the interaction effect found between treatment and anxiety level in the present study.

Hypothesis 3 was rejected by the significant F of 5.99, which demonstrated that a relationship does exist between exposure to treatment, and the anxiety level of the subject. Since systematic desensitization is an anxiety reduction technique, the finding that only low-anxiety subjects responded to treatment was somewhat unexpected. The elevated anxiety scores of the subjects in the high-anxiety groups might be reflective of factors untouched by the hierarchy used in this study. The hierarchy administered to the subjects in this investigation was focused on menstruation, and did not cover other related areas, such as conflict about sex role and identification. This finding does confirm Wolpe's (1958) original assumption that high general anxiety impedes the effectiveness of systematic desensitization, although Mitchell and Ingham (1970) claimed that general anxiety level made no difference.

Many authors (Benson, 1968; Deutsch, 1944; Frisk, et al., 1965; Hopkins, 1965; Horney, 1967; Israel, 1967; Johnson, 1968; Mead, 1955; Pasnau, 1969; Santamarina, 1969; Shainess, 1961; and Tindall, 1971) stated that the etiology of primary dysmenorrhea is partially psychogenic. The successful application of a psychotherapeutic technique to the primary dysmenorrhea syndrome provides 79
support for these statements.


Finally, the elevation of the mean anxiety scores of both control and experimental groups over Taylor's (1953) mean of 14.56 implies that dysmenorrheic women are more anxious than their non-dysmenorrheic counterparts. This might suggest additional anxiety factors unrelated to dysmenorrhea that predispose women to this type of disorder.

Conclusions

Generalizations about the applicability of systematic desensitization and other psychotherapeutic treatments to psychosomatic
disorders are not justified by the results of a single study utilizing a small and unique sample. The results of this investigation do indicate, however, that an efficient and economical technique is available to the practitioner with which to treat the symptoms of primary dysmenorrhea. A small expenditure of both patient and therapist time is required for treatment, and women who are most likely to benefit from therapy are easily identifiable by their general anxiety level. In addition, since the procedure is semi-automated and can be completely self-administered, the saving of therapist time and attention is indeed significant. Some women in the high-anxiety portion of the experimental group did, however, show substantial improvements in their symptoms. Due to the small time factors involved, it would probably be worthwhile to submit all affected women to this treatment, since more than 50 per cent of the subjects in the experimental group showed substantial improvement.

The results of this study also indicated that, although high-anxiety subjects benefited less from treatment than low-anxiety subjects, the relationship between dysmenorrhea and anxiety is small and insignificant. It would, therefore, be unjustified to assume that a woman suffering from severe primary dysmenorrhea is necessarily a highly anxious individual. In fact, the successful results of this study indicate that systematic desensitization was effective as a mode of treatment for primary dysmenorrhea when the causative factor presumably was highly specific anxiety about menstruation and dysmenorrhea. Since systematic desensitization, an anxiety reduction
technique, was effective in reducing the symptoms of a significant number of subjects in this study, the results suggest that anxiety in some form is at least partially responsible for the symptoms of primary dysmenorrhea. It is highly possible that those women in the high-anxiety group who showed little or no improvement after exposure to treatment were suffering from anxiety of a qualitatively different nature, perhaps of a more neurotic or free-floating type. While these individuals were unresponsive to treatment, it cannot, however, be assumed that their dysmenorrheic symptoms are beyond the bounds of psychotherapeutic accessibility.

It can be concluded, therefore, that a highly economical and efficient psychotherapeutic technique is available for the treatment of primary dysmenorrhea. The significance of these findings is of great potential magnitude, considering the annual loss of 140,000,000 working hours as a result of dysmenorrhea (Santamarina, 1969), and the degree of suffering experienced by a large number of women at every menstrual period.

Recommendations for Further Research

It is recommended that future research be conducted to enable the results of this study to be further generalized, and to attempt to resolve some of the questions raised by this investigation. Although the treatment employed in this study was effective to a significant degree, it was not beneficial to all subjects. This study

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has shown that those women not receiving significant benefits from group systematic desensitization focused on menstruation were those classified as having high anxiety. This result, however, does not define the nature of this anxiety, nor does it provide any idea as to methods with which to treat high-anxiety subjects. Because of the possibility that the differences in anxiety are qualitative as well as quantitative, the anxiety revealed by the higher group should be analyzed and interpreted with respect to its components.

