

MENSTRUAL SYNCHRONIZATION

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MENSTRUAL SYNCHRONIZATION

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DECEMBER, 1994

ABSTRACT

Significance. This phenomenologic study produced descriptions of menstrual synchronization, which is a significant coming together of the onset of menstrual cycles between or among women. These descriptions will assist nurses to design effective strategies and techniques to help women gain knowledge about their cycle functions as well as acknowledge and honor this aspect of their menstrual cycle. Previous scientific studies that documented the objective existence of menstrual synchrony did not discuss the subjective meaning of the experience of menstrual synchronization from the perspective of women who were studied.

Theoretical Framework. Martha Rogers' (1970, 1986, 1990) existing conceptual framework of the Science of Unitary Human Beings, Carl G. Jung's (1955, 1973) theory regarding synchronicity, as well as aspects of general systems and human systems theory provided the theoretical framework for the findings. This was especially useful

because it generated a systems view of health from which to approach menstrual synchronization, a natural, healthy phenomenon.

Methodology. Using a qualitative research method, data were generated using a loosely structured interview schedule. Coliazzi's (1978) method of data analysis was used to analyze the audiotapes and written transcriptions in conjunction with a sophisticated computer program, QUALPRO (Blackman, 1993). A review of scholarly and fictional literature was done before, during, and after the data analysis. The criteria of rigor commonly expected with scientific inquiry was performed according to Guba's (1981) and Sandelowski's (1986) methods for achieving credibility, transferability, dependability, and confirmability.

Participants. The 13 participants ranged in age from 25 to 46, with a mean age of 37. All of the participants had or were experiencing menstrual synchronization. They were all Caucasian with varied ethnic-cultural identities, socioeconomic backgrounds, and religious-spiritual orientations.

Findings. Four themes and respective subthemes emerged related to describing the participants' experience of menstrual synchronization. All of the participants contributed to the theme, "Knowing Menstrual Synchronization

is Happening and When." Their described thoughts, opinions, knowledge, feelings, values, beliefs, and explanations about the phenomenon generated the theme, "The Meaning of Menstrual Synchronization." The third theme, "Relationships and Connections," encompassed and interconnected all of the themes. The actual experiences that the women participants had were comprised the fourth theme, "The Experience of Menstrual Synchronization."

TABLE OF CONTENTS

COPYRIGHT	iii
ABSTRACT	iv
LIST OF TABLES	x
LIST OF FIGURES	xi
Chapter	
I. Background	1
Purpose of the Study	6
The Problem of the Study	8
Significance of the Study	8
Theoretical Framework	11
Assumptions	21
Qualitative Research Assumptions.	22
Theoretical Assumptions	22
Research Assumptions.	25
Research Question	25
Definition of Terms	26
Limitations	27
Summary	29
II. REVIEW OF THE LITERATURE	30
Definitions	30
Philosophy, History and Literature.	33
Myth and Legend	35
Anthropology.	44
Medicine and Psychology	51
Summary	56
III. METHODOLOGY.	57
Design.	58
Naturalistic Setting.	60
Participants.	60
Protection of the Rights of Participants.	65
Instruments	67
The General Interview Guide	67
The Questionnaire	68

The Interviewer	68
Treatment of Data	71
Concerns and Strategies	76
Credibility or Truth Value.	77
Transferability or Applicability.	80
Dependability, Consistency, or Auditability	81
Confirmability or Neutrality.	84
Summary	85
Decision Trail.	86
IV. FINDINGS OF THE STUDY.	91
The Participants in General	91
The Participants Described.	94
The Individuals	94
As a Group.	97
Analysis of the Data.	97
Knowing Menstrual Synchronization is is Happening and When	121
How Know or Knew.	122
Time.	123
The Meaning of Menstrual Synchronization.	124
Meaning	125
Explanation	127
Relationships and Connections	130
Vital Relations	130
Other Relations	132
The Effects of Menstrual Synchronization.	133
Effects	134
Premenstrual Syndrome (PMS)	138
Other Codes	139
Contrary Cases of Menstrual Synchronization	139
Cases Related to Menstrual Synchronization.	140
Summary	140
V. DISCUSSION, CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS.	142
Discussion of the Findings.	143
Demographic Profile of the Participants	143
Researcher's Perspective.	144
Richness of the Data.	147
The Research Findings	149
Conclusions	154
Implications for Education, Research Practice, and Theory	156

Education Implications	156
Research Implications.	158
Practice Implications.	161
Theoretical Implications	164
Recommendations for Further Study.	168
REFERENCES	171
APPENDICES	
APPENDIX A: Prospectus Letter, Dean of Graduate School and Human Subjects Review Committee Approval Letter.	
APPENDIX B: Letters of Introduction	191
APPENDIX C: Consent to Participate: Adaptation of Consent Form B.	196
APPENDIX D: Consent to Tape-Record: Adaptation of Consent Form C.	199
APPENDIX E: Confidentiality Letter for Transcriptionists and Consultants.	201
APPENDIX F: General Interview Guide (Original Form).	203
APPENDIX G: Questionnaire.	207
APPENDIX H: Sample Second Interview Letter	209
APPENDIX I: Interview 3 -- Letter to Participants and Menstrual Synchronization and Synchronization Resources.	213

LIST OF TABLES

Table	Page
1. Demographic Data from the Questionnaire	93
2. An Effect of Menstrual Synchronization - Coming-Together-and-Going-Apart-and- Coming-Together.	137

LIST OF FIGURES

Figure	Page
1. The Four Themes of Menstrual Synchronization.	107
2a. How Know or Knew, including Behaviors Observed, that Menstrual Synchronization was Occuring	111
2b. Time it Took for Menstrual Synchronizatin to Happen	112
2c. Meaning (Thoughts, Opinions, Knowledge, Feelings, Values, and Beliefs) about Menstrual Synchronization	113
2d. Explanation, including Emotional and Physical Proximity Necessary for Menstrual Synchronization to Occur.	114
2e. Vital Relations (Lesbian Partner, Room Mate, or Dorm Mate, or Friend)	115
2f. Other Relationships (Family of Origin, Co-Worker/Friend. Co-Worker, and All of the Above).	116
2g. Effects, including Experiences, Ineffable, Effects of, Sensations, and Coming-Together-and-Going-Apart-and-Coming-Together of Menstrual Synchronzation.	117
2h. Premenstrual Syndrome (PMS) and includes How They Felt about Their Menstrual Cycle	118
2i. Contrary Cases of Menstrual Synchronization . .	119
2j. Cases Related to Menstrual Synchronization. . .	120

CHAPTER I

Background

A natural biological event, menstruation, is the process of the monthly cycle in which the ovum of a female human is released from an ovary and transported to the uterus. A significant coming together of the date of menstrual cycling among or between women is menstrual synchronization. Such women are in close association (physically or emotionally) over several, usually three to four, months. Menstruation per se is a very complex phenomenon. The physiological process of menstruation is affected by a host of factors, such as psychological, social, cultural, historical, political, behavioral, economic, ecological, legal, linguistic, and metaphysical conditions (Beck et al., 1984; Lander, 1988).

This study addressed the one phenomenon of menstrual synchronization as experienced by a selected group of women. Synchronistic events usually do not solve material or natural problems. Synchronicity gives emotional clarity or symbolic insight to a dilemma or a phenomenon (Fraser, 1981, p. 291-292). In coming to a richer understanding of this natural, healthy, holistic life process of women the body of

knowledge about the phenomenon of menstruation was enlarged. A loosely structured interview guide generated the data and the participants' own words describe the experience of menstrual synchronization. I did a review of the literature before, during, and after the data analysis. Participant, faculty, and other corroboration of the data analysis lent support for the validation of the study's themes and meanings.

Synchrony comes from the word *synchrone*. Synchrony "means to be joined in the same period but so that changing phases are possible" (Whall, 1982, p. 73). Synchrony implies that growth, development, and change are possible within a system without dissolving the system. Synchronicity, the phenomenon that Carl G. Jung (1955, 1973) calls a "meaningful coincidence," is apparent in our everyday lives. For example, while traveling many people have so-called chance encounters with other persons that are meaningful.

The relative frequency of synchronistic events impressed Jung, according to Fraser (1981). Meaningful coincidence is different from meaningless coincidence or chance. Meaningful coincidence is an inner, psychic manifestation, (e.g., dreams, fantasies, thoughts, archetypes, and preconscious images), connected by meaning with an outer, physical event, (i.e., detected by one or some combination of the five senses). The internal and

external events cannot be causally connected by an observer. A synchronous event is also known as meaningless coincidence and merely connects two events in time. That is, two synchronous or coincidental events occur simultaneously whereas in synchronicity the meaningful coincidence takes place within a subjective context.

"Synchronicity may be defined as simultaneity plus connection by meaning" (Fraser, 1981, p. 223, [italics deleted]). Fraser (1981) provides an example of the difference between meaningless and meaningful coincidence. "If I sneeze when an airplane crashes before my eyes, this is apt to be meaningless coincidence. If, however, I have entertained hostile fantasies about that plane and then it crashes before my eyes, it will impress me as a meaningful coincidence, though here too we must assume complete causal independence" (n41, p. 636). Synchronistic events are acausal in nature and are not amenable to rational explanation. Pure chance cannot account for synchronistic events. The connection between two events is linked through their meaning that is subjectively, and usually spontaneously, felt by the participant. Jung (1969) postulated that synchronicity is involved in linking the participant with deeper layers and levels of the unconscious realm.

Taylor (1988) prepared a questionnaire for an

unscientific study designed to find out about the attitudes and feelings of women about menstruation. Of the 18 questions one asked the following: "If there are other women who menstruate in your household, do you menstruate at about the same time?" (p. 110). Of the 53 respondents, 60 percent said that they experienced menstrual synchrony with other women. Four percent said they did not have this experience and the rest said that it did not apply. Menstrual synchronization is a subjective experience that reveals linkages with other women. This study sought to scientifically understand the lived experience of women who were aware of the phenomenon of menstrual synchronization in their lives.

Previous scientific studies that documented the objective existence of menstrual synchrony did not discuss the subjective meaning of the experience of menstrual synchronization of the women who were studied. Also, they did not investigate the sexual orientation of their participants or they eliminated women who were in lesbian relationships (Trevathan et al., 1993). Some anthropological and medical studies have documented and described the phenomenon of human menstrual synchrony (Buckley, 1982; Buckley and Gottlieb, 1988; Cutler et al., 1979; Cutler et al., 1985; Graham, 1991; Graham and McCrew, 1980, 1992; Jarett, 1984; Kiltie, 1982; Knight, 1988, 1991; McClintock,

1971; Preti, 1987; Quadagno et al., 1979; Russell et al., 1980; Shuttle and Redgrove, 1978; Skandhan et al., 1979; Triedman, 1980; Weller and Weller, 1992, 1993). The medical studies were concerned with the phenomenon of menstrual synchrony in a young age group (college undergraduates) and the anthropological studies surveyed non-Western and nonindustrial cultures. No nursing studies regarding menstrual synchrony or menstrual synchronization were located. We know very little about, and understand less, the lived experience of menstrual synchronization.

My standpoint for this study was my experience and intuition. While an undergraduate I researched the relative merits of estrogen use versus calcium supplements for menopausal women and facilitated a support group for women in the menopausal era. After that I studied premenstrual syndrome (PMS) and co-led a psychoeducational course for women interested in or affected by PMS. The focus for this study sharpened while critically analyzing the concept "boundary." Later, as a feminist, psychiatric-mental health-psychosocial-holistic nurse, I analyzed the then-burgeoning phenomenon of codependency, which was so reminiscent of PMS. Yet I wanted to study something that was more positive and health-affirming. I have lived with women nearly all of my life. I became keenly aware that after a while we, whether in a dyad or small group, had our menstrual cycles

simultaneously. Anecdotally this had been corroborated by other women. My background in philosophy and feminism coupled with moon and ocean watching pointed toward the belief that once all women menstruated simultaneously in relation to the cycles of the moon. And, for various personal and professional reasons, since 1979 I have tracked my menstrual cycle on a calendar. These interests and experiences framed the research objectives of this study: to explore, describe and compare the lived experience of women who were aware of the subjective experience of menstrual synchronization.

Purpose of the Study

The literature on health promotion and wellness reflected an ever increasing complexity and an understanding of health that is multivariate in nature. For example, gender was a variable that contributed to and affected health and well-being (Belle, 1987; Nicholas and Gobble, 1990). If nursing is to understand the healthy aspects of the everyday experiences of women, then this in-depth study of a natural life process, an aspect of the health-enhancing menstrual cycle, could assist nurses in gaining and imparting a better understanding of the phenomenon of menstrual synchronization. This understanding may also aid in the development of interactions by nurses that promote

healthy attitudes toward menstruation as a process.

The menstrual cycle per se, according to Preston (1991), is a most dramatic, consistent and available instance of the mind-body relationship. In nursing practice and academia there is evidence of a renewed interest in the interactional nature of psychophysiologic phenomenon--the interrelated physical, mental, emotional, spiritual, relationship, and volitional domains in life--and the development of strategies for attaining, maintaining, and enhancing health. Focusing on what has been left out or unaccounted for (Spender, 1985) in nursing research, such as the experience of the phenomenon of menstrual synchronization, can give nurses new insight into ideas about health, human "wholeness" and healing. Nursing education and nursing theory have recently noted the importance of the mind-body relationship along with recognition of the mind-body-spirit as a single integrated entity.

More recently the emphasis in nursing was on health and wellness, the status and relationship of human beings in terms of their health status, and on integrating related theories with nursing theory (Bevis, 1982; National League for Nursing, 1979). In short, nursing came to reclaim and own its legacy from Florence Nightingale, noted to be the "first scientifically trained nurse recognized for her

holistic orientation" (Dossey et al., 1988, p. 65). She focused on health, whole individuals, and their environment. Some in the nursing community realized that human beings and their relation to health conditions were the most important concerns of nursing instead of their parts or diseases.

By the late 1970s nurses identified themselves as holistic practitioners and focused mainly on integrating a wellness lifestyle, specifically through new techniques with an emphasis in the following areas: nutrition, physical awareness, stress reduction, and self-responsibility (Dossey et al., 1988). The American Holistic Nurses Association formed in 1980. In the 1980s nursing theorists, such as Rosemarie Rizzo Parse (1981) and Margaret Newman (1986), focused on health and wellness. By the 1990s nursing began to realize the power of systems of healing.

The Problem of the Study

The research question of the study was: What is the lived experience of menstrual synchronization from the perspective of the women who have experienced it?

Significance of the Study

There was a dearth of research regarding the natural health and life processes of women. Meleis (1989) identified women's health care and the complex life process of

menstruation as global priorities for nursing research.

Modern industrial society almost completely ignores natural cycles and tries to force life into an artificial linear structure. We are not able to use our energy to the fullest because we do not recognize the subtlety and variety of the cyclic energy flowing through us. We often become sick from ignoring our own cycles, or we think we are sick because our energy fluctuates.... Frequent human cycles are most evident in women's lunar menstrual cycles (Iglehart, 1983, pp. 155-156).

In addition, there was a collective body of subjective views--both positive and negative--about menstruation, also myth and folklore, which deserved exploration.

It was only in the 1970s that there were any scientific books, articles, or studies on the psychology of menstruation and menstrual patterns, and even then in a limited number. Recently, there have appeared a few chapters in books (and fewer books per se) regarding the social, biological, and anthropological facts and myths surrounding the phenomenon of menstruation. Some of these books and chapters in books mention menstrual synchrony (Buckley and Gottlieb, 1988; Delany, et al., 1976; Francia, 1988; Graham and McGrew, 1992; Harding, 1990; Knight, 1991; Lander, 1988; Shuttle and Redgrove, 1978; Sjoö and Mor, 1991; Slayton, 1990; Taylor, 1988; Turke, 1988). A few biomedical, quantitative studies had documented the existence of menstrual synchrony and factors that might mediate menstrual

cycle length, menstrual regularity and menstrual synchrony. (Cutler et al., 1979; Cutler et al., 1985; Graham, 1991; Graham and McCrew, 1980, 1992; Jarrett, 1984; Kiltie, 1982; McClintock, 1971; Quadagno et al., 1979; Russell et al., 1980; Skandhan et al., 1979; Weller and Weller, 1992, 1993; Wilson, 1988). For the most part, these studies focused on college-aged, same-sex room mates and the factors underlying menstrual synchrony were not identified.

Various psychosocial considerations, (e.g., actual amount of time spent together, the nature and closeness of the relationship, and time spent with males), environmental factors, such as living arrangements and biological predictors, (e.g., use of deodorants, perfume, and the presence of pheromones), have been postulated. Not one of these studies interviewed the women participants. Most studies used a paper-and-pencil chart to track the onset of menstrual periods. Graham and McGrew (1992) used questionnaires at the beginning of their research and later obtained data regarding the onset dates of menstrual cycles four months later.