Further investigations should be directed at an attempt to discover whether subjects' refusal to participate in treatment is a significant variable in the accessibility of their dysmenorrhea to psychotherapy. It is also possible that this reluctance to participate in treatment is reflective of a difference in the etiology of the individual's dysmenorrhea.

The experimenter encountered much embarrassment in the subjects with respect to the discussion of menstruation. It is conceivable that this embarrassment represents an unidentified factor in the etiology of primary dysmenorrhea, and should therefore be studied.

There are still many unknown variables in the psychogenic aspect of the etiology and treatment of primary dysmenorrhea. There should be further research to provide this information through more exhaustive exploration of family background, family menstrual history, age and number of children (Appendix G). These investigations could provide a composite picture of the type of woman susceptible to primary dysmenorrhea, and indicate which factors have significant
effects on responsiveness to treatment.

Finally, further studies should test the range of application of systematic desensitization, by applying this technique to a wider variety of psychosomatic illnesses.
March 17, 1972

To: All Medical Staff

From: Steven K. Reich, Mental Health Team

Re: Research Project (Dissertation): "The Effects of Group Systematic Desensitization on the Symptoms of Primary Dysmenorrhea"

I am requesting your cooperation and assistance in screening and assembling the subject groups for my dissertation research. Although I have probably discussed this informally with many of you, I will briefly restate the essential features of the project.

A number of authors, among them Golub (1959), Sommers and Parsons (1963), and Israel (1967), have suggested the possibility of psychological influence in the etiology and maintenance of primary dysmenorrhea. The theories concerning the nature of this influence seem rather clearly divided between those that view dysmenorrhea as an unconsciously learned behavior, and those that consider it to be a symptom of an underlying neurotic disorder. Most systematic study has been devoted to the identification of a consistent neurotic "dysmenorrheic" personality pattern. The majority of these studies, however, have failed to demonstrate the existence and therapeutic accessibility of such a pattern. The possibility, then, that dysmenorrhea is, in a sense, learned, appears all the more reasonable in view of various cultural beliefs and taboos, vernacular expressions, and parental attitudes towards menstruation.

The learning theory view of dysmenorrhea is largely dependent on the proposition that the menstrual cycle itself generates a certain amount of anxiety in particular women, as a result of the individual and collective attitudes mentioned previously. Treatment, therefore, hinges around relaxation and the consequent reduction of the anxiety that is believed to accompany the menstrual function. The technique itself is one developed by Joseph Wolpe, a psychiatrist, and is referred to as systematic desensitization. An indication that it may prove efficacious in the treatment of dysmenorrhea was presented by Mullen (1968), when he successfully reduced extremely severe symptoms with the application of systematic desensitization. This was, however, a case study, and consequently proves little since it was not subject to various kinds of experimental controls.
In terms of the subjects necessary for this study, I need a group of approximately twenty-five (25) women who are complaining of dysmenorrheic symptoms. Because this is a psychological and not principally a medical study, it is quite essential that all referrals for treatment exhibit symptoms in the absence of gross organic pathology. Neuroticism is not a major factor in this research, and there is consequently no need for you to make any initial assessment of the subjects' psychological conditions. When you refer a potential subject, I would appreciate your following a certain set of procedures. Most important, please avoid giving the subjects the impression that this is being treated in any way as a form of "mental illness." Secondly, please give them the minimum amount of information necessary to keep them interested. I would like to interview them all personally, and will therefore provide them with all the information they may require. Please hand them the explanation form and direct them as to the procedure to be followed in making an appointment with me. Should they need further information from you to interest them enough to make that appointment, please try to explain the aspect of relaxation in the treatment without emphasizing the hypothesized psychological origins of the symptoms.

Let me assure you that the anonymity of the subjects will be preserved. The entire project will be conducted according to the American Psychological Association's Code of Ethical Standards for Psychologists. Finally, I have no intention of interfering with any medication schedules. Your prescribing in accordance with your medical evaluation of the patient will in no way disturb my research; I am interested not in what medications the subjects take or on what schedules, but rather in whether there is any change in their need for medication following the treatment. The only exception to this previous statement would be the use of tranquilizers. Because of the need to measure anxiety level as part of this study, the unpredictable effects of various tranquilizers would make a woman using them regularly an inappropriate subject for this study.

I very much appreciate your assistance, and would welcome your comments and questions. Thank you.

Sylvia
APPENDIX B

March 17, 1972

To: All Potential Candidates for Training

From: Steven K. Reich, Student Health Center

Re: Explanation of Procedures

As your physician has probably explained to you, there is some evidence that the symptoms commonly referred to as "menstrual cramps" may be significantly alleviated through the use of relaxation procedures. These relaxation methods are not in themselves a new form of treatment, but they have not been applied in any systematic way to the kinds of symptoms you are experiencing. The "treatment" itself basically involves learning to apply deep muscle relaxation in connection with imagery focused on the menstrual process.

The training will be conducted in small groups, and will probably require a minimum amount of your time - most likely not more than a few weeks, an hour or two per week. There is no danger whatsoever in this procedure, and it will in no way interfere with any medications you may be taking for this condition.

It is essential that I speak with all of you individually, and would appreciate your making an appointment with me at your earliest convenience. At that time, I will be more than happy to answer any questions you may have regarding this program.

Your cooperation is appreciated. Thank you very much.

[Signature]
APPENDIX C

QUESTIONNAIRE #1

Name_________________________________________ Date____________________

Directions: For each symptom below, check the severity which best fits you. Include symptoms both before and during menstruation.

<table>
<thead>
<tr>
<th>Symptom</th>
<th>None</th>
<th>Mild</th>
<th>Moderate</th>
<th>Severe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain</td>
<td>0</td>
<td>7</td>
<td>14</td>
<td>21</td>
</tr>
<tr>
<td>Cramps</td>
<td>0</td>
<td>7</td>
<td>14</td>
<td>21</td>
</tr>
<tr>
<td>Backache</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Headache</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Nausea</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Vomiting</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Increased</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irritability</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Breast Fullness</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Abdominal Swelling</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drawing in Legs</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Other Symptoms</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Additional Comments:_____________________________________________________
_____________________________________________________________________
_____________________________________________________________________

[Scoring information given on questionnaire.]
*Semiojective Criteria of Teen-Age Dysmenorrhea* (Golub, et al., 1959).
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APPENDIX D

QUESTIONNAIRE #2

Name__________________________ Age________________________

Marital Status__________________ Number of children________

Age at first menstruation_______ Regular? Yes___ No___

Were you prepared for your first menstruation? Yes___ No___

If so, who told you about it?________________________________

What did they tell you?_____________________________________

Do you ever miss work, school, etc., because of menstrual cramps or related difficulties? Yes___ No___

Does or did your mother experience menstrual cramps? Yes___ No___

If you have any sisters, do they have cramps? Yes___ No___

Do you have any other relatives who have cramps? Yes___ No___

Have you in the past, or do you now, receive special attention from your family when you are having menstrual cramps? Yes___ No___

Have you seen a doctor or school nurse for cramps? Yes___ No___

When did you begin having cramps?___________________________

Do you take oral contraceptives? Yes___ No___

Do they appear to alleviate the symptoms at all, if you currently use them, or have in the past? Yes___ No___

Do you take any medications for menstrual cramps? Yes___ No___

If so, what medications, and how much?_______________________

Please list as many slang expressions for menstruation as you can. Underline the one(s) you commonly use yourself:__________________________
APPENDIX E

QUESTIONNAIRE #3

Directions: Please list the ten (10) features of menstruation itself and the onset of your menstrual period that you find most unpleasant. Please list them in order, with one (1) being the least bothersome and ten (10) being the worst.

1. ____________________________________________

2. ____________________________________________

3. ____________________________________________

4. ____________________________________________

5. ____________________________________________

6. ____________________________________________

7. ____________________________________________

8. ____________________________________________

9. ____________________________________________

10. ___________________________________________

Name________________________________________ Date________________________
APPENDIX F

QUESTIONNAIRE #4

Directions: Please read through the following items, and check true or false, according to which best describes you. Even if the item does not seem to apply to you, please choose one of the alternatives.