Previous studies of the menstrual cycle usually focused on pathological or disease states, such as PMS and dysmenorrhea. "Rarely has menstruation been viewed positively, nor have its potentially health-enhancing effects been studied" (Nicholas et al., 1992, p. 14).

Therefore, making sense of and finding meaning in a normal and healthy human female cycle, which is the universal phenomenon and process of menstruation, represented a gap in the body of scientific literature. Rather than looking to the biomedical model, or another authority, this study found "answers" regarding the experience of menstrual synchronization from the past and current experience of women who were familiar with the phenomenon of menstrual synchronization. This study was radical in that it went to women themselves to find out about the phenomenon of menstrual synchronization.

Theoretical Framework

The reductionistic biological, the pathological, nor the psychoanalytic models furnish an adequate framework for understanding the complex and multifaceted experiences and interrelationships of the lived experience of menstrual synchronization. Due to the complex nature of the synchronization of menstrual cycles, aspects of general systems theory, the holistic approach (natural or human systems theory), Martha Rogers' (1970, 1980a, 1980b, 1983a, 1983b, 1986, 1990) conceptual framework, and Jung's (1951, 1955, 1969, 1973) theory are employed to provide a conceptual model with a systems view of health from which to approach menstrual synchronization. An organismic worldview

undergirds this study.

The organismic worldview emphasizes the living organism as an evolving, dynamic process which is characteristically holistic, integrative, and systemic (Nicholas et al., 1992). From this perspective living organisms can only be understood when viewed as a whole (Nicholas et al., 1992). "Experience is understood to be a whole that is best comprehended through the use of a systems approach" (Polkinghorne, 1983, p. 152). General systems theory (von Bertalanffy, 1968) makes operational the organismic worldview, which has three specific properties of complex interactional processes. These could be illustrated in terms of menstruation or menstrual synchronization.

The first property, which is the system principle, is hierarchical organization. Hierarchical organization stresses the relationships among the levels of systems such that:

Within each system there are subparts of the system in which each is both (a) a component of a larger system that is in the hierarchy and (b) a system in its own right, consisting of smaller subparts from lower levels in the system. Across these subparts there is a relationship of connectedness such that changes in one level in the system will result in reverberations throughout adjacent system levels (Nicholas, et al., 1992, p. 10).

In terms of menstrual synchronization, an example of

hierarchical organization is the range from the cellular, (e.g., the cells of the lining of the endometria of two different women), to the global, (i.e., during the alleged time when all women in all societies menstruated in synchrony or synchronistically).

Secondly, general systems theory is a self-regulating feedback model. The frequently cited example of a self-regulating feedback mechanism, which is how the various levels of the system communicate, is a thermostat. Menstrual synchronization could be an example of a complex self-regulating, cyclic feedback system because of the menstrual cycle adjustments that are made between or among women who become synchronized.

The third property of general systems theory is the notion of emergence, which is "the concept that new and unique properties evolve from the interaction of system parts. Emergence is implied in the concept that the whole is greater than the sum of its parts" (Nicholas, et al., 1992, p. 11, [italics deleted]). The unique ensemble of interactions, ranging from cellular to the individual, individual-to-individual, family to the subcultural, and the cultural to the societal all influence the phenomenon of menstrual synchronization. This pattern or structure of menstrual synchronization is independent of the "parts." For instance, the physical, biological, or social aspects

comprising menstruation of two (or more) women is not a whole arrangement, the phenomenon of menstrual synchronization. Rather, it is the exchange of two or more women interacting with each other that gives rise to the phenomenon of menstrual synchronization. New and innovative properties evolve from the engagement of system parts.

Holism is assumed within the organismic worldview which "proposes that the person is inherently and spontaneously active, the source of acts. The person engages in interactions with the environment, rather than reacting to it" (Fawcett, 1984, p. 10). Initially, holism was devised for the study of biologic systems and later used to study social and other systems. Holism "gives its attention to the organization or structure of a system and to the modes of information exchange that occurs within the system and/or take place between it and its environment" (Polkinghorne, 1983, p. 135). The holistic approach entertains the notion that the parts of anything are interrelated to form a unity in which each part is unique yet infinitely and inextricably a part of the whole.

Martha Rogers' (1970, 1980a, 1980b, 1983a, 1983b, 1986, 1990) *Science of Unitary Human Beings* mirrors an organismic view of the world (Fawcett, 1984) and is classified as a systems model (Riehl and Roy, 1980). Rogers' theory reflects a holistic view of the person (Fawcett, 1984). She notes

(1980b), however, that the term "holistic" has various and ambiguous meanings and, therefore, she does not use the term. Nonetheless, Rogers' idea of the person as unitary without any distinct parts is congruent with the use and meaning of the term holistic. The focus of this study is on a unified whole rather than a summation of components. Thus, Rogers' conceptualizations, known as the Life Process Model and the Unitary Person Model, are congruent with and expand the conceptual framework of this study. Additionally, Rogers provides specific concepts and propositions that serve to anchor this study.

The focus of Rogers' conceptual system is the human being as integral with the environment, which is the meaning of unitary human being. Briefly, the four constructs of Rogers' conceptual system are as follows: (1) open systems, (2) energy fields, (3) pattern, and (4) pan- or four-dimensionality. Open systems or openness (Rogers, 1980a, 1980b) is congruent with von Bertalanffy's (1968) postulate that open systems are living systems that display increasing diversity and complexity (negentropy). Rogers (1980a, 1980b) maintains that the fundamental unit of all things living (and nonliving) is the energy field. The energy field is a valid reflection of the whole. The human and environment are one. Persons are energy fields rather than being thought of as having energy fields. Therefore, in this conceptual

system, the human being is a whole that is more than and different from the sum of its parts (Rogers, 1970).

Pattern is an abstraction, a single wave, which identifies the given energy field (Rogers, 1986). A person's unique and ever-changing wave pattern characterizes her energy field in an integral, mutual process with the environment. The environment is "all that which is external to a given human field" (Rogers, 1980a, p. 97). Pan- or four- dimensionality is a nonlinear domain without spatial or temporal attributes (Rogers, 1986). "The central components of the model are unitary human beings and environment engaged in the life process" (Quillin and Runk, 1989, p. 291). From these central components, Rogers derived the principles of homeodynamics, composed of three separate principles, which are "broad generalizations that postulate the nature and direction of unitary human development" (Rogers, 1980a, p. 333).

The three principles, helicy, integrality, and resonancy, in addition to the derived theories of paranormal events, have relevance here. Interestingly, in writings before 1977 Rogers included a principle of synchrony. However, in her later writings the principle of synchrony was subsumed into the principle of helicy (Rogers, 1983b) to clarify her conceptual model (Malinsky, 1986). Earlier, the principle of synchrony stated: "Change in the human field

depends only upon the state of the human field and the simultaneous state of the environmental field at any given point in space-time" (Rogers, 1970, p. 98).

The principle of helicy states that the nature and the direction of human and environmental change is continuously innovative, probabalistic, and characterized by increasing diversity of the human field. The environmental field pattern and organization, which emerges out of the continuous, mutual, simultaneous interaction between the human and environmental fields, manifests nonrepeating rhythmicities (Rogers, 1980a). Menstrual synchronization is a process that works out complementarities that are cyclic in nature, but innovatively changed and transformed at each new level of integration. The principle of integrality is subsumed under the principle of helicy (Rogers, 1980a). Yet a discussion of integrality is important here because it illuminates the exchange of energy and imminent patterns encompassing the interconnections involved in the phenomenon of menstrual synchronization. The principle of integrality describes the continuous interactions of the human and environmental fields. This principle relates to the concepts of organization, pattern, and openness.

The principle of integrality posits that the interaction between human and environmental fields is continuous, mutual, and simultaneous. The unitary person and

the environment are one. Assumed in the principle of integrality are the concepts of rhythm, pattern, and negentropic (i.e., of increasing differentiation, heterogeneity, diversity, and complexity of pattern) evolutionary emergence (Rogers, 1970). The rhythmic flow of energy waves is characterized by an ordered arrangement of rhythms such that both the human field and the environmental field undergo continuous dynamic metamorphosis in the human-environment interaction process (Rogers, 1970). The insight that this conceptual system lends to the phenomenon of menstrual synchronization is that one expects more harmonious interactions between women who have a bond because their patterns might be more synchronous than the interactions between human females with whom patterning has not occurred (Gaydos and Farnham, 1988). As Rogers (1986) states: "Human field rhythms are manifestations of the whole" (p. 335). Therefore, the phenomenon of menstrual cycle pattern synchronization expresses a manifestation of the whole human-environment interaction.

The principle of resonancy holds that the human field and the environmental field are identified by wave pattern and organization manifesting continuous change from lower-frequency, longer wave patterns to higher-frequency, shorter wave patterns (Rogers, 1980a). In terms of menstrual synchronization, this principle expresses change as rhythmic

or cyclic in nature. There is a rhythmic flow of energy waves between human and environment. In this instance, the rhythmic flow of energy waves in the environment is another female human being.

"All developments in nature and human situations show cyclic or rhythmic patterns in the cycle of change" (Wilson and Fitzpatrick, 1984, p. 38). When two rhythmic wave patterns are, over time, synchronized the result is a reinforced wave that synergistically is twice the amplitude of either one alone. This is resonance. The phenomenon of resonance results in a sudden qualitative change when two women realize that they are in phase with each other. They synchronize with each other via a rhythmic wave pattern, menstruation, a mutually enhancing expression of the full life potential (Rogers, 1970). Thus, when one woman interacts with another, there is an interaction of energy fields as they become the spontaneous environment to each other. If a change, such as the onset or cessation of menstruation occurs within either woman, it then proximately occurs within the other woman, and in this conceptual framework it is an outcome of this field interaction.

Because menstrual synchronization is currently an unexplainable process, it can be viewed as a paranormal event. Jung (1955) works maintain that there are three types of synchronicity. Further, he says that all three types are

paranormal in nature. In the first type of synchronization, there is "a coincidence between mental content (which could be a thought or a feeling) and an outer event" (Bolen, 1979, p. 16). An example of this, in terms of menstrual synchronization, is in keeping with the lore which purports that menstrual synchronization is interconnected with the cycles of the moon.

In terms of the second group of synchronistic events, "a person has a dream or vision, which coincides with an event that is taking place at a distance (and is later verified)" (Bolen, 1979, p. 16). Anecdotal accounts retell the experience of two women separated by more than two thousand miles. One begins her menstrual cycle and in a later telephone conversation determines that the other woman also started her menstrual cycle on the same day simultaneously. That continued unabated for one year. In the last category of synchronistic events described by Jung, "a person has an image (as a dream, vision, or premonition) about something that will happen in the future, which then does occur" (Bolen, 1979, p. 16). One participant surmised that in the future she would continue to become menstrually synchronized with other women. Indeed, during a later interview, she shared that this had happened. Another instance of this aspect of synchronization is that one woman has a sense or intuition that she is "in sync" with another

woman and later finds out that indeed they are sharing the experience of menstrual synchronization unbeknownst to either one of them previously.

These are all examples of paranormal events, an explanation of which Rogers' (1970, 1980a, 1980b, 1983a, 1983b, 1986, 1990) conceptual model provides. The pan- or four-dimensionality aspect of Rogers' conceptual model holds that any present point is relative and that the human field is identical with the relative present. In this context, the human field is in continuous mutual, simultaneous interaction with a four-dimensional environmental field. The implication is that a paranormal manifestation, such as menstrual synchronization, is explainable and rational. An assumption Rogers makes is that the principles of homeodynamics are based on noncausality. A parallel assumption of Jung's is contained in the title of his book, Synchronicity An Acausal Connecting Principle (1973). Further assumptions of this study follow.

Assumptions

Relevant to the present study, there are three types of assumptions. First, there are the situational or context-relevant assumptions which have to do with the nature of qualitative research and the researcher's perspective. Second, there are the theoretical assumptions inherent in

the chosen theoretical framework. And third, there are the research assumptions that are particular to the methodology of this study. The following describes these three types of assumptions.

Qualitative Research Assumptions

The definitions of qualitative research given by Burns and Grove (1987), Cobb and Hagemaster (1987), Kirk and Miller (1986), and Parse, Coyne and Smith (1985) succinctly provide the assumptions underlying the nature of qualitative research. They also mirror those of the researcher's perspective. Qualitative studies are based on (1) an alternative to the paradigm of positivism, (2) the fundamental notion that words are the elements of data and (3) there is an inductive approach to data analysis. Moreover, beyond stating my assumptions, I assume that I then bracket or suspend these preconceptions. Bracketing my assumptions lets me fully grasp the realm of the participant in lieu of imposing an a priori hypothesis on the experience (Munhall and Oiler, 1986).

Theoretical Assumptions

There are general theoretical assumptions that this human science study is based upon: (1) a biology and psychology of holism, which is nonreducible individuals

connected with others and nature (Dossey et al., 1988), and (2) "a context of interhuman events, processes, and relationships" (Dossey et al., 1988, p. 25). Rogers (1970) derives the assumptions which undergird her conceptual model from selected aspects of the literature on the nature of humanity, physics, mathematics, and the behavioral sciences. Strong parallels exist between Rogers' basic assumptions and general systems theory, a general science of wholeness (Falco and Lobo, 1980).

Rogers (1970) gives five fundamental assumptions that underlie her conceptual model. The first assumption applies only to human beings. The other four assumptions that Rogers (1970) lists are relevant to all living systems. Those five assumptions that are foundational to this study are:

1. The unitary human being is characterized by the capacity for abstraction and imagery, language and thought, and sensation and emotion. That is, of all of the life forms on earth, only unitary human beings are sentient, thinking beings who grasp and process the vastness of the universe.

2. The unitary human being is a unified whole possessing its own integrity and manifesting characteristics that are more than and different from the sum of its parts. The whole unitary human being possesses a distinctiveness that is not accountable from an inventory of the parts and subsystems. "Because of this wholeness, the individual's

life process is a dynamic course that is continuous, creative, evolutionary, and uncertain, resulting in highly variable and constantly changing patterning and organization" (Falco and Lobo, 1980, p. 166).

3. The unitary human being and the environment are continuously exchanging matter and energy with each another. In other words, the individual and the environment are open systems.

4. The life process evolves irreversibly and unidirectionally along the space-time continuum. "Consequently, the individual can never go backwards or be something he [sic] previously was. At any given point in time, then, the individual is the expression of the totality of events present at that given time" (Falco and Lobo, 1980, p. 167). Therefore, evolution is a basic premise of this assumption of the conceptual model that Rogers (1970) provides.

5. Pattern and organization identify the unitary human being and reflect its innovative wholeness. Creativity is inherent in this assumption of the conceptual model. Further, the pattern and organization make room for self-regulation, rhythmicity, dynamism, diversity, and unity.

Research Assumptions

The research assumptions associated with the qualitative methodology of the study are:

1. A fundamental research assumption is that reality is "a multiple set of mental constructions" (Lincoln and Guba, 1985, p. 295).
2. Naturalistic research requires that the researcher immerse herself in the research project as opposed to remaining objective and aloof (Tesch, 1980).
3. All data are context specific (Burns, 1989).
4. Through theoretical assertions generalizations occur abstractly (Burns, 1989).
5. There are multiple layers of reality (Burns, 1989).
6. Reality changes across time (Burns, 1989).
7. Reality exists as expressed by human beings (Rogers, 1980).
8. The meanings of events are the most important things to be understood (Burns, 1989).

Research Question

The research question of this study is: What is the lived experience of menstrual synchronization from the perspective of women who have experienced it?

Definition of Terms

1. Meaning

a. Theoretical: that which is perceived to be the ontological significance of experience and personal knowledge of individuals within the social and cultural context. "Meaning is thus constituted as an intersubjective phenomenon" (Schutz, 1967, p. 32, [italics deleted]).

b. Operational: that which is conveyed through language and symbols about the experience of the phenomenon of menstrual synchronization.

2. Menstrual Synchronization

a. Theoretical: a social situation, women in close association over time, which influences a complex process, the menstrual cycle.

b. Operational: the phenomenon of a significant coming together closer of the dates of the onset of menstrual cycles among or between women who have been or are in close physical, emotional, social, spiritual, sexual, or intellectual association.

3. Perspective of women

a. Theoretical: the unique point of view of the individual experiencing, human adult females.

b. Operational: the narrative accounts of human

adult females, derived from in-depth interviews, regarding the experience of the phenomenon of menstrual synchronization, arranged in an organizational scheme that is expressed in story form (Polkinghorne, 1988).

4. Lived experience

a. Theoretical: "is the 'originary' way in which we perceive reality.... an awareness of things and ourselves which are immediate, direct, and nonabstractive. We 'live through' (erleben) life with an intimate sense of its concrete, qualitative features and myriad patterns, meanings, values, and relations" (Ermarth, 1978, p. 97).

b. Operational: the transcribed narrative accounts of the interviews conducted with the study participants and verified by the study participants which provides a description of the experiences concerning the phenomenon of menstrual synchronization.