Name ___________________________ Date ____________________

1. I do not tire quickly. True False X
2. I am often sick to my stomach. True X False
3. I am about as nervous as other people. True False X
4. I have very few headaches. True False X
5. I work under a great deal of strain. True X False
6. I cannot keep my mind on one thing. True X False
7. I worry over money and business. True X False
8. I frequently notice my hand shakes when I try to do something. True X False
9. I blush as often as others. True False X
10. I have diarrhea once a month or more. True False X
11. I worry quite a bit over possible troubles. True X False
12. I practically never blush. True False X
13. I am often afraid that I am going to blush. True X False
14. I have nightmares every few nights. True False X
15. My hands and feet are usually warm enough. True False X
16. I sweat very easily even on cool days. True False X
17. When embarrassed I often break out in a sweat which is very annoying. True X False
18. I do not often notice my heart pounding and I am seldom short of breath. True False X
19. I feel hungry almost all the time. True False X
20. I am very seldom troubled by constipation. True False X
21. I have a great deal of stomach trouble. True False X
22. At times I lose sleep over worry. True False X
23. My sleep is restless and disturbed. True False X
24. I often dream about things I don't like to tell other people. True X False
25. I am easily embarrassed. True X False
26. My feelings are hurt easier than most people. True X False
27. I often find myself worrying about something. True X False
28. I wish I could be as happy as others. True X False
29. I am usually calm and not easily upset. True False X
30. I cry easily.  True X  False __
31. I feel anxious about something or someone almost all of the time.  True X  False __
32. I am happy most of the time.  True __  False X
33. It makes me nervous to have to wait.  True X  False __
34. At times I am so restless that I cannot sit in a chair for very long.  True X  False __
35. Sometimes I become so excited that I find it hard to get to sleep.  True X  False __
36. I have often felt that I faced so many difficulties I could not overcome them.  True X  False __
37. At times I have been worried beyond reason about something that did not really matter.  True X  False __
38. I do not have as many fears as my friends.  True __  False X
39. I have been afraid of things or people that I know could not hurt me.  True X  False __
40. I certainly feel useless at times.  True X  False __
41. I find it hard to keep my mind on a task or job.  True X  False __
42. I am more self-conscious than most people.  True X  False __
43. I am the kind of person who takes things hard.  True X  False __
44. I am a very nervous person.  True X  False __
45. Life is often a strain for me.  True X  False __
46. At times I think I am no good at all.  True X  False __
47. I am not at all confident of myself.  True X  False __
48. At times I feel that I am going to crack up.  True X  False __
49. I don't like to face a difficulty or make an important decision.  True X  False __
50. I am very confident of myself.  True __  False X

[X designates those responses scored as "anxious."]

Taylor Manifest Anxiety Scale (Taylor, 1953). Reprinted by permission of the author.
APPENDIX G

RESULTS OF QUESTIONNAIRE #2

Experimental Group

1. The average age at first menstruation was 12.4 years.
2. Three of the subjects (25%) stated that they were not prepared for their first menstruation.
3. Seven of the subjects (58.3%) were told about menstruation by their mothers, or another relative. The remainder were uninformed or learned about menstruation in school.
4. Ten of the subjects (83.3%) stated that they did, or had in the past, missed work, school, etc., because of dysmenorrhea.
5. Eight of the subjects (67%) stated that their mothers had dysmenorrhea.
6. Four of the subjects (33%) had sisters who had dysmenorrhea.
7. Four of the subjects (33%) reported receiving special attention due to their dysmenorrhea.
8. Four of the subjects (33%) had dysmenorrhea from menarche; the remainder reported first experiencing symptoms later, usually while in high school.
9. Five of the subjects (41.7%) reported having used oral contraceptives, and all five stated that the symptoms of dysmenorrhea appeared to be alleviated as a result.
10. Ten of the subjects (83.3%) reported using some medications for dysmenorrhea. The majority were non-prescription analgesics (aspirin, Midol, etc.), although some reported using prescription analgesics (Darvon, etc.).
11. The most commonly reported vernacular expression for menstruation was "period." Some unusual terms, however, were reported, such as "white horse," "flag," "George," "back in the saddle," "my red-headed grandmother came to visit," and "curse."
Control Group

1. The average age at first menstruation was 12.75 years.

2. Five of the subjects (41.7%) stated that they were not prepared for their first menstruation.

3. Eight of the subjects (67%) were told about menstruation by their mothers, or another relative. The remainder were uninformed, and one subject reported that her mother told her about menstruation after she had begun.

4. Six of the subjects (50%) stated that they did, or had in the past, missed work, school, etc., because of dysmenorrhea.

5. Five of the subjects (41.7%) stated that their mothers had dysmenorrhea.

6. Five of the subjects (41.7%) had sisters who had dysmenorrhea.

7. Four of the subjects (33%) reported receiving special attention due to their dysmenorrhea.

8. Five of the subjects (41.7%) had dysmenorrhea from menarche; the remainder reported experiencing their first symptoms much later, while in high school, or could not remember.

9. Eight of the subjects (67%) reported using or having used oral contraceptives; six (50%) stated that they alleviated the symptoms of dysmenorrhea, one said they did not, and one reported that they made her depressed.

10. Six of the subjects (50%) reported using some medications for dysmenorrhea. Only two of the six reported the use of prescription drugs.

11. Again, the most commonly used expression for menstruation was "period." Some of the subjects, however, mentioned such terms as "riding the red pony," "blood baby," "unclean," "curse," "sick" and "Charlie came to see me." One subject reported that boys she knew referred to menstruation as the "Rio de Sangre" (River of Blood).

It is interesting to note that comparatively few of the subjects reported having mothers and sisters who experienced dysmenorrhea.
In addition, few of the subjects stated that they received special attention from their families while experiencing dysmenorrheic symptoms.

These results do not appear to provide much indication of the sources from which dysmenorrheic symptoms might be learned. The sample used here was, however, relatively small, and further investigations are needed to study the relationships that might exist between dysmenorrhea and family menstrual history.
APPENDIX H
RELAXATION INSTRUCTIONS

Before we begin today I want you to take a moment and get in the most comfortable position you can. Move your body so you can feel that if you let your legs, arms, or other muscles go completely limp they would not fall, but would remain in a comfortable position. Now close your eyes and keep them closed throughout the session so you will not be distracted by light or anything around you. Do not fall asleep, although you may feel very close to this at times. Just listen to my instructions and follow them carefully.

The purpose of this session is to teach you how to relax and remove all muscle tension. You will quickly learn the difference between tension and relaxation as I have you tense, hold, and then relax muscle groups throughout your body. This way you will learn how to remove and replace tension with effortless relaxation. As each muscle group is relaxed, maintain its relaxation while moving on to the next group. In this way you will arrive at a final state of deep and complete relaxation. As you become completely relaxed, you may experience pleasant and natural sensations of warmth or heaviness in your muscles.

All right. Let's begin now. With both hands resting comfortably, make a tight fist with both hands and hold it. Tighter... Feel how the muscles pull on top of each hand, in the fingers, and in the upper and lower parts of each forearm. Now relax. Let your
hands and forearms drop and go completely limp. Remove the tension and replace it with effortless relaxation.

Now, while keeping both hands completely relaxed, tense the biceps muscles of both arms. Hold the tension and observe how it feels as the muscles pull on top and under your arms. Now relax. Let the relaxation flow down your arms. Both arms and hands are becoming completely relaxed. Notice the difference between the tension and relaxation.

Now with your arms still completely relaxed, raise both your shoulders as high as you can, as if you were trying to touch your ears. Feel the pull of the muscles across the shoulders as you raise them higher... Now relax and drop your shoulders. Allow them to sag farther and farther. Feel the relaxation spread from muscle to muscle.

Now this time tighten the muscles in your forehead and scalp by wrinkling your forehead and raising your eyebrows at the same time. Notice the feeling of tightness and tension. Now relax. Observe how the tension disappears as your brow becomes smoother and smoother.

Now squint your eyes tightly and wrinkle up your nose. Tighter, tighter... Notice the tension building in your face. Now relax. Let all the muscles around your entire face completely relax. Experience the pleasure of calm, effortless relaxation.

Now with your mouth closed, pull back the corners of your mouth as far as you can. Feel the tension increase as you pull the corners back farther and farther. Now relax. Notice the sensation of warmth that flows into these muscles as they become more and more relaxed.
Now tense your jaw muscles by biting your teeth together. Bite hard...Notice the feeling of tightness in your jaw muscles. Now relax. Let your jaws go completely limp. Let them sag and hang comfortably relaxed.

Now push your head back as far as it will go. Hold it...Feel the tension in the back of your neck. Now relax. Let your head return to its normal position. Now bend you head forward, touching your chin to your chest. Again feel the pressure in the back of your neck. Now relax. Return your head to its normal, comfortable position, and go on relaxing.

Pay attention to your body, and if any tension has crept back into any of your muscles, notice where it is, then remove it and replace it with deep, complete relaxation.