Limitations

The following limitations may be inherent in the study:

1. The use of purposeful and nonrandom sampling limits the generalizability of the results to the population studied. That is, the findings of the study are only valid for the participants who were interviewed at a particular geographical and chronological location. No attempts were made to vary the demographics of the sample population.

2. There is conflicting evidence regarding validity and reliability with the use of self-reports, via a loosely structured interview schedule (Laing, 1988).

3. An additional limitation of this study is that cultural differences may cause data to be misinterpreted. Data are subject to observer obtrusiveness and effects (Marshall and Rossman, 1989). I took some steps to counteract these limitations.

A very compact audio-recording device was used to document the interviews. All of the participants knew beforehand that audiotaping was essential. After initially performing a sound check, neither I nor the participants seemed to notice its presence during the interviews. As suggested by Laing (1988), I looked at the caliber of the questions, the data collection instruments, and procedures used for collecting and analyzing the data; I decided that the self-reported data was trustworthy. Some additional criteria put forth by Osberg (1989), which add to the validity of the study, are: through both verbal and written means the participants understood the topic and questions, the participants had previously or were now experiencing the phenomenon of concern, and the respondents were willing and motivated to give suitable information.

In addition, the data analysis process, following Coliazzi's (1978) technique, minimized my bias but garners a

full illumination of the phenomenon, menstrual synchronization. Over a 10-month period I listened to and read the transcribed interviews many, many times for the purposes of reflection and verification. An elemental synthesis of the data created the description of the phenomenon of menstrual synchronization.

The use of a sophisticated computerized program preserved the richness of the data despite the volume of the narrative descriptions. Ways of ensuring credibility are as follows (and see in Chapter III, "Credibility, Transferability, Dependability and Confirmability"): data that contain related and contrary cases are included, most of the participants read the prototype and verified that the descriptions of menstrual synchronization fit them, two nursing consultants checked my coding of the data, and a nursing consultant read the experience Chapter IV and said that it was very understandable and captured the experience of menstrual synchronization.

Summary

The background for the study was presented in this chapter. It included the statement of the problem, the rationale for the study, the theoretical framework, assumptions, definitions, and the limitations. Chapter II addresses the review of the pertinent literature.

CHAPTER II

REVIEW OF THE LITERATURE

The theoretical, empirical, and narrative supports for synchronicity and its bearing on the phenomenon of menstrual synchronization are presented in this chapter. Following definitions of synchronicity, the discussion regarding synchronicity includes views ranging from philosophy and literature to myth and legend. Studies from anthropology, psychology and medicine follow.

Definitions

"Synchronicity itself implies wholeness and, therefore, meaningful relationships between causally unconnected events" (Combs and Holland, 1990, p. xxiii). A philosophical definition of synchronicity is: "Synchronicity may be defined as simultaneity plus connection by meaning in contrast to synchronous events which only coincide in time" (Fraser, 1981, p. 223). Fraser (1981) presents the philosophical attempts to find a notion of synchronicity. These range from the writings of natural Chinese philosophy

to Carl G. Jung and other contemporary thinkers, working in the domains of linguistics, dreams, and mathematics.

During a lecture in 1951, Carl G. Jung, a Swiss psychologist, introduced the term and concept "synchronicity." He defined it at that time as "a meaningful coincidence of two or more events, where something other than the probability of chance is involved" (1969, p. 520). He later defined synchronicity as "the simultaneous occurrence of a certain psychic state with one or more external events which appear as meaningful parallels to the momentary subjective state--and, in certain cases, vice versa" (1969, p. 441). Jung believed that the phenomenon of synchronization was related to unconscious processes.

Further he stated,

I chose this term because the simultaneous occurrence of two meaningful but not causally connected events seemed to me to be an essential criterion. I am therefore using the general concept of synchronicity in the special sense of a coincidence in time of two or more causally unrelated events which have the same or a similar meaning, in contrast to "synchronism," which simply means the simultaneous occurrence of two events (1969, p. 441).

In Jung's definition there are three important facets: (1) coincidence in time, (2) causally unrelated events, and (3) same or similar meaning. Jung defines synchronicity precisely and it has no other uses. The third chapter of

Jung's book, The Structure and Dynamics of the Psyche (1969), is on synchronicity.

The person involved assigns the meaning. Slater (1992) tends to agree. "The defining attributes of synchronicity are a connection between two events that had no discernible cause, but the person involved gives the connection meaning" (Slater, 1992, p. 23). A person may merely acknowledge that a synchronistic event has taken place, as suggested by Redfield (1993). Or the consequence of the experience may be to change, as suggested by Jung (1973) with the story of his psychologically blocked patient. An indigenous type of golden scarab beetle was tapping at Jung's office window at the very same moment a client was retelling a dream. This client had been grappling with the idea of self-transformation and rebirth. Jung wrote that the scarab is a classic symbol of birth. An actual beetle flew in then, the client's psychological blocks shifted, and she moved on in her therapy.

Another example of synchronicity cited by Slater (1992) illuminates Jung's meaning of synchronicity. She retells a story that relates that when one hears an owl call one's name, one will die. As Slater notes, the owl calling one's name and one's dying are not related. The synchronistic phenomenon is the owl calling one's name and the person's dying. This is because there is the meaningful coincidence

of the person dying after hearing the owl call her or his name. "The meaning is attached by the listener, in this case, that one's death will follow soon after the owl's call" (Slater, 1992, p. 21).

In his compendium of synchronistic experiences, Alan Vaughan (1979), a well known parapsychologist, defines synchronicity as follows: "[akin to synchronous, G. syn, with + chronos, time) n 1:] A term coined by the Swiss psychologist C. G. Jung to describe acausal meaningful coincidence. As examples, Jung cited extrasensory perception, psychokinesis, oracle-consulting techniques, astrological horoscopes, prophetic dreams, déjà vu, unconscious foreknowledge, omens and number series. Synchronicity shows an acausal connecting principle in nature, of equal importance to physical causality. 2: A meaningful coincidence" (pp. 3 - 4). From still another perspective, Mary Daly (1987), a noted expert on feminist theory, coined the term "syn-crone-icities." She says that it is a noun which means "'coincidences' experienced and recognized by Crones as Strangely significant" (p. 170).

Philosophy, History and Literature

"The first detailed investigations of what we today call synchronicity were undertaken early in this century by the Austrian biologist Paul Kammerer. He approached

meaningful coincidences strictly as objective physical phenomena" (Combs and Holland, 1990, p. 3). Kammerer believed that he discovered a new law of nature which was an acausal organizing principle. He called it the "law of the series" (Kammerer, 1919, p. 4).

The influence of the moon on the synchronization of women's menstrual cycles is a frequent subject in literature. "Menstruation" comes from the Latin term "mens", which means the month, which in turn comes from the word moon (Shuttle and Redgrove, 1978). "There are reasons why the Moon and women are associated. The similarity between the lengths of an average menstrual cycle and one lunation is a very visible reason" (Farias, 1988, p. 3). Mens is also the root of the following words: mensuration (measuring), dimension, immensity, metric, diameter, and many others (Shuttle and Redgrove, 1978).

In the first century Pliny the Elder said that if an eclipse and menstruation coincide that the resulting evil would be hopeless (Shuttle and Redgrove, 1978). Soranus of Ephesus constructed a theory which accounted for the phenomenon of women menstruating simultaneously (Delaney et al., 1976). In 1704, Richard Mead, His Majesty King George's physician, noted that the moon influenced the synchronization of women's menstrual cycles (Fluhmann, 1956). According to Boulding (1976), women living

equidistantly from the North and South poles generally ovulate together during the full moon. She thinks that this is due to the progression of the earth at the equator which is therefore closer to the moon. In contrast to Boulding, Jung (1969) states that a "relation which no doubt exists between the human menstruation period and the course of the moon is connected with the latter only numerically and does not really coincide with it. Nor has it ever been proved that it ever did" (p. 21).

Also, Fraser (1981) discusses examples of synchronicity found in literature. He cites two specific stories by Thornton Wilder. The Chinese prefer to view history in terms of how events happen together in time instead of as causal chains of things. Jung wrote the forward to the Richard Wilhelm translation of China's ancient tome, The I Ching or Book of Changes (1967). "It is with the I Ching that the Chinese view of synchronicity reached its most advanced philosophical form" (Peat, 1987, p. 133).

Myth and Legend

Fascination with the moon and the coincidence of its cycle with the length of a woman's cycle lends itself to poetic description. Paraphrasing, Luisa Francia (1988) puts it this way:

Waxing moon is growth, time to learn, listen, and feel. Dawn reddens the sky, day begins, the moon is waxing. The animal of the waxing moon menstruation is the raven, who stands for the transference of knowledge and embodies the flight of the soul. Persephone, the goddess who walked the path to the underworld and was initiated into womanly bleeding, is the guardian of this menstrual phase.

The full moon is vitality: time to make changes, decisions, show one's power, bring something into being, and work politically. The animal of the full moon menstruation is the phoenix. Ishtar, the Red Goddess of Babylon, is the guardian of this menstrual fire.

The waning moon has dwindled. Now is the time for persistence and for making reality out of visions and impulse. The sun sets, darkness settles, and the sky fills with the light of countless universes. The animal of this waning moon menstruation is the she-bear, who, in old myths is the womb. The goddess of this time, Demeter, is responsible for the cycles of life on earth and letting the fruits and grains ripen for harvest. In preparation for the next cycle, she'll withdraw to tend to her own nourishment, letting the earth become barren while she mourns her daughter.

The new moon is the hidden moon, dark and mysterious. The new moon is the pull inward. During this time, anxieties, memories, and experiences may rise, ready to be dealt with. Midnight: darkness at its fullest, a velvet ocean, a watery womb of all life, the moon is new. The animal of the new moon menstruation is the toad, with all her knowledge, her ability to be quite alone, and her protective exterior. The goddess of this time is Hecate, the woman at the joining of three roads [also called tri-via], the guardian of mysteries and knowledge, the reaper, the dark one, the crone.

Most, if not all, magical myths and fairy tales revolve around ritualism associated with initiation, and as a result menstrual symbolism, among other things (Knight, 1991). "We have quoted evidence that Shamanism was originally a female practice, linked to Moon, and therefore menstrual, cults"

(Shuttle and Redgrove, 1978, p. 197). Typically connected are the myths associated with women concerning menstruation and menstrual blood and fertility, the bearing both of children, and of the fruits of the earth. This is a principle source of goddess worship.

Some claim the moon was so powerful that all women menstruated together. All children of Denmark were said to be born the first week after solstice. Naertus, the Ancient Mother Goddess, was originally conceived in Scandinavia some 2,000 to 5,000 years ago. This was a time when her powers were still so great that all human events were synchronized perfectly with the cosmos (Musawa, 1993). According to Sjöo and Mor (1991), evidently all women bled regularly once a month and together in synchrony with the new or dark moon. Shuttle and Redgrove (1978) suggest that early women learned to menstruate from the new moon. "Women's monthly cycle being seen as of the same duration as the moon's cycle, and women's bleeding synchronous (actually or legendarily) with the dark moon, it was easy to believe that the moon mother was bleeding also" (Sjöo and Mor, 1987, p. 150).

Besides the sacred or magical aspects of menstrual blood is the association of women with the cycles of the earth, fertility, and agriculture. Tales recount the moon withdrawing for the same reason as the human female, which is, to "have her period" (Shuttle and Redgrove, 1978, p.

184). It just so happens that the female menstrual cycle length is on average 29.5 days, which correlates with the length of time from one full moon to the next. Although a normal menstrual cycle may vary from 20 to more than 40 days, there are symbolic ways in which the moon cycles and menstrual cycles mirror each other, most notably in their waxing and waning (Farias, 1988).

Poems and other forms of imaginative literature give insight into the meaning of perceptions that are not obtainable through direct experience (Oiler, 1980). Roux (1994) gives this a practical application: "The importance of literary works to nursing is that they liberate the intuitive, connected knowledge of human responses. Literature links us through the timeless experience of others" (p. 86).

The emphasis, from earlier times, is often that menstrual cycles synchronize with the moon rather than with other women. The following lyrics by Lanyere Liggera (1976) express this idea.

I am older than this age
the moon calls forth my blood
Even as it rules the ocean tides.
I dream of ancient women
Who did not apologize
For their moon-stains
Or their way of living.
We pray their like
Will come on earth again (p. 76).

A poetic example of synchronicity is:

You go to the movies. Opening weekend. The only seat in the house is right next to someone you haven't seen in months--but who you've been meaning to call. Amazing? Nah.

See, you steered yourself through every variable of life for who-knows-how-long to that singular moment when you and your friend would meet. And likewise, your friend navigated an entirely other set of variables to that moment--and seemed to be waiting for you, to boot!

It's synchronicity, one of those undeniably adrenalistic stitches in the hem of this vast fabric in which we are a pattern.

Sure, some might dismiss the whole biz as coincidence. But they're only half-right. They've forgotten the power, the electricity, of thought. Synchronicity/electricity: Get it?

Just think a thought, and it's out there, floating about, available for any receiver. 'Course, you're a receiver; so am I. Or we would be, if we'd just turn ourselves on.

But no matter: Even when we're not turned on, synchronicity happens.

Watch for it. It's [A] a little cosmic reminder that it's time we turned on, and/or [B] simply proof that we have always been (Buchsbaum, 1993).

A lyrical example comes from the words to the song "Synchronicity I" by Sting (1983):

With one breath, with one flow
You will know
Synchronicity

A sleep trance, a dream dance,
A shared romance,

Synchronicity

A connecting principle,
 Linked to the invisible
 Almost imperceptible
 Something inexpressible.
 Science insusceptible
 Logic so inflexible
 Causally connectible
 Yet nothing is invincible

If we share this nightmare
 Then we can dream
 Spiritus mundi

If you act, as you think,
 The missing link,
 Synchronicity

We know you, they know me
 Extrasensory
 Synchronicity

A star fall, a phone call,
 It joins all,
 Synchronicity

It's so deep, it's so wide
 Your inside
 Synchronicity

Effect without a cause
 sub-atomic laws, scientific pause
 Synchronicity..... (track 1).

The word "fountain" used to have a central mystical meaning in the ancient matriarchal paradise. An upsurge of blood-water from the uterus of Mother Earth was the original connotation of the "Fountain of Life" at the time of creation; it was the source of the life force. From the Tantric tradition onward are suggestions that the source of

life was really menstrual blood (Walker, 1988). In paradise the Fountain of Eternal Youth allegedly welled up and overflowed once every lunar month (Baring-Gould, 1967).

In mythology and folklore evidence pointing to the connection--periodicity and the monthly bleeding--with the cyclicity of nature and the lunar phases of the moon exists. The continuing cycle of nature, (life-giving, transformation, dying, and self-renewing), is an obvious analogy to the preparation for and the possibility of potential new life or the monthly demise (Demetrakopoulos, 1983). It is also comparable to regeneration that is characteristic of the menstrual cycle. In part, Demetrakopoulos (1983) believes that women have a sense of death as a part of the cycle of life because of their experience of "the harmless and reassuring cycle of the blood from their own bodies" (p. 124). In Crete, ancient Greece, and other agricultural societies there is evidence that "women were able to maintain many of their ancient ritual festive celebrations, transferring the logic of lunar-menstrual symbolism to the annual cycle of growth and harvesting of crops" (Knight, 1992, p. 91).

According to Gimbutas (1989) there are three phases of the moon (i.e., new, waxing, and old). They are represented by the aspects of the Great Goddess known as Triple Goddesses, (e.g., the maiden-nymph-crone trinity), and the

"Triple Great Mother" or the "Triple Goddess, Demeter."

Images associated with the lunar cycle and the images of the Great Goddess suggest a philosophical connection between the regenerative role of the Goddess. That is, the cycles of birth, death, rebirth, and cyclical lunar time:

The deep perception of the periodicity of nature based on the cycles of the moon and the female body led to the creation of a strong belief in the immediate regeneration of life at the crisis of death. And there was no simple death, only death and regeneration (Gimbutas, 1989, p. 321).

According Jean Shinoda Bolen (1984), a Jungian analyst and psychiatrist, the Greek/Roman goddesses most associated with and influenced by the archetypal and hormonal shifts during every monthly menstrual cycle are: Artemis/Diana, Athena/Minerva, Demeter/Ceres, Hestia/Vesta, Hera/Juno and Persephone/Proserpina. Focusing on the six "major" goddesses, the Woolgers (1989) identify Demeter as the goddess connected with the ancient Earth Mother and the inner experience of the menstrual cycle. According to Farias (1988), most goddesses show a lunar (and menstrual) side. To paraphrase Farias:

Even Aphrodite, the most solar of the Greek goddesses, enjoyed a lesser-known duality with Persephone, where Aphrodite represented the full moon and Persephone the dark or new moon. Both were represented with

pomegranates, the emblem both of female fertility and blood, and of the Underworld--which might be death, or the underworld of dreams, trance or depression. Both the full (ovular) and the dark (menstrual) moons have their own source of creativity-fertility. The pomegranate is also the fruit of lunar Hera, who in herself personified all the phases of the moon. Sappho said that Hecate, the moon goddess most often associated with the dark or new moon, served Aphrodite, goddess of love, fertility, beauty, and woman's body.

Ancient sisterhoods, the Sibylline College and the College of Hera in Greece, were institutions for "studying the Moon's phases and relating them to changes within one's own body" (Shuttle and Redgrove, 1978, p. 155). Further, Farias (1988) says that the Thesmophorian and the Eleusinian Mysteries, which lasted in Greece for more than 2,000 years, originated in women's monthly rites celebrating the menstrual cycle. They also probably originated as women's initiation ceremonies where girls at the onset of their first menstrual cycles became women. The word menarche means "first moon" (Farias, 1988, p. 4).

According to Chinese myth the goddess Chang-O guards menstrual blood (Francia, 1988). Francia describes how men attacked Chang-O when she lived on earth. This was because "they envied her bleeding, for it meant that she possessed the power of life, death, and rebirth, and these were mysteries to them" (p. 38). Therefore, Chang-O withdrew to the moon and now in China only women celebrate the full

moon. The goddess who manifests on the wind and in the clouds in Tibetan Buddhism is the Dakini. The Dakini rules synchronicity and magical phenomenon (Orenstein, 1993). Hermes, a Greek god, is the master of boundaries, the god of thresholds, psychological transformations, travel, and of synchronicity (Combs and Holland, 1990). Like Dakini, Hermes guides souls from the material to the other world. Pelton (1980), a student of African culture and a Canadian priest, refers to the trickster god of the Ashanti people of West Africa as "pure synchronicity," much like Hermes (Combs & Holland, 1990).

Anthropology

There are two contrasting themes in human perception of the menstrual cycle: holy and sacred versus unclean and taboo. Also the question is raised whether judgments that are negative result from male attempts to dominate society.

In her book on the time when menarche was celebrated and menstruation was recognized as a mark of female power, Grahn (1993) speaks of how this is manifested today and in the multiple ways menstruation makes us human. She says, "when the females evolved a menstrual cycle capable of synchronous rhythm" (p. 13) an externally based mind was acquired by early humans. Entrainment, the quality of the merging and synchronization of two similarly timed beats (as

with drumming or heart muscle tissue), accounts for the linking of women's menstrual cycles and the cycles of the moon. Grahn (1993) also claims that the menstrual cycle among women cohabiting, and in similar situations, can become spontaneously synchronized. Further, she says that the same thing will happen in the presence of any light source that mimics the cycles of the moon.

Most Native American traditions teach that the so-called "moon blood" of women is clean, powerful, and a sign of the sacred life force. The Navajo American Indian ceremony at menarche, Kinaalda, is an elaborate menarcheal ceremony. At this time a girl becomes "Changing Woman," a most important deity (Shange, 1982). Once a year the Mescalero Apaches hold an extensive celebration to commemorate the menarche of all the girls who started their menstrual cycles during the past year. "It is the most important ceremony of these people, and they believe that it insures their survival" (Taylor, 1988, p. 12). The Pygmies of Central Africa also celebrate the onset of menstruation. Menstrual blood is perceived as a gift by all (Turnbull, 1961). In Japan families hold a small party for friends and family when a daughter begins her menstrual cycle (Taylor, 1988).

The contradictory aspect between the sacred and the unclean is exemplified by the word "taboo." Walker (1988)

says it is from the Polynesian word "tupua." Applied specifically to menstrual blood, its usage is sacred or magical (Walker, 1988). However, in the recorded history of most religions, cultures, and societies, with few notable exceptions, menstruating women were considered unclean and thus involuntarily or "voluntarily" separated from the community.

Job demanded in the Old Testament (Revised Standard Version), "How can he be clean that is born of woman?" The Hebrew dictum was inherited by Christians and Moslems and is used to perpetrate the inferior position of women among them. According to Fisher (1979):

...the reason Judeo-Christian religion finds menstruation disgusting, unclean, is because it is a reminder of the life of the body and the supremacy of women giving birth. This represents what [anthropologist Joseph] Campbell calls "patriarchal inversion," the need to belittle and demean what was formerly considered sacred and awe-inspiring (p. 157).

In the Hebrew tradition, menstrual blood is viewed as a contaminant at best and evil at worst. Orthodox Jewish women still observe the Niddah laws which are comprised of verses from the Torah (Old Testament). These laws stipulate a state of separation for menstruating women. In Song of Solomon (Revised Standard Version), a young virgin is "a fountain sealed." Leviticus decrees that a man must never lie with a

menstruating woman because "he hath discovered her fountain, and she hath uncovered the fountain of her blood." Kosher Jewish laws prohibit the eating of blood.

Knight (1983) cites a predecessor who said that in "primitive communities" women were secluded by men as "the consequence of the awe inspired by the phenomenon of periodicity" (p. 28). Knight wonders if the Australian men secluded women from each other because if they did not do so the women might otherwise "begin to synchronise [sic], to connect up in a collective 'rhythm' or 'dance' over which men would have no control" (p. 28). In some cultures, at the onset of menstruation some girls are severely beaten (Taylor, 1988), ritually circumcised, excised, or infibulated (Delaney et al., 1976), or are locked in a small and dark cage (Shuttle and Redgrove, 1978). Many cultures believe that menstrual blood will contaminate men and food. Harvesting food is prohibited for some indigenous Australian women and menstruating women may not go near young plants on one of the New Hebrides islands (Delaney et al., 1976). Pliny said that menstrual blood would cause fruit to fall from trees (Weideger, 1975).

Teish (1985) explains that menstrual "taboos that were originally holy and self-imposed have become accursed and oppressive under hemophobic male domination" (xi). Taylor (1988) holds that the menstrual taboo is present in modern

times for the following reasons: the relation of menstruation to the moon because of fears related to the cyclical nature of menstruation, the fact that men do not menstruate, and the association of blood with birth and death (i.e., the fact that menstruation is nonvoluntary.) The Curse--A Cultural History of Menstruation by Delaney et al., (1976) gives a lengthy treatise on the history of the menstrual taboo.

There are two interpretive challenges to this prevailing view of the menstrual taboo. The first challenge holds that there was a time when menstruating women and menstrual blood, considered unclean, were simultaneously valued. Demetrakopoulos (1983) states that the elements associated with feminine principles are water, earth, and salt. She expands this to assert that "the element of blood is central to (and perhaps the sum of) the feminine" (p. 124). Therefore blood is, at least tacitly, an amalgam of water, earth, and salt. In prepatriarchal times menstruating women were thought to be in a desired state of awareness and wisdom, and to possess incredible supernatural power. Menstruating women went into voluntary seclusion (i.e., into menstrual huts and lodges) alone or in groups to rest, rejuvenate, receive visions, and produce profound ideas (Noble, 1992). "Even when women are shut up in isolated menstrual houses, they have been put there out of fear of

their immense 'dangerous' power--something men are so afraid of that they seek to overcome it by atomizing women during their periods" (Knight, 1991, p. 91).

A second challenge comes from Chris Knight (1991), an English social anthropologist, who argues that women originated the menstrual taboo. He thinks that it is not a tool for oppressing women devised by men. Knight's work is expanded from findings in sociobiology that are concerned with the origins and evolution of human female reproductive physiology. Knight postulates that approximately 40,000 to 70,000 years ago, through a collective evolutionary process connected with obtaining food and not being taken for granted by men, women went on sexual strikes by all becoming menstrually synchronized.

There are very few anthropological studies regarding menstrual synchrony. During two studies Knight (1983, 1988) analyzes icons, engravings and myths from Australia, cites anthropological literature from other cultural areas, and speculates that women in cultures all around the globe experience menstrual synchrony. Other anthropologists, such as Shostak (1983) and Buckley (1988), provide symbolic-anecdotal ethnographic evidence of the phenomenon of menstrual synchrony. In Yurok culture, according to Montgomery (1974), menstruating women bathe and perform spiritual rituals in a sacred pond illuminated by the moon.

In so doing, Yurok women note that the earth has her own cycles (Montgomery, 1974). Also, the Yurok women who are not pregnant live together and menstruate at the same time in keeping with the moon. Furthermore, if a woman did become unsynchronous then she would sit in the moonlight and ask it to balance her so as to become synchronous.

The Australian aborigines have a deity called Rainbow Snake. As legend would have it, two sisters were the first ones to be swallowed by Rainbow Snake. Just prior to this taking place the older sister was giving birth. While waiting for the placenta the younger one started to dance during which time she started her menstrual cycle. Suddenly, Rainbow Snake emerged from the water hole and wrapped itself around the newborn child and both sisters. Knight (1988) has proposed that this legend is an instance of menstrual synchrony which is very central to the Australian aborigines. Most rituals are based on menstrual cycle phenomenon and it is the focus of women's cats-cradle games among these people (Knight, 1988). It is interesting that the image of the Greek god of synchronicity, Hermes, is a caduceus, a staff of intertwined snakes (Burkert, 1985).

As is true with most anthropological studies concerning menstrual synchrony, Strassmann (1991) studied a non-Western culture. This extensive longitudinal study of the non-contracepting Dogon of Mali found that during menstruation

Dogon women sleep in a menstrual hut and, among other things, there was no evidence for menstrual synchrony. She suggests that since the tests for menstrual synchrony gave no evidence for the phenomenon of menstrual synchrony, it must not be adaptive, which is contrary to the beliefs of Knight (1991).

Medicine and Psychology

The theoretical framework of Carl Jung related to menstrual synchronization is presented above and in Chapter I. Medically, menstrual synchrony was first noted by McClintock (1971). She found, over a seven-month period, that the menstrual cycles of all female college-aged room mates became increasingly synchronized. These findings were subsequently confirmed in mixed-sexed contexts in both Europe and North America (Graham and McGrew, 1980; Quadagno et al., 1979; Friedman, 1980). Skandhan et al., (1979) also documented the phenomenon of menstrual synchrony among an Indian population comprised of 127 hostel residents as compared to nonresident subjects. McClintock (1981) later observed that there is a similarity of the parameters of among the above cited studies regarding menstrual synchrony.

Wilson (1988) suggests that the research regarding menstrual synchrony is methodologically flawed yet much of the research suggests that physical proximity is the common

thread across these studies. But it has not been established if time spent together decides the extent of synchrony between close friends (Graham and McGrew, 1980). Triedman (1980) found that room mates who spent fewer than eight hours in close proximity did not exhibit a significant trend toward menstrual synchrony. Jarett (1984) identified factors, such as the use of sanitary napkins and long menstrual flow, which predicted individual differences in menstrual synchrony. Jarett (1984) also provided a report of a lack of menstrual synchrony among women who were close friends and women who were in close physical proximity. Another study which looked for menstrual synchrony in 29 cohabiting lesbian couples (aged 22-48 years) did not find evidence of convergence of the onset of menstruation dates (Trevathan et al., 1993).

Graham and McGrew (1992) explored the ways in which a common environment, social interaction, and the use of deodorants and perfume affect the phenomenon of menstrual synchrony. They reported that closeness of a relationship was the most significant factor in connection with more synchronous menstrual cycles. However, a study by Russell et al. (1980) found that a female who did not use deodorants or perfume was the catalyst for synchronous menstrual cycles among a group of women. It is not known if one female "leads" others or if there is a mutual shift in timing

(McClintock, 1981). Although the mechanisms underlying the phenomenon of menstrual synchrony are not yet identified, most researchers hold that physical proximity is a key factor.

Physical proximity also accounts for the notion that pheromones are the main variables influencing the phenomenon of menstrual synchrony. Pheromones are secretions that an individual produces which might cause a specific reaction in another person (Skandhan et al., 1979). Scents and the olfactory system may influence human behavior to a significant degree. Pheromonal communication between ovulating or menstruating women, women and men, and premenopausal and postmenopausal women may be involved in menstrual synchrony. Additionally, other factors such as contact with males, frequency of intercourse, and the nature of the relationship of women living in close proximity may affect the nature of menstrual synchrony. However, errors in the protocol in the study of the influence of female axillary secretions on menstrual synchrony were later acknowledged (Preti, 1987). Two articles, one by Doty (1981) and the other by Rogel (1978), critically examined the possibility that pheromones can explain menstrual synchrony. Rogel concluded that it is unlikely that pheromones play a significant role in this area. Doty claimed that the available studies were methodologically inadequate to make

the claim that pheromones produce menstrual synchrony.

In a later work Graham (1991) discussed the possible factors and mechanisms affecting menstrual synchrony, defined as when the menstrual onset of women shifts progressively together in time. She identified the possible factors as the amount of time spent together, stress, interaction with males, and personality. The possible mechanisms underlying menstrual synchrony, according to Graham (1991), were: (1) the sharing of a common environment (which involves similar eating and sleeping patterns as well as shared stress periods) and (2) the interaction between individual hormonal status, social factors, and pheromonal communication.

Weller and Weller (1993) investigated menstrual synchrony between mothers and daughters and between room mates. They found that mothers and daughters (mean age 18.7) living in the same home experienced a significant degree of menstrual synchrony. Room mates, whether living in the same room of a private residence (mean age 23.2), or sharing a room in a dormitory (mean age 21.8), became relatively synchronous regarding the onset of their menstrual cycles. Previously, Weller and Weller (1992) hypothesized that cohabiting women experienced menstrual synchrony through pheromonal mechanisms, social factors (e.g., mutual activities and friendship) and menstrual regularity. Twenty

couples of lesbian women (aged 19 to 34 years) were studied and menstrual synchrony was determined by comparing the frequency of intracouple differences in onset dates with the expected frequencies. They found that significantly half the participants menstruated within two days of their partners. Jarett (1984), via monthly menstrual calendars, a questionnaire, and a personality tool found that biological (i.e., cycle length and cycle regularity), personality (i.e., social desirability), and psychosocial (e.g., backgrounds and social habits) factors could predict individual differences as far as menstrual synchrony was concerned. Out of the 170 undergraduate participants, 86 did not significantly experience menstrual synchrony.

In the discipline of veterinary medicine, various studies exist (e.g., Cornwell, 1990, Kabadi, 1985 and Washburn, 1986) that discuss the use of synthetic hormones and estrus synchrony for breeding control. Other studies discuss the synchrony of spawning in fish (Tyler, 1992). They are not germane to this study. Graham (1991) notes that menstrual synchrony (and suppression) have been observed in mammals such as rats, certain baboons, and captive-living chimpanzees.

Summary

This chapter has reviewed the literature germane to the phenomenon of menstrual synchrony and menstrual synchronization. Not one study was found which documented the experience of the phenomenon of menstrual synchronization from the perspective of women. Chapter III addresses the procedure for collection and treatment of the data for this study.

CHAPTER III

METHODOLOGY

Specifically, the purpose of this study was to understand the lived experience of women who were aware of an instance of a "meaningful coincidence" (Jung, 1955). This instance was the phenomenon of menstrual synchronization and I sought to understand how this affected women who had experienced this phenomenon. Rather than looking to the biomedical model, or another authority, this study aimed to find "answers" about menstrual synchronization from the perspective of women who had experienced the phenomenon. This study was to:

... understand everyday skills, practices, and experiences; to find commonalities in meanings, skills, practices and embodied experiences; and to find exemplars or paradigm cases that embody the meanings of everyday practices in such a way that they are not destroyed, distorted, decontextualized, trivialized, or sentimentalized (Benner, 1985, pp. 5 - 6).

This chapter discusses the methods and procedures used in the study. It includes the design, naturalistic setting

used for data collection, the description of the participants, the procedures used in the protection of the rights of participants, the instruments, the data collection procedures, the treatment of the data, as well as the credibility, transferability, dependability, and confirmability concerns and strategies. The issues surrounding these concerns and strategies are summed up by the following quotation from Marshall and Rossman (1989):

The strength of the qualitative study that aims to explore a problem or describe a setting, a process, a social group, or a pattern of interaction will be its validity. An in-depth description showing the complexities of variables and interactions will be so embedded with data derived from the setting that it cannot help but be valid. Within the parameters of that setting, population, and theoretical framework, the research will be valid. A qualitative researcher must therefore adequately state those parameters (p. 145).

Design

A qualitative and naturalistic approach was used in the study. I used phenomenological research, a human science approach. In searching for meaning, phenomenological research makes sense of the world and comes to knowledge through describing and interpreting subjective experience. Phenomenological research was appropriate for this study because it revealed the essence of experience and not merely a changed point of view. Therefore, the meaning of this

phenomenon was to be grasped via the perceptions of the reality of the respondents. This human product, assigned meaning, is the benchmark by which to judge science, literature, and art (Polkinghorne, 1983). My goal was to represent reality as it had been constructed by the women in the study sample. This constructed reality emanated from the experiences of the participants in this study. The depths of everyday experience were plumbed with the phenomenological research approach because it best evoked and described the meanings of menstrual synchronization from the perspective of the women who experienced it. This study aimed at more deeply grasping the reality and knowledge of women themselves.

Qualitative designs are by nature naturalistic in that no attempt is made to manipulate the respondents or their setting. In this phenomenological research the purpose of the research was exploratory and the procedure was descriptive (Tesch, 1980). The phenomenological research was free of suppositions and took a holistic approach to study a phenomenon of concern. It sought to gain insight through the discovery of meaning (Tesch, 1980). "Phenomenology is particularly appropriate for the sciences when humanness and connection with the world are the point of inquiry" (Parse et al., 1985, p. 16). In short, this study was interactional-descriptive in that it investigated the

various structures of the human experience of the participants regarding menstrual synchronization.

Naturalistic Setting

The time and place of the initial interview were determined by each participant. Most of the first interviews took place at restaurants in Albuquerque, New Mexico. One interview took place in a suburb of Dallas, Texas, and another one was conducted in Little Rock, Arkansas. On three occasions, the interviews took place in each of the participant's own homes. I made available private office space for an informant who so chose. The rest of the interviews were done in Espanola, New Mexico.

Participants

The characteristics of the target population directed the selection of the sample for this study. Snowball or chain sampling was used to obtain purposeful, nonrandom, and information-rich informants (Morse, 1986; Patton, 1987) for study. The goal was to acquire a so-called qualitative isomorph of the population to which the sample results could be generalized (Ford, 1975). Ford suggests that the best way to arrive at a qualitative isomorph is to employ snowball sampling. This theoretical (Glaser and Strauss, 1967; Patton, 1980) or interactional sampling (Ford, 1975)

depended on adhering to specific steps about purposeful samples that helped to reach the point of redundancy. At that point I gained understanding, obtained coherence, and located negative cases (Lincoln and Guba, 1985; Morse, 1986; Patton, 1980). It was not possible to state in advance with any absolute certainty the size of the sample for the study. Continued sample selection was, in part, dependent upon the findings that emerged during the study, as discussed by Sandelowski (1986). However, the dissertation committee decided that I would interview at least 12 women, but no more than 25, in order to approach meeting the criteria. However, "There are no guidelines for determining the size of purposeful samples" (Patton, 1987, p. 58).

The respondents represented a range of demographic variables. The sampling procedures completed the theoretical and practical sampling framework presented above. Fortunately, it ended at the point called "informational redundancy" (Lincoln and Guba, 1985, p. 202), when no new information was obtained from the interviewees. A total of 13 women between the ages of 25 and 46, participated in this study. After the 11th interview, the subsequent interviews provided no new information. Voluntary participation was mandatory for this convenience sample. None of these interviews took place without first obtaining voluntary informed consent following the verbal and written

explanation of the study purposes and objectives.

Several methods of seeking possible participants were available. Among the feasible ways for me to locate women for the study would have been advertisements, notices, announcements, friendship networks, bookstores, athletic teams, social and political organizations, professional contacts, and word-of-mouth. As it turned out, word-of-mouth was how I obtained all of the qualified and interested participants for my study. I spoke with friends and colleagues about the study and by that obtained potential participants for the study. One friend in particular supplied me with a list of names after she had personally spoken to each woman on the list about my study. Usually I called each potential participant and then sent an introductory letter with additional information. I placed a second telephone call to arrange a time and place to do the initial face-to-face interview. After some of the interviews participants called friends of theirs who then became candidates for the investigation. This process was in keeping with snowball sampling. The more persons I talked with about the study the more names, of potentially information-rich respondents, came my way.

I was not personally acquainted with any of the women who were interviewed. Once I had potential participants, I screened them for appropriateness and willingness to invest

the energy and time necessary for participation. Usually I made these assessments during a telephone interview. Before making the telephone call, however, the individual who identified the potential respondent had told the respondent something about me and about the study. This gave the potential respondent some familiarity and credibility with me before I called. I also hoped that this would create some preliminary trust and enhance the chances of participation. Out of 23 legitimate potential participants, I obtained 13 participants who were appropriate, able, and willing to put forth the time and effort to participate in the study.

In order to work with as homogeneous a group as possible, these participants had or were having the experience of menstrual synchronization. This was in keeping with Coliazzi's (1978) criterion that participants in phenomenological research must have lived the specific phenomenon of study. They were not postmenopausal and were all over the biological age of 25 and not older than the age of 46. Initially, I had set the age range to be from 25 to 45. This age bracketing was arbitrary. I elected to do one last interview with a woman who had and was currently experiencing menstrual synchronization, and she met all of the criteria, except being age 46.

I wanted to interview women who were older than those college-aged women who were in the previously cited

quantitative studies. This age limitation gave a specific population and allowed for a more focused study; no doubt the older women contributed valuable insights. Further, I wanted to eliminate developmental issues that would have been present with a younger or older group. In short, the women in this study had been or were in any combination of close physical, emotional, social, vocational, professional, spiritual, psychic, sexual, and intellectual association with a woman or among other women.

Originally I had said that the women who participated in this study would have been in close association for at least 3 months. When some respondents thought about their experiences with menstrual synchronization they recalled having had the experience after much less contact. Therefore, I began to include the experience of women even if they did not strictly meet the 3-month criterion. The important point was that the women had the experience of a significant coming together closer of the dates of the onset of their menstrual cycles in a meaningful way. For this study each woman was initially interviewed face-to-face for approximately 1 hour. In the case where I interviewed two women who were in a relationship with each other, I asked each of them not to discuss their respective interviews with the other member of the couple. I did this for two reasons: to keep confidentiality and to avoid bias in the findings.

As with all of the interviews, I emphasized that each interview was private and confidential. Because Participant 03 was acquainted with both Participant 01 and Participant 02, I asked her not to discuss the interviews with them. She agreed and had moved to another state before the second interview.

Protection of the Rights of Participants

Permission to conduct the study was obtained from the Human Subjects Review Committee of the Texas Woman's University. I did this after submission of the proposal, acceptance of the Prospectus for the study, and prior to initiation of the study (Appendix A).

Letters of introduction were given to the participants before beginning the interview sequence (Appendix B). The letters and forms described the study, including the need to tape record the interviews. They also explained their rights, served as a contract, and stipulated that what they said and shared was and would be private and confidential. The letters stated that they could withdraw from the study any time without repercussion. The documents also explained the benefit of participating in the study, which was to assist the discipline of nursing to better understand the health patterns of women.

As required by the Texas Woman's University Human

Subjects Review Committee, each respondent read and signed the consent forms before beginning the initial interview. These consents were the written consents, an adaptation of Form B, "Consent to Act as a Participant" (Appendix C) and an adaptation of Form C, "Consent to Tape Record" (Appendix D). I also verbally explained to each participant the purpose of the study, its expected benefit and possible risks, and provided assurance of confidentiality. Again, they were told that the interviews were to be audiotaped, transcribed, and coded by number only. I told each woman that any time she could stop the tape recorder, erase any material she did not want recorded, stop the interview any time without penalty, and that any identifying information that was on a tape was to be erased.

In the Prospectus I said that, barring any unforeseen problems, there would be only one transcriber. The individual with whom I had made initial arrangements decided she could not deliver the services needed so a professional service with bonded personnel typed the transcriptions. Anonymity was further assured as the bonded transcribers were told of the need for confidentiality of each participant and they signed and kept a copy of a confidentiality statement (Appendix E). The consultants also read, signed, and kept a copy of the confidentiality statement. Further, the names of the informants were not

listed. Tapes, forms, and transcripts were identified by number only. I was the only data collector for the study. I conducted and recorded each interview after obtaining the requisite signed consents to participate in the study. Unless the tapes were being transcribed by transcribers or listened by me, I kept them in a locked security box. Each tape will be destroyed 9 years after the completion of this study.

Instruments

The instruments that were used for data collection were: (1) a General Interview Guide (Appendix F, original form), (2) a written questionnaire (Appendix G), and (3) the interviewer.

The General Interview Guide

The General Interview Guide had interview prompts which served as reminders to me to cover areas of inquiry that I had not during the interview. After the first couple of interviews it was not necessary for me to use it. The General Interview Guide remained flexible throughout the study. That is, each interview was a possible source of questions to be asked in all subsequent interviews as informants introduced content that was germane to the study (Swanson-Kauffman, 1986). For example, I questioned the usefulness of the category regarding behavior because so

much of what women were telling me was ineffable and tacit. However, during the interview with Participant 07 it became clear to me how important it was to keep asking the questions about observable behaviors during the experience of menstrual synchronization.

The Questionnaire

Some particular information collected from respondents, (e.g., demographics, current living situation, and other related data), was obtained through the administration of a questionnaire (Appendix G). Participants completed the questionnaire after the interview was completed. During the first and following telephone conversations I told and reminded the participants that there would be a form to fill out at the end of the initial interview. I administered the questionnaire at the end of the interview so that questions and other concerns that might be raised could not bias the data. Participants were encouraged to fill all of the information that they were comfortable providing. The questionnaire was identified by number only.

The Interviewer

Obviously my interview skills were an important instrument in this study. As specified by Spiegelberg (1976), I embraced direct intuition as the wellspring of knowledge along with believing that philosophical knowledge can be gleaned through insight into essential structures. As

the investigator I served as a kind of instrument in the collection and analysis of data (Cassell, 1982; Guba and Lincoln, 1981). It was important to ask truly open-ended, clear, and singular questions (Patton, 1987), although at times I was more successful at that than others. "Statements volunteered are less likely to be influenced by the researcher's preconceived ideas" (Jacob, 1987, p. 31). I always emphasized with each participant that I did not want her to feel limited by the nature of my questions and that anything she thought might be relevant was. As long as responses were related to the topic of the study I considered them relevant. I viewed each woman as having expertise on the phenomenon of concern. It was equally important that I asked, when indicated, probing and follow-up questions and gave supportive and acknowledging responses (Patton, 1987). While developing rapport with each participant I maintained neutrality regarding the content of what the participant was saying (Patton, 1987).

A sequence of at least three interviews with each participant was planned. The initial interview was lengthy to probe deeply below the surface level of conversation to obtain detail and a "holistic understanding of the interviewee's point of view" (Patton, 1987, p. 108). The major purpose of the second interview was to review the accuracy and completeness of the transcription of the first

interview (Morse, 1989). I wanted to follow-up on leads that were discovered during the first analysis of the interview and to check out tentative conclusions. For most participants this was a short interview as there were only a few questions to ask. For others, this second interview was longer and more extensive, although focused on specific areas of concern. Besides a copy of the initial interview transcription, each participant received a customized letter asking specific questions and allowing for additional comments and thoughts. (For a sample of this letter, see Appendix H.) Interviewees were given the option of responding via mail or telephone for the second interview. All of the participants responded via the stamped, self-addressed materials.

The third interview was confirmatory in nature. This last interview involved a return to the field of inquiry to confirm the prototypical interpretive description of the phenomenon of menstrual synchronization. During the third interview, participants accepted my prototype of the phenomenon as descriptive of their own perspective and experience. I wrote up the prototype of the phenomenon of concern and sent each participant a copy with instructions to assess the descriptions in terms of their own experience (Appendix I). Of the 13 participants, I was only able to contact 11 for the final interview. One participant's

telephone number was disconnected with no forwarding information and another one did not return my telephone calls or letter. I also offered a follow-up session to meet and debrief with the respondents. The nature of this meeting was to share the aggregate analysis of the interviews and answer any questions that a participant might have had. One requested a follow-up meeting, which I provided, and two said that they would call me if they wanted to get together for a follow-up session.

Treatment of the Data

The interpretation of the data involved attaching significance and meaning to the analysis, "explaining descriptive patterns, and looking for relationships and linkages among the descriptive dimensions" (Patton, 1987, p. 144). The first step of the analysis was ordering the amorphous data into categories (Tesch, 1980). The initial depth interviews were audiotaped and then transcribed and phenomenologically analyzed. Immediately after each interview I wrote down pertinent notes and thoughts. In addition, the computer program into which I put the transcripts has a feature which allowed me to record field notes as part of the heading to each transcription.

Over a 10-month period I thematically ordered and analyzed the data both manually and via a sophisticated

computerized program, QUALPRO (Blackman, 1993). QUALPRO was selected based on the suggestion of an expert consultant in qualitative research methods after she had read my Prospectus and interviewed me (R. Tesch, personal communication, October 11, 1993). QUALPRO is a text database manager and set of productivity tools that are menu-driven and easy to use (Blackman, 1993). With QUALPRO I structured, labeled, and grouped the interviews. With the program and productivity tools codes were electronically attached to sections of text within the interviews. I could locate, extract, copy, or label the documents after sections were coded. The program offered a choice whether to send the coded information to a printer, computer monitor, or textfile. Each extracted section was identified by interview and its location within the interview. Co-occurring codes could be traced because QUALPRO allows one to nest codes within passages. Because sections of extracted data from one file and multiple files were collected, fresh perspectives were revealed.

Coding of passages was refined. For the most part the categories were not predetermined as they developed from the data. Sometimes the categories were related to what I had read in the literature. In other instances the categories were related to the nature of the questions in the General Interview Guide. In other cases, categories rose from the

data like a dough from flour and yeast. This process took place after I had immersed myself in and dwelled with the data in an attempt to grasp the frame of reference, feelings, and tone of the participants as they expressed what they considered essential to their experience of menstrual synchronization.

I labeled each category and then abbreviated it as a "code." Many iterations later, all of the material relevant to one category was clustered. In this way I discovered if there were similarities among the participants, and therefore themes and patterns. Content analysis identified meaningful and cogent examples, basic descriptive units, and themes and patterns in the narrative data. Several listenings to the audiotapes, with and without the transcripts in front of me, and readings of the transcripts allowed me to label and index the data. This gave substance to the classification system. Although this was a qualitative study, QUALPRO was used to count and categorize the generated data. "To identify something, the observer must know what qualifies as that thing, or that kind of thing. This entails counting to one" (Kirk and Miller 1986, p. 9).

In brief, after the data was collected both the audiotapes and transcribed interviews were analyzed singly, in combination, and as a whole, following Coliazzi's (1978)

approach to data analysis, as suggested by Dr. Renata Tesch (personal communication, October 11, 1993). Therefore, I took the following specific steps, developed by Coliazzi (1978), to garner a rich and complete sense of the phenomenon of menstrual synchronization:

1. I listened to each audiotape multiple times to grasp the meaning each participant was imparting, also her frame of reference, feelings, and tone.

2. A professional typist transcribed each audiotape. I then listened to each tape with the transcription to verify proper sequencing, attribution of quotes, punctuation, and completeness. In addition I deleted any identifying information. Following those corrections, when needed, I entered the written transcription directly into QUALPRO. As directed, the QUALPRO program numbered each line of the transcript and sequentially blocked and numbered each speaker's narrative.

3. As part of the second interview, I sent a copy of the initial face-to-face interview in the QUALPRO format to each participant and asked her to make sure that what was transcribed was true of her experience of the initial interview. In addition, I asked specific questions about the content of each the interviews noting the block and line numbers for easy reference. I also requested that each woman add any other comments, recollections, and so forth.

(Appendix H).

4. After a few readings of the transcriptions, I started to bracket meaningful sections. Some were essential and germane to the topic of my study; they are known as extracting statements. Other words and phrases emanated from the data and they were noted, although they did not strictly pertain to the investigated phenomenon. That is, more than one participant would say something similar albeit peripheral and I would note that.

5. Reading behind, below, and between the lines for meaning, I added to a tentative list of significant word meanings. The word meanings, or codes, captured the meanings in the original descriptions of each and all of the narratives.

6. From an extensive list of meanings a clustering and collapsing of them were realized in two ways. First I clustered or grouped the codes by continuously interacting with the list of codes, the General Interview Guide, and the written transcriptions to the extent that general themes condensed. After grouping the codes, I collapsed the codes manually and used the QUALPRO program to produce a frequency count of all of the codes across all of the interviews. The results made it easier to "see" where I could compress the codes further until I arrived at a coding scheme that was inclusive of the phenomena in a way that was not

contradictory and less confusing. This took place over a 10-month period.

7. I parlayed the results into a comprehensive description of the phenomenon which holds the essential description of the phenomenon (Coliazzi, 1978). The description was created through an elemental synthesis of the data that simultaneously reduced the data by abstracting to a higher level of reality (Tesch, 1988).

8. I set down the essential description of the experience.

9. As a third interview I sent a written comprehensive description of the phenomenon to the participants (Appendix I) for their reactions.

Concerns and Strategies: Credibility, Transferability, Dependability, and Confirmability

For qualitative research Guba (1981) and Sandelowski (1986) propose different terminology to address reliability and validity concerns and strategies. In place of the conventional, quantitative epistemology, Guba (1981) suggests the following: credibility for internal validity, transferability for external validity or generalizability, dependability for reliability, and confirmability in place of objectivity. Sandelowski (1986) provides a framework for evaluating qualitative research. In her schema four factors

are to be considered: truth value for internal or content validity, applicability in place of generalizability or external validity, consistency in place of reliability, and neutrality for objectivity. Using a merger of the two schemes the following discusses the credibility, transferability, dependability, and confirmability concerns and strategies pertinent to this study.

Credibility or Truth Value

The exemplar of data collection in human science is the face-to-face interview (Polkinghorne, 1983). The interviews were "a conversation with a purpose" (Kahn and Cannell, 1957, p. 82). The purpose of an interview in qualitative research is to obtain information through an interaction involving the research participants in a valid and reliable manner (Marshall and Rossman, 1989). I assumed that the responses of the participants were true and that the questions I asked revealed what I wanted to know. I prefaced and ended every interview with the caveat to the participants not to feel limited by my questions and to add to or change anything that they said.

The credibility or truth value of a qualitative study can be threatened by the inherent ambiguity of language and social desirability (Marshall and Rossman, 1989). As suggested by Caudill and Weinstein (1969), the researcher must address the concern about ambiguity in language. To do

so, I had all of the initial interviews transcribed and preliminarily coded before doing the second interviews. The second interview, sending the transcribed interview along with specific and general questions, provided both clarification and validation. The third interview obtained affirming responses to the interpretation from 11 of the 13 participants, which further enhanced the validation of the study. Involving nurse researchers and an expert nurse practitioner in the data analysis, for clarification and consensual validation of the interpretation, heightened the validity of the study.

By including the participant's descriptions of her experience in her own words, the problem of social desirability was decreased. Further, maintaining a peer relationship with respondents by exchanging feelings and values promoted an open learning situation. Still following Coliazzi's (1978) interview method, as the researcher I realized that each participant was not just a source of data, but a valuable person. I listened with the intent of being completely present and believed that the verbal exchange during the interviews was between two people engaged in a shared endeavor without professional or social division (Coliazzi, 1978).

The sequence of at least three interviews, especially the second one, pulled out any idiosyncratic interpretations

and validated the recurring patterns. The accurate description of the distilled product of the perceived, lived experience of the participants was the truth value, and is found in Chapters IV and V. Sandelowski (1986) holds that the way to evaluate the truth value of a qualitative study is to ascertain if the study is credible.

Credibility, according to Sandelowski (1986), is a familiar description-interpretation of a human experience. Moreover, the description and interpretation made must be instantly recognizable by humans having had the experience to the degree that they would recognize them as their own. Others recognized the experience through solely reading it in the study. This, another credibility criterion, judged the truth value of the study. To ensure the truth value of this study against the criterion of credibility, many strategies were used:

1. I reviewed the literature before, during, and after the analysis of the data to validate the participant's experiences. That is, I noted that the experiences and explanations given by the participants were mentioned in various other sources and quantitative studies.

2. Typical instances, atypical elements, and negative cases were checked for while doing the interviews and analyzing the transcribed narratives.

3. Sending the respective, actual written transcripts

to each participant obtained validation.

4. Obtaining input from the faculty on the dissertation committee, and from a nurse expert not on the dissertation committee, during the analysis of the data provided valuable sources of validation.

5. Sending the description and prototype to all of the participants enhanced validity (Appendix I).

6. I anchored the study in an explicit theoretical context to obtain the quality of the relationship between the elements of a model that represents it and observation as described by Kirk and Miller (1986). The result is in Chapter V.

Transferability or Applicability

Transferability or applicability is the equivalent of generalizability. Despite the small sample size of this study, applicability was achieved because the results are applicable to other contexts beyond the study situation. That is, other women who read the prototypical description of the aggregated interviews immediately recognized the phenomenon. "The representativeness of the sample is replaced by the representativeness of the recurring themes and patterns identified in the study" (Leonard, 1989, p. 53). Presenting enough narrative data to the nurse consultants, and to other readers, so that they could recognize the prototype consensually validated the data.

Dependability, Consistency, or Auditability

Dependability, consistency, or auditability in qualitative research is the equivalent method of reliability in quantitative research (Lincoln and Guba, 1985). I took measures to ensure the dependability of the loosely structured General Interview Guide. The various methods suggested and followed to ensure dependability of the General Interview Guide were: First, I wrote out an exhaustive list of questions for which I wanted an answer. Second, I engaged expert consultants (a nurse practitioner and a psychologist) to review the preliminary content of the General Interview Guide. Third, I culled topics from a review of the literature. Fourth, I read about constructing unstructured qualitative interview guides. Fifth, I sought peer consultation regarding the proposed research question. And sixth, I followed the accepted guidelines for constructing interview schedules (e.g., Lofland, 1971). The General Interview Guide, however, evolved as I did the interviews. For example, I initially asked the first four participants questions about future contexts. I dropped them for the most part after that since these were antithetical to the phenomenological method. Even though this study cannot be exactly replicated consistency was established. In this type of research the researcher is to be true to the phenomenon. Therefore, I instituted a system of checks and

balances which is not always used in this type of research (Coliazzi, 1978).

As suggested by Swanson-Kauffman (1986), dependability was enhanced by asking an expert nurse "to review several transcripts for how reliably she felt I could assist the informant in validly sharing their experience" (p. 66). The chair of the dissertation committee did this. Second, a nurse researcher and a nurse practitioner checked the coding of the data and compared it with my own coding which produced valuable measures of interrater reliability. This was calculated using the computer program, QUALPRO. In addition, two members of the dissertation committee reviewed drafts explaining the codes and patterns from the transcriptions.

Auditability is the procedure and process by which another researcher or reader can obviously follow the "decision trail" of the study and its findings. Guba and Lincoln (1981) hold that another researcher, given the study data, the perspective of the researcher, as well as the study situation, should arrive at the same or similar (not contradictory) conclusions. If any reader can trace the events and grasp the logic of the decisions that were made within the work, then auditability is achieved (Sandelowski, 1986). Therefore, I obtained consensual validation of the interpretations (Caudill and Weinstein, 1969) from experts,

participants, and others.

I show below, and report in the study, the way auditability was achieved:

1. How, chronologically, I became interested in the phenomenon of menstrual synchronization (Chapter I, pp. 5 -6; Chapter III, p. 87);

2. What my perspective of the phenomenon was (Chapter I, pp. 5 - 6; Chapter III, p. 87);

3. What the specific purposes of the study was (Chapter I, p. 6; Chapter V, p. 167);

4. How and when the participants were contacted and then included in the study (Chapter III, pp. 60 - 65);

5. How the data were collected (Chapter III, pp. 62 - 71);

6. What the nature of the relationship between the participants and the researcher was (Chapter III, pp. 68- 71; Chapter V, pp. 144 - 145);

7. What period of time the data collection covered (Chapter I, p. 28; Chapter III, pp. 71, 76, 85 and 89; Chapter IV, p. 105);

8. What the settings were in which the data were collected (Chapter III, p. 60);

9. How the data were analyzed and interpreted (Chapter III, pp. 71 - 76 and 87 - 90; Chapter IV, pp. 97 - 106);

10. How the elemental aspects of the data were

determined (Chapter III, pp. 71 - 76; Chapter IV, pp. 99 - 102; Chapter V, pp. 149 - 153);

11. What the specific strategies for deciding the credibility, transferability, dependability, and confirmability of the data were (Chapter III, pp. 76 - 85);

12. How field notes, recordings, transcripts, memos, journal entries, and other artifacts of the study served as further evidence of the decision trail (Chapter III, pp. 86 - 90).

Confirmability or Neutrality

As the researcher in a qualitative study it was not possible, nor desirable, for me to take an objective, detached stance. Sandelowski's (1986) fourth criterion, neutrality, was met in two ways. First, the integrity of the audiotapes and written transcriptions was maintained. Second, I kept a journal so that I could keep my own experiences, personal biases, and feelings apart from the text. I said in the Prospectus that I would keep field notes. My journal, the QUALPRO headings of each interview, and the formatted transcriptions amounted to a "condensed (verbatim) account, an expanded account recorded as soon as possible after each field session, a 'field work journal' that contains 'experiences, ideas, fears, mistakes, confusions, breakthroughs, and problems that arise during field work,' and a provisional running record of analysis

and interpretation" (Spradley, 1979, p. 55). My intent was, as Rowan (1981) puts it, to move past "mere" objectivity to work at a realized level, which is "objectively subjective" (p. 103). I tacitly dwelled with the data, and at a subjective level, arrived at a creative way of organizing the codes into the themes and subthemes inherent in the data.

Summary

The methods and procedures that were used in the study were presented in this chapter. Methodological procedures addressed were: (1) the design, (2) the naturalistic setting, (3) the description of the participants, (4) the protection of the rights of participants, (5) the instruments, (6) the data collection procedures, (7) the treatment of the data, and (8) the "reliability and validity" concerns and strategies used over the 10-month period. Multi-level analysis of the data gave order so that the transcribed narrative accounts emerged or fell into patterns. According to Sandelowski's (1986) method, strategies to achieve rigor were employed. The possibility of generating theory will emerge at the interpretive level of the analysis of the data.

According to Leininger (1985), in qualitative research the focus of dependability is on "identifying and

documenting recurrent, accurate, and consistent (homogeneous) or inconsistent (heterogeneous) features, as patterns, themes, values, world views, experiences, and other phenomena confirmed in similar or different contexts" (p. 69, [italics deleted]). The QUALPRO productivity tools allowed me to:

... locate, extract, copy, and label all uncoded text, summarize the codes and frequencies either in selected files or in all the files... produce Cross Tabulations of codes by file, and compute the Intercoder Reliability for two coders. The Productivity Tools provide an easy and painless way to analyze and present qualitative data not normally associated with textual analysis (Blackman, 1993, p. 3).

The findings of the data analysis will be reported in Chapter IV. First, I will reiterate the "decision trail" for the data collection and analysis.

Decision Trail

The flow of the qualitative research process is difficult to depict chronologically. Asking questions in a linear, clock-time (chronos) fashion does not account for a complete description of how we experience time, menstrual synchronization, or life for that matter. The other type of time, mythos, is that seamless and intuitive sense of time flowing (Wolf, 1991), which is more akin to the

phenomenological research process. Nonetheless, in outline form, the following account chronologically presents the sequencing of the phases that explain how I started and ended the study.

1. At the beginning of my doctoral education I focused on the idea of boundary and struggled to find an observable manifestation of it. My previous research on menopause and work with women and PMS were facets of an obvious interest in menstrual cycle phenomena. I have lived with women nearly all of my life. I became keenly aware that after a while we, whether in a dyad or a small group, had our menstrual cycles simultaneously. I read about a belief that once all women menstruated simultaneously in relation to the cycles of the moon. So I did a review of the literature. What impressed me the most about previous studies on menstrual synchrony was that women themselves had never been interviewed about this phenomenon. Secondarily, the previous studies investigated a young population. They also excluded lesbians.

2. I thought that I would have difficulty locating potential participants for the study. As it turned out, this was not a problem. Other than the age criterion, I did not state any particular social variables. I did not attempt to manipulate the demographic variables to include a broader sample.

3. The 13 interviews were audiotaped. Listening to

each audiotape multiple times I grasped the meaning each participant was imparting, along with her frame of reference, feelings, and tone. There was a blandness to reading the interviews when compared to listening to the audiotapes. Least apparent was the joyous laughter that was experienced with most of the participants.

4. Each audiotape was transcribed by a professional typist. I then listened to each tape with the transcription to verify proper sequencing, attribution of quotes, and completeness, besides deleting any identifying information. I entered the written transcription directly into QUALPRO. I read the reformatted interviews and listened to the audiotapes many, many times.

5. After a few readings of the transcriptions, I bracketed meaningful sections. Some were essential and germane to the topic of my study.

6. I added to a tentative list of significant word meanings. The word meanings, or codes, captured the meanings in the original descriptions of each and all of the narratives. Bracketing passages I coded and recoded the interviews as I continued to add, compress, and refine the codes. I continually compared the interviews to each other manually and with QUALPRO until I arrived at a coding scheme that was inclusive of the phenomena in a way that was not contradictory and less confusing.

7. For the second interview, I sent a copy of the initial interview in the QUALPRO format to each participant and asked her to make sure that what was transcribed was true of her experience of the initial interview. In addition, I asked specific and general questions about the content of each of the interviews. Not one participant wanted to change or delete any material. The transcriptions of the first interviews stood alone.

8. I continued checking for typical and atypical elements, also negative instances, while doing, analyzing, and studying the interviews.

9. Reviewing the literature before, during, and after the analysis of the data validated the participants' experiences. That was, I noted that the experiences and explanations the participants shared were mentioned in various other sources and quantitative studies.

10. Intuitively I immersed myself in the data and continued to keep my journal and to survey and analyze the data until I made and recognized sense and order. This process went on for 10 months.

11. Midway through the analysis I came up with an elemental way of grasping the data as a whole. Using this personal metaphorical and metathematic schema, common elements which ran through the data were illuminated in all of the transcripts. The metaphorical and metathematic

structure evolved into the description based on the analytical themes and empirical subthemes. In short, a dual process of identifying and refining concise codes common to the transcripts, while abstractly thinking about the whole of the experience as imparted by the participants, led to the final themes and subthemes.

12. Although there were variations in the individual experiences of each participant, the themes and subthemes were compatible and consistent with all 13 participants.

13. Direct quotes chosen to support the common themes and subthemes were selected based on their ability to represent the perspective of the participants.

14. The results were parlayed into a comprehensive description of a healthy, holistic phenomenon using the women's own words.

CHAPTER IV

FINDINGS OF THE STUDY

The findings of the study will be discussed in three sections. The first section introduces and describes the participants. The following section provides the analysis of the data which resulted in the four major analytical themes and respective empirical subthemes that emerged from the inquiry. The third section enhances the themes and subthemes.

The Participants in General

The 13 participants ranged in age from 25 to 46, with a mean age of 37 and median of 35.5. All of the participants had experienced or were experiencing the phenomenon of menstrual synchronization. The nonrandom, purposive sample consisted of women not previously personally acquainted with the researcher. Five of the women were obtained through networking with one friend. I obtained four more through contact with another friend who is a professor of psychology

at a community college. Two participants were obtained through the referral of two different participants. One woman heard about the research through my work setting and volunteered to participate. And one woman was the friend of a friend who had also heard about the research and wanted to tell her story.

The respondents were all white women with varied ethnic-cultural identities, socioeconomic backgrounds, religious, and spiritual orientations. On the questionnaire all of the participants essentially identified themselves as Caucasian in the race category. It was in the ethnic-cultural identity section that there was much diversity. All had attended college. Nine completed college or professional school. Education ranged from some college to doctorate. Each participant completed a demographic data form, the questionnaire at the end of the initial interview. Table 1. summarizes the demographic data obtained from the questionnaire. For the second interview, I sent the participants a copy of their transcribed initial interview with specific questions. And for the third interview, I sent the participants the description and the prototype of the study. The researcher also gave the participant's her telephone numbers and a list of resources as a part of debriefing and closure of the interview process.

For the sake of confidentiality I describe the

TABLE 1. DEMOGRAPHIC DATA FROM THE QUESTIONNAIRE

PARTICIPANT NO.	SOCIOECONOMIC STATUS				PERSONAL LIFE				
	Age (Years)	Race	Ethnic/Cultural ID	Education or Highest Degree	Occupation	Income	Religion/Spirituality	Marital/Relationship	Residence
FOOTNOTES		1.	2.	3.	4.		5.	6.	7.
01	33	W	CA	DVM	VET	100K	RC/C	M	Albuq., NM
02	37	C	IR	DVM	VET	100K	NONE	LW/1 YR	Albuq., NM
03	32	W	--	14 YRS	VT	10.5K	PG	S	Albuq., NM
04	41	A	--	MSME	EN	--	--	S	Albuq., NM
05	36	C	H/IR/CI	14	HS/S	--	SB	M	Albuq., NM
06	44	P	--	14	C	30K	M	S	Albuq., NM
07	25	W	--	SC	P/W/S	5K	B	D/B	L.A., NM
08	36	W	IR	14	S	50K	Q	M	Esp., NM
09	40	C	WASP	BA+	SC	16K	WOI	S	Med., NM
10	33	W	IT/IR	BA	AD	19K	PG	S	Taos, NM
11	40	W	--	DC	DC	75K	S	S	S. Fe., NM
12	40	C	GR/IR	BBA+	BO	50K	CCP	M	L. R., AR
13	46	W	WASP	CG	PSA	--	S	D	Eules, TX

Footnotes:

1. W - White; C - Caucasian; A - Anglo; P - Pink
2. CA - Cajun; IR - Irish; H - Hispanic; CI - Cherokee Indian; WASP - White Anglo Saxon Protestant; GR - German
3. DVM - Doctor of Veterinary Medicine; MSME - Master of Science in Mechanical Engineering; SC - Some College; BA+ - Bachelor of Arts Degree and some additional education; BA - Bachelor of Arts Degree; DC - Chiropractic Doctor; BBA+ - Bachelor of Business Administration and some additional education; CG - College Graduate
4. VET - Veterinarian; VT - Veterinarian Technician; EN - Engineer; HS/S - Hair Stylist/Student; C - Cosmetologist; P/W/S - Phlebotomist/Waitperson/Student; S-Student; SC - Secretary; AD - Athletic Director; DC - Chiropractic Physician; BO - Business Owner; PSA - Passenger Service Agent (Airlines)
5. RC/C - Recovering Catholic/Christian; PG - Paganism or Pagan; SB - Spiritual Being; M - Metaphysical; B - Baptist; Q - Quaker; WOI - Working on It; S - Spiritual; CCP - Christian Church (Disciples of Christ) Protestant
6. M - Married; LW/1 Yr - Living with/1 year; S - Single; D/B - Divorced/Boyfriend; D - Divorced
7. Albuq., NM - Albuquerque, New Mexico; L.A., NM - Los Alamos, New Mexico; Esp., NM - Espanola, New Mexico; Med., NM - Medanales, New Mexico; S. Fe., NM - Santa Fe., New Mexico; L.R., AR - Little Rock, Arkansas.

Note: Data reported verbatim.

participants by number only. These sketches give the reader information about how I reached my participants and provide some base knowledge beyond the demographic profile above. I sent all of the women, except Participant 03, the introductory letters via mail before conducting the interviews.

The Participants Described

The Individuals

Participant 01: This participant came to me via a friend, S.G. S.G. had told Participant 01, who was an acquaintance, about my study and then inadvertently we met each other at a concert. She was very interested in participating in the project. During the interview Participant 01 took an open and self-reflective stance.

Participant 02: As with Participant 01, she had heard about the study via S.G. I also met her at the same concert. I found out that Participant 01 and Participant 02 had been involved for over a year. Participant 02 was reserved during the interview.

Participant 03: Participant 03 was helping Participant 02 remodel her house. Before leaving for the study, Participant 02 told who would become Participant 03 about the interview. At the end of the interview Participant 02 said that Participant 03 might be interested and willing to

talk with me right then. So when Participant 02 left I agreed to wait 15 minutes. As serendipity would have it, she showed up. Participant 03 read a sample of the introductory letters that I had mailed to other potential participants before the interview. She was very soft-spoken and articulate about her extensive menstrual synchronization experiences.

Participant 04: Via S.G., but unlike Participant 01 and Participant 02, S.G. and Participant 04 had been friends for many years. I was briefly introduced to Participant 04 a few months before doing the interview. Her answers and questions were precise and thoughtful. She gave me a contact, which turned out to be Participant 11.

Participant 05: This respondent came to me via S.G., as with Participant 01, Participant 02, and Participant 04. She was a quiet and unassuming person yet provided some profound responses to my questions. Obviously undergoing some personal growth, she was open to discussing her experiences and perceptions.

Participant 06: S.G. provided this contact. Participant 06 was very verbal and comfortable discussing her viewpoints in a fun and provocative manner.

Participant 07: Another friend, M.S., was teaching psychology classes at a community college. She mentioned my study to the faculty, staff, and to students in class.

Participant 07, a student, pursued participating in the study. She was bright, friendly, and goal-directed during the interview.

Participant 08: The same as Participant 07, Participant 08 was a student in the Introduction to Psychology class. She was tentative and hesitant out of wanting to give me what I needed more than anything else.

Participant 09: Participant 09, like Participant 07 and Participant 08, was a student taking the Psychology of Women class that M.S. taught; Participant 09 was also on staff. She spoke slowly in order carefully to collect and express her thoughts and feelings.

Participant 10: Via M.S., Participant 10 was a staff member at the same institution. She was reserved but expressive during the interview.

Participant 11: An old friend of Participant 04's, Participant 11 was very engaging and fun. She gave insightful answers and was really the only one to talk about menopause at length.

Participant 12: Through my work setting Participant 12 heard about the study and volunteered to participate. She was gentle and warm.

Participant 13: Participant 13 was involved with an acquaintance who heard about the study from a friend of mine. Currently having the experience of menstrual

synchronization, she was interested in telling her story. Participant 13 was generous and eager to share her experiences.

As a Group

The general collage of the study sample that emerges is one of educated, financially resourceful Caucasian women with varying ethnic-cultural identities and religious-spiritual orientations.

Analysis of the Data

Based on a manual and computerized qualitative analyses of the data from the first face-to-face and second mailed interviews, the experience of menstrual synchronization was distilled into four major analytical themes. The common themes emerged from the bracketed or coded sections of the interviews. The process went from coding to themes and from themes to subthemes. Initially three themes appeared: I. How Know or Knew and When, II. Relationships and Connections, and III. Conditions for Meaning-Values-Beliefs. But because it was so apparent that menstrual synchronization was a convoluted web of shared connections, I realized that this initial thematic scheme was inadequate. After thinking metaphorically, a map with four major analytical themes came through.

The four major analytical themes were: (1) "Knowing

Menstrual Synchronization is Happening and When," (2) "The Meaning of Menstrual Synchronization," (3) "Relationships and Connections," and (4) "The Effects of Menstrual Synchronization." Continual comparison between and among the transcribed and audiotaped interviews comprised the data analysis. I sought similarities, themes, related cases, and contrary instances. After many iterations I could see that certain data fell into empirical subthemes under each of the four major analytical themes. The empirical subthemes were the empirical referents of the themes. At the outset I had decided to search for two extraneous codes: (1) contrary cases of menstrual synchronization and (2) cases related to menstrual synchronization. Related cases were defined by the content in the interviews.

In attempting to understand the frame of reference of each participant I paid attention to everything that she said. Although not predetermined, the categories came from the process and product of the interviews, the review of the literature, and the General Interview Guide. However, the questions were very general. While reading the transcriptions I labeled the categories as codes. Each interview was coded and subsequent interviews were compared to the previous ones as far as the coding was appropriate for the data. All of the information pertinent to one category was placed together. As Blackman (1993) notes, "the

creation of symbolic code is... a thoroughly human task" (p. 28). Therefore, I constructed the meanings in the text. When a new code appeared in a subsequent interview transcription, I went back and checked the previous interview transcriptions for the presence of the "new" code.

Specifically, I read the first four interviews as a pilot study. My intent was to grasp the interviews as a whole and to sense each individual woman's perspective. The average length of the single spaced interviews was 13 pages or 545 lines long. QUALPRO numbered each line and put two spaces (or a block) between each speaker. On average, there was a total of 118 blocks per interview, 59 for each speaker. Units of data were segments of the text that contained a single theme. In this study a unit of data was a phrase, sentence, or group of sentences. For example, the general questions in the General Interview Guide had to be broken down into smaller units. The themes were the categories and the shorthand for the categories was the codes. The themes or patterns, signifying similarities among the respondents, were the "descriptive expressions in the material that are at the center of the experience" (Tesch, 1988, p. 3).

I read each interview and listened to each audiotape multiple times with the transcriptions in front of me; I listened to the audiotapes alone during long drives. Each

time through I revised or adjusted the tentative list of codes. I kept journal entries to track content and codes across interviews. The initial coding scheme contained a total of 21 codes. A week later, after reading more interviews, I added seven codes and collapsed four codes into two codes for a total of 26 codes. Yet all I had was a list of codes. Some general themes were emerging, but I needed an organizing framework to go from mere coding to themes. Looking for common elements led to clustering the codes under the tentative headings or themes. The themes, which were the coalesced codes, fell into place. To go from analytical themes to empirical referents was the next step. The empirical referents were the actual codes.

For the purposes of QUALRPO I had to abbreviate the codes to no longer than fifteen characters, which was long enough to capture the meaning of each category label. For example, the code for how know and how knew menstrual synchronization did or was occurring became HOWKNOW and relationship with family of origin (sister and mother) became RELATIONFAMILY.

Initially BEHAVIOR, like many other codes, had been a separate one, but the more I read and listened to the interviews this code merged with HOWKNOW. This was because the overt behavior provided the cues to knowing how menstrual synchronization is or was occurring. Another

instance of this type of collapsing was that originally THOUGHTS, OPINIONS, KNOWLEDGE, FEELINGS, VALUES, and BELIEFS about menstrual synchronization were discreet codes. They meshed into the one code, MEANING. These were not arbitrary decisions for I did a frequency count of the separate, multiple codes in all of the interviews using QUALPRO. Some codes did not appear in any of the interviews and some only a few times which made it easier to condense them into other codes. Occasionally, the difference between the codes, OPINIONS and VALUES for instance, was slim in context. The preliminary coding systems had been too specific and ultimately confusing in context.

Also, in the General Interview Guide there were future-oriented questions. These were developed from Patton (1987) who, as Dr. Renata Tesch (personal communication, October 11, 1993) pointed out, is a qualitative evaluation researcher. She pointed out that future-type questions were antithetical to the phenomenological method. However, I did not speak with Dr. Tesch until after I had done the first four interviews. Although I tried not to ask future-directed questions in the fifth through 13th interviews, sometimes I still did inadvertently. However, none of those responses were coded. I also did not code any of my utterances, except those to be used later for my own purposes regarding implications and limitations. I did not code any of my

speech for the analysis of the data.

I was very involved in the research and concerned at one point that I had biased my interpretations at the expense of being faithful to the data. I subsequently took some steps to minimize this possibility. I reread the interviews to see if I had asked leading questions; I had not used leading questions to any great extent. Keeping a journal, describing the participants, consulting with experts, and obtaining interrater reliability data furthered this aim.

Besides writing a description of each participant, so any other reader could understand the persons related to the data, I continued to keep a journal of my reactions as I proceeded to do the additional interviews, analyze the data, and interpret the findings. The coding scheme continued to evolve and I sent iterations to the faculty chair of my dissertation committee for discussion and further clarification. Also, I arranged to have a faculty dissertation committee member randomly check the coding as an expert consultant. She compared my coding with hers. Just to be sure, I also arranged for a clinical consultant, a nurse practitioner, to follow the same procedure.

With copies of the coding scheme, I explained and clarified the codes and coding system to them. Separately, side-by-side with each consultant, we randomly selected a

few of the interviews and went through them together. I did this so that we could discuss my rationale for assigning a particular code, or overlapping codes, to passages of the interviews. From the remaining interviews the first consultant randomly chose three (and the second consultant chose two) more interviews to code independently of me, which they returned by mail. The first consultant chose from the first twelve interviews; the 13th interview had not been transcribed yet. The second consultant chose from 12 of the 13 available interviews. She knew one of my participants and I did not want her to have access to that one's interview transcription, which might have biased her reading.

This triple coding was a good reliability check. Miles and Huberman (1984) suggest that doing so clarifies differences and serves for "assimilating a colleague's rival vision" (p. 63). In some cases the consultants and I did not exactly agree on the beginning or ending of certain segments. The researcher made refinements in the coding scheme after the session with the first expert. That is, how the participants felt about their menstrual cycle per se (code: HOWFEEL) was meshed with the code for premenstrual syndrome phenomena, PMS. Sometimes I had coded a passage as relating, for instance, to a relationship with a co-worker who was also a friend (code: RELATIONWOFR) and the second consultant coded that same passage as being about a

relationship with a co-worker (code: RELATIONWORK). However, the body of the segments coincided. In both cases, the consultants and I interpreted the narratives in different ways. This had more to do with not being familiar with the participants than anything else.

It was possible to detect these differences with the computerized program, QUALPRO. QUALPRO allowed me to produce a table of agreements (adjusted for chance) which compared the codes that I and the two consultants had attached to each line of the five selected texts. Looking line-by-line at whether we disagreed led me to focus and clarify my coding. With QUALPRO I was also able to look at the category of disagreement as compared to the location (i.e., line number) of the disagreement. This pointed out where the consultants and I had coded different beginnings and endings of passages around a central point. Mostly, I coded passages much more specifically than either of the two consultants. In short, I followed Weber's (1985) list of steps in creating a coding scheme. These steps are: (1) define the recording unit, (2) define the categories, (3) test coding on a sample of text, (4) assess reliability, (5) revise coding rules and categories, (6) code all of the text, and (7) assess achieved reliability. I did not think it was necessary to retrain the consultants and then reassess the reproducibility of their coding. This was because I could

attribute most of the discrepancies to cognitive differences among the experts and researcher.

After 10 months there were 13 major codes organized under four analytical themes and two extraneous codes, for a total of 15 codes. The two extraneous codes were to account for (1) cases contrary to menstrual synchronization and (2) cases that were related to menstrual synchronization. The 13 core codes are presented as if they are singularly limited. However, they do interconnect and share boundaries with each other. For the purposes of this study discretely listing them orders the phenomenon of concern.

Figure 1. provides the structure and content of each specific analytical theme and the respectively derived empirically descriptive codes (empirical referents) based on the aggregate analysis of the data. The terms under the headings in all capital letters indicate codes that were once discreet codes then coalesced into the respective scheme. Not all of the previously used codes appear, however, because some of them did not materialize. For example, I had originally foreseen a code called **RELATIONMALE**, thinking from the review of the literature that it might be a pertinent code, which it was not. Following that, Figures 2a. through 2j. include excerpted verbatim descriptive statements that illuminate and validate the empirical subthemes and the respective revealed codes.

Also, included are the two generic other codes used in the study. To share the experience as the participants told it their narrative accounts for the themes are provided. The figures for each theme and subtheme correspond to direct quotes from various respondents in the following sections.

FIGURE 1. THE FOUR THEMES OF MENSTRUAL SYNCHRONIZATION

I. ANALYTICAL THEME ONE

KNOWING MENSTRUAL SYNCHRONIZATION IS HAPPENING AND WHEN

Empirical Subtheme 1. HOWKNOW

How the participants knew that menstrual synchronization did occur; Includes BEHAVIORS observed during menstrual synchronization.

Empirical Subtheme 2. TIME

The amount of time it took for menstrual synchronization to happen.

**FIGURE 1. THE FOUR THEMES OF MENSTRUAL SYNCHRONIZATION
(Continued)**

II. ANALYTICAL THEME TWO

THE MEANING OF MENSTRUAL SYNCHRONIZATION

Empirical Subtheme 1. MEANING

Encompassed the participants' THOUGHTS, OPINIONS, KNOWLEDGE, FEELINGS, VALUES, and BELIEFS about menstrual synchronization.

Empirical Subtheme 2. EXPLANATION

The participants' explanation of menstrual synchronization, including (1) EMOTIONAL PROXIMITY necessary for menstrual synchronization to occur, a bond or closeness and (2) PHYSICAL PROXIMITY necessary for menstrual synchronization to occur, and includes the LOCATION/SITUATION menstrual synchronization took place.

FIGURE 1. THE FOUR THEMES OF MENSTRUAL SYNCHRONIZATION
(Continued)

III. ANALYTICAL THEME THREE

RELATIONSHIPS AND CONNECTIONS

Empirical Subtheme 1. VITAL RELATIONS

Includes RELATIONLESBIAN, which was a relationship with a lesbian lover; RELATIONROOM, which was a relationship with a room mate or dorm mate (also a friend); and RELATIONFRIEND, which was a relationship with a friend, not a room mate, dorm mate or lesbian partner.

Empirical Subtheme 2. OTHER RELATIONS

Includes RELATIONFAMILY, which was a relationship with family of origin (sister and mother); RELATIONWOFR, which was a relationship with a co-worker who was also a friend; RELATIONWORK, which was a relationship with a co-worker(s); and RELATIONSALL, which was a relationship with all of the above.

**FIGURE 1. THE FOUR THEMES OF MENSTRUAL SYNCHRONIZATION
(Continued)**

IV. ANALYTICAL THEME FOUR

THE EFFECTS OF MENSTRUAL SYNCHRONIZATION

Empirical Subtheme 1. EXPERIENCE

The participants' experience, including (1) INEFFABLE and (2) EFFECTS of menstrual synchronization (positive or negative) in the past, (including changes in menstrual synchronization) and included (3) SENSATIONS, which were sensations, or experience via the senses when menstrual synchronization occurred, and (4) COMING, which was a coming-together-and-going-apart-and-coming-together of the menstrual cycle in relation to another(s).

Empirical Subtheme 2. PREMENSTRUAL SYNDROME (PMS)

This was the participants' experience with PMS and related feelings re: the experience of menstrual synchronization and included HOWFEELBLOOD, which was how participants felt about and experience their menstrual cycle in general.

Figure 2a. Theme I. - Subtheme One - How Knew, including Behaviors Observed, that Menstrual Synchronization was Occurring

Excerpts from and Participant Statements	Subtheme	Theme
We went through tampons that one week.		
She brought it up.		
We kept track of our periods, and so I knew.	How Know or Knew, including Behaviors Observed, that Menstrual Synchronization was or is Occurring	Knowing Menstrual Synchronization is Happening and When
We worked in such a small place that we knew what was going on.		

Figure 2b. Theme I. - Subtheme Two - Time it Took for Menstrual Synchronization to Happen

Excepts from and Participant Statements	Subtheme	Theme
About three months . . .		
. . . a month and a half . . .		
. . . a couple of weeks . . .		
. . . a week . . .	<div> Amount of Time it Took for Menstrual Synchronization to Happen </div>	<div> Knowing Menstrual Synchronization Is Happening and When </div>
. . . six months to a year . . .		
. . . a month . . .		
. . . a couple of months . . .		

Figure 2c. Theme II. - Subtheme One - Meaning (Thoughts, Opinions, Knowledge, Feelings, Values, and Beliefs) about Menstrual Synchronization

Excerpts from and Participant Statements	Subtheme	Theme
Being more regular I think I appreciated that.		
I think nothing about it, it doesn't matter to me.	<div>Meaning (Thoughts, Opinions, Knowledge, Feelings, Values, and Beliefs) about Menstrual Synchronization</div>	<div>Meaning of Menstrual Synchronization</div>
It's interesting and neat.		
It's weird. It's kind of strange, but I just come to expect it anymore.		
I think it is something I take for granted . . . It pretty well is, you know.		
I mean I think that it's special that it happens.		
. . . now I don't think it's coincidence.		
Maybe before unnatural, but now, natural.		
. . . maybe I'm supposed to be living with this person.		
. . . novelty. . .		
. . . some spiritual feeling. . .		

Figure 2d. Theme II. - Subtheme Two - Explanation, including Emotional and Physical Proximity Necessary for Menstrual Synchronization to Occur

Excepts from and Participant Statements	Subtheme	Theme
<p>Pheromones.</p> <p>... some evolutionary aspect ...</p> <p>... more of a physical thing.</p> <p>... a physical proximity thing. I think primarily. Then, secondarily, the relationship proximity or closeness of the relationship.</p> <p>... the dominant one ...</p> <p>... like a bond. Some sort of cord.</p> <p>... the full moon.</p> <p>... all in the same atmosphere everyday.</p> <p>... that sympathy thing.</p> <p>... more of a psychological thing. . .</p> <p>... some kind of unspoken connection. . .</p>	<div>]]]]] </div> <div> Explanation, including Emotional and Physical Proximity for Menstrual Synchronization to Occur </div> <div>]]]]] </div>	<div> Meaning of Menstrual Synchronization </div>

Figure 2e. Theme III. - Subtheme One - Vital Relations (Lesbian Partner, Room Mate, or Dorm Mate, or Friend)

<u>Excepts from and Participant Statements</u>	<u>Subtheme</u>	<u>Theme</u>
I usually synchronized with the women [lovers] that I've lived with.		
. . . I had room mate and we synchronized.		
. . . in the same house with women.] <div>Vital Relations (Lesbian Lover, Room Mate or Dorm Mate, or Friend)</div>]] <div>Relationships and Connections</div>]
With my room mate.		
. . . it was with my room mate or a friend that lived across the hall.		
. . . it seems like with my two closest friends.		
. . . when I'm close friends with somebody. . .		

Figure 2f. Theme III. - Subtheme Two - Other Relationships (Family of Origin, Co-Worker/Friend, Co-Worker, and All of the Above)

<u>Excerpts from and Participant Statements</u>	<u>Subtheme</u>	<u>Theme</u>
<p>... everyone in my family [three sisters and mother] was on the same cycle.</p> <p>... when my daughter was living with me. . .</p> <p>... we [sister] were within a couple of days.</p> <p>we [sister and mother] were usually pretty close. . .</p> <p>... whenever, I'm close to a friend, that it, being at work or just a friend. . .</p> <p>... we all ended up the same days right up until the day I was laid off. . .</p> <p>I mean, casual acquaintances, lovers, just good friends, co-workers, you know.</p> <p>It's happened probably, I think, almost everytime that I know of.</p>	<div> <div>Other Relations (Family of Origin, Co-Worker/Friend, Co-Worker, and All of the Above)</div> </div>	<div>Relationships and Connections</div>

Figure 2g. Theme IV. - Subtheme One - Effects, including Experience, including Ineffable, Effects of, Sensations, and Coming-Together-and-Going-Apart-and-Come-Together of Menstrual Synchronization

Excerpts from and Participant Statements	Subtheme	Theme
Sensitivity, more sensitivity, and that's all touch, voice, everything.		
I was on my set pattern and they kind of gravitated to my time.		
And I think I caught up.		
. . . our periods started coming together and they didn't stay that way but when they diverged, it was like they started trying to come back together.	Experiences, including Ineffable, Effects of, Sensations, and Coming-Together-and-Going-Apart-and-Coming-Together Menstrual of Synchronization	The Effects of Menstrual Synchronization
I was gone for six months and came back and we're still pretty much in sync. . .		

Figure 2h. Theme IV. - Subtheme Two - Premenstrual Syndrome (PMS) and Includes How They Felt about Their Menstrual Cycle

<u>Excerpts from and Participant Statements</u>	<u>Subtheme</u>	<u>Theme</u>
<p>... I do get real emotional like the day before ...</p> <p>... it has made me more aware of my body and my emotions. . .</p> <p>... , I feel like going through either like a sort of depression or loud noises would make my ears hurt.</p> <p>... it's wonderful, I love it . . .</p> <p>Just that whole release.</p> <p>... the irritability and moodiness.</p> <p>... kind of bitchy and we got tired.</p> <p>I hate it!</p> <p>I tend to get more energetic just prior to my cycle.</p> <p>... I really have always appreciated it. . .</p>	<div>] <div> PMS and How They Felt about Their Menstrual Cycle </div>] </div>	<div> <div> The Effects of Menstrual Synchronization </div> </div>

Figure 2i. Extraneous Code - Contrary Cases of Menstrual Synchronization

Excerpts from Participant Statements

Code

... and I have not synchronized like I've found with others.

Not that I know of [with friends].

... I haven't noticed much of a difference in people I work with.

And we're all on different cycles [room mates].
And have been for almost two years.

}
}
}

Contrary Cases of Menstrual Synchronization

Figure 2j. Extraneous Code - Cases Related to Menstrual Synchronization

Excerpts from and Participants Statements

Code

But we're still like a week.

. . . all of us seem to have our periods
within a week and we didn't before.

]
]
]

Cases Related to Menstrual Synchronization

I would say those are probably
more coincidental.

The following enhances the four major analytical themes and empirical codes that they encompass to answer the research question: "What is the lived experience of menstrual synchronization from the perspective of the women who have experienced it?" Although referring to individuals below, the intention is to sketch the facets of the whole of the experience of menstrual synchronization. Direct quotes from participants are verbatim.

Knowing Menstrual Synchronization is Happening and When

When I mentioned the phenomenon of menstrual synchronization to people, female or male, they instantly knew what I was referring to or they were puzzled. In the quantitative studies, the phenomenon of menstrual synchrony was determined with paper-and-pencil tools. My challenge was to flesh out how women who had experienced menstrual synchronization knew that it was occurring. This was the first subtheme and included eliciting those observable behaviors that the participants recalled. This was a problematic area in that some participants said that there was not anything to notice, they just knew it was happening. As another one said, "the dialogue is only relevant to the extent that I know what's going on because, you know." Slightly less than half the participants expounded on this subtheme. There was no question that it took place, knowing

how was more difficult. Connected to this, although usually less consciously reflected upon yet more easily obtained, was the amount of time it took to take effect, which produced the second subtheme. There was great variability in the reports of the time it took for menstrual synchronization to occur. The subthemes of Knowing Menstrual Synchronization is Happening (How Know and Knew) and When (Time) gave specific information about how the participants knew that menstrual synchronization was taking place, and in what time frame.

How Know or Knew

Surprisingly none of the participants kept a menstrual cycle calendar. "But, we kept track of our periods, and so I knew when she was having hers." The participants knew that menstrual synchronization was happening. As one put it, "because I always lived with someone that knew when theirs were gonna happen..." Or as another said, "She brought it up." Participants each had ways of knowing when and that their menstrual cycles synchronized with another's.

Room mates talked about the phenomenon. One stated:

I remember the novelty of it and I can remember when my room mate and I lived together that we would joke about it and we would be sitting on our [pause] and we would be in our respective bathrooms and Lynn would shout at me, "Did you get your period this morning?" And I'd say, "I got my period this morning."

In work settings the women realized that they were experiencing menstrual synchronization. They knew because of jokes or comments made in group contexts, such as staff meetings, (e.g., "Oh, wow, we're all changing again,"), or among themselves in the smaller office environments. For example:

Well, the bathroom's like 10 feet from where we sit. We would just, all of us went to the bathroom without our purses in our hands when it wasn't that time of the month. And you always knew. They would say something, you know, like, we also had the Tylenol or aspirin bottle real close by, and just things like that. They would say something about having cramps or they would forget their supplies and ask us for something.

In both personal and work settings the participants commented about "supplies" (e.g., tampons). For instance, "Again, you know, it seemed I can remember noticing that it was kind of the same time, because you run out of things."

Time

All of the participants specified the amount of time that it took for menstrual synchronization to occur in at least one context. From within a week upwards of six months to a year was the range of time that it took. It was with relative strangers, as room mates, which a striking instance of less than a week occurred:

It was a very dramatic experience because we went down there for a solar eclipse and there were about five of us women. And maybe only one woman, if anybody, was scheduled to have their period during that week, and I had had my bloods right before I left, so it certainly wasn't my time of the cycle to bleed again. On the day of the eclipse, I started, and as it turned out, I think all of us ended up starting that day. And one of the women had, it had been months and months since she had a period. She was, we thought she had really begun menopause, which I'm sure she had. But, she certainly didn't expect to bleed again.

Two sisters became synchronized in one month after living together again as adults. Of two participants who talked about being synchronized with their sisters and mother (while still living at home), neither could recall the details about how long it took for them to become synchronized. With room mates it happened faster (2 weeks to 4 months) than with lesbian lovers, which took 2 to 6 months. Whereas with friends and co-workers, whether they were friends also or not, the process seemed to take longer, closer to 6 months to a year.

The Meaning of Menstrual Synchronization

Because this is an amalgam of the perspectives of the 13 participants, on the surface their respective assignments as to the meaning of menstrual synchronization might seem contradictory. Instead, the following represents a range of their personal perspectives. Only one participant did not

provide her thoughts, opinions, knowledge, feelings, values, and beliefs about menstrual synchronization. Instead, she talked about what it might have meant if menstrual synchronization was not happening. The experience and meaning of menstrual synchronization were further amplified by the explanations that all but one participant gave to account for the phenomenon of menstrual synchronization. These are not explanations in an objective sense. Instead, these explanations are facets of the experience of menstrual synchronization.

Meaning

Three participants perceived that the phenomenon could be unfavorable in theory, (e.g., "all hell would break loose..."). But they all decided that it could be beneficial after all. As one put it, "So you add that detrimental to the work place if that happened, but then maybe we could have a therapy group once a week, once a month, during that week, that might be beneficial, too."

While talking about how menstrual synchronization was a positive experience, one woman said,

Right, exactly, and it's a better way of getting along, I think. It's, I've always thought that maybe that was some way of helping people to get along, helping women to get along. Again, I don't know how it happens but we sure do get along better. Because it just happens that way.

In short, most participants said that menstrual synchronization was either a positive ("I definitely think it's a positive thing,") or neutral experience. For another it gave her "support."

Some others were more neutral about this and said that they really did not think or feel about much about menstrual synchronization. One talked about the novelty of it and a couple of the participants expressed a Zen-like appreciation of menstrual synchronization. For example, "It's just a phenomenon." Or, "I think it is something I take for granted. And it isn't something that I analyze or think about, you know. It pretty well is, you know."

Two others believed that it was "neat" or "interesting." For them this indicated some kind of mind-body or spiritual connection to them. Some women said that this factor in their lives was and is special. One said that if it stopped happening she "might feel a little more disconnected from the universe, maybe." For another it meant "maybe I'm supposed to be living with this person."

Two of the participants remarked on how they used to think that when they had their menstrual cycles at the same time as other women it was just a coincidence. But now they do not. "I think there's actually something to it.... it's not just a coincidence." And, "No, it didn't feel like it [a coincidence], especially with the woman I lived with for 10

years."

For most of the women, they typically had come to expect this to happen and continue happening in their lives. "I feel a lot more comfortable with it now because I kind of come to expect it. It's sort of a given to me where in my youth I thought it was a little weird.... I used to think it was really strange. Now, I just kind of come to expect it."

Explanation

Most of the participants humbly shared their explanations. For instance, "It's just something that happens and we don't really understand. We don't have an explanation for it." Or, "I have no idea." Participants explained that menstrual synchronization happened because of the following: "some evolutionary aspect," "hormones," "pheromones," "chemicals," "a physical thing," or being in the "same atmosphere," "the same kind of space," "surroundings," or "because we lived in the same house." Three said that it was because of the cycles of the moon or the full moon, and two of them added that it was due to nature. Two other participants questioned if they had the experience of menstrual synchronization because of chance or because of the moon. Three participants shared that they believed menstrual synchronization was governed by a mind-body connection that is, for instance, "some kind of a psychological thing.... Our bodies kind of follow." For

one, this was related to "energy."

Most of the participants who talked about physical and emotional proximity believed that a certain amount of time in mere physical proximity was enough to experience menstrual synchronicity. Although, one participant maintained that she experienced the need for both emotional and physical proximity, another one held that "the close physical proximity seems like it always works." Yet another said that she did not think it mattered if they were close emotionally.

Two specifically said that perhaps some kind of "sympathy" could be an explanation, and related to that another respondent mentioned "compassion" as an explanation of menstrual synchronization. Along with this participants said that there had to be some sort of "bond." One said that she had to be "emotionally intimate" and another believed in "some kind of unspoken connection." Another used the following metaphor to describe this bond: "I think it's like a bond. Some sort of cord. I don't know. I always see like a cord to me and the person just like with my children or my husband."

Another reason cited to account for this phenomenon was physical and emotional proximity. As one participant eloquently stated:

I think it's a continuum between mind and matter, between energy and matter, you know, that kind of thing, so that would make sense to me, in the sense of the explanation of proximity and emotional closeness, you know. You know proximity would be more matter, I would think, and emotional closeness would be more energy. So you know, I can see that you need to have either one or the other, the masses close to each other or a lot of energy.

In the second interview another participant explained, "I think women who are close emotionally and physically become more in sync and I think being in sync brings women together emotionally."

A participant shared that maybe her older sister's "dominant personality" contributed to her experience of menstrual synchronization. Another one said the following:

The only thing that I think of is that I know we talked about it seemed like for a while, and I can't remember when, that her cycle was trying to follow mine and I know we talked about it briefly and as to maybe why and she said something like, "Well, I think it's because you're the more dominant one." But, as far as what that means, I don't think we really discussed that.

Another shared that to her constant surprise and amazement she was the dominant force. Whenever she entered a new situation the other woman or women involved became synchronized with her menstrual cycle, despite her easy going and flexible nature.

Relationships and Connections

The theme of Relationships and Connections was the most obviously interconnected of the themes. Menstrual synchronization only happened in relation to someone else. It was an interactive experience. The theme of Relationships and Connections had two subthemes that illuminated the nature and context of the relationships that the participants experienced with menstrual synchronization.

Some participants experienced this phenomenon with their lesbian lovers or partners only while others who had the experience with their lovers also noted that they had the experience at work. Vital Relations, as a subtheme, represented those relationships (i.e., with lesbian lovers, room mates, dorm mates, and friends) where menstrual synchronization was most common in this study. Other Relationships (i.e., with family of origin members, co-workers who were also friends, co-workers, and all relationships with women) encompassed those other relationships where, noticeably less often, menstrual synchronization occurred.

Vital Relations

As one participant put it, "I know, Sherri and I would have our periods around the same time. We were together [as lesbian partners] for a year." Another participant, who did not have the experience of menstrual synchronization with

women other than lesbian lovers said that she did not necessarily have the experience with all of the women with whom she had been involved. As she said, "I've had it both ways, where I've lived with women [as lesbian partners] and it's been right on time and when it hasn't been." One woman reported that she was still on the same cycle as a woman who was her lover and then became and continues to be her friend.

Two participants talked about their experiences with dorm mates, while six participants had extensive experience with their room mates and menstrual synchronization. Some participants had forgotten about these experiences until they were in the midst of the first interview. After talking about menstrual synchronization experiences with lovers one said, "Actually I had a room mate about 5, maybe 7, years ago and we synchronized now that you bring it up." The participant who had experienced menstrual synchronization as a pervasive process in her life said, "I've lived primarily with other women since I was in college years ago so I've had a lot of different room mate situations, shared housing kind of thing." Or as another put it, "With my room mate. I lived with a girl several years ago and it happened