Now take a deep breath. Fill your lungs full and hold your breath. Notice how the muscles pull across your chest, and how the tension builds. Now relax. Breathe right out and continue to breathe normally, in and out. Notice how all the muscles of your body become more relaxed when you exhale. Go on breathing normally, easily, freely, completely relaxed.

Now making sure that your muscles remain relaxed, tighten your stomach muscles. Make them hard and hold it. Feel the tension...Now relax. Focus on the surge of relief and the complete comfort of relaxation. Notice the general sense of well-being that comes with relaxing your stomach muscles. Continue relaxing, enjoying the calm, pleasant sensations of deep, total relaxation.
Now I want you to tighten the muscles in your buttocks and arch your back. Hold it...Feel the tightness begin to build in your back. Now relax, let yourself sink back down, and enjoy the sensations of complete relaxation.

Now tighten the muscles in the upper thigh portions of both legs. Feel the pressure as you tighten the top and bottom muscles of both legs. Now relax. Observe the difference between the feelings of tension and relaxation. Let your muscles go loose and heavy.

Now I want you to tighten the calf muscles of both legs. Make them tighter...Notice how they almost hurt as they tense. Now relax. Notice the relief of relaxation as you let your muscles go.

Finally, push the toes of both feet hard into the soles of your shoes so that you arch up both feet. Feel the pressure in your feet. Now relax. Let your feet go and enjoy the calmness of effortless relaxation.

Again, pay attention to your entire body. Tighten all your muscles together - face, arms, legs, and back. Hold it...Now relax, and notice any areas of tension that may remain. If you find any, remove the tension and replace it with deep, effortless relaxation. You know how. Relax more and more.

Adapted from Heaps and Seamons (1972).
APPENDIX I

DESENSITIZATION HIERARCHY

1. You look at the calendar and realize that your period is due to begin in about ten days.

2. You look at the calendar and realize that your period is due to begin tomorrow.

3. You know that your period is coming soon and at least one day of your month is going to be unpleasant.

4. Your period is coming soon and you are beginning to feel bloated.

5. It's the day before your period and you're beginning to feel irritable.

6. Because of your period, you are beginning to have a dull, tired feeling.

7. Because of your period, you feel aching in your neck and back.

8. Due to your period, you feel hot and perspired.

9. You are feeling nauseated because of your period.

10. You are bothered by the odor of menstrual blood.

11. You are changing your Kotex or Tampax, see the blood, and realize you are flowing heavily.

12. You are wondering if you've stained your clothing, and are embarrassed by the thought.

13. You notice the first sensations of mild cramping.

14. You begin to feel severe pain and cramping.
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CURRICULUM VITAE

Steven K. Reich was born to Minna and Gerald Reich on November 6, 1945 in Brooklyn, New York. He attended the White Plains, New York Public Schools and graduated from White Plains High School in 1963. He attended Grinnell College in Grinnell, Iowa, and received the bachelor of arts degree in English in 1967. He then attended The University of New Mexico and received the master of arts degree in Guidance and Counseling in 1970. He continued his study of Counseling Psychology at The University of New Mexico, and received the degree of doctor of philosophy in Education in 1972.

On November 27, 1970, Steven K. Reich and Laura E. McCauley were married in Albuquerque, New Mexico. Mrs. Reich received her bachelor of arts degree in Political Science from The University of Denver in 1968, and her master's degree in Guidance and Counseling from The University of New Mexico in 1970. She has been employed as a Disability Adjudicator with the State of New Mexico Division of Vocational Rehabilitation.

While completing his master's degree, Dr. Reich was the Director of Testing Services for the Albuquerque Technical-Vocational Institute. During the following year, he was a graduate assistant and clinical supervisor for the Department of Guidance and Special Education, while completing the requirements for his Ph.D. As clinical supervisor at Manzanita Center, University of New Mexico,
Dr. Reich was responsible for supervising master's students during their counseling practicum and internship experiences. During the summer of 1971, Dr. Reich was a Visiting Assistant Professor of Education in Guidance and Counseling at New Mexico Highlands University, Las Vegas, New Mexico. In addition to his graduate studies, Dr. Reich has completed a doctoral internship in individual, group, and family psychotherapy at The University of New Mexico Student Health Center as part of the Mental Health Team.

In September, 1972, Dr. Reich will be joining the faculty of the Boston University College of Basic Studies, where he will be assuming both teaching and counseling responsibilities in the Department of Psychology and Guidance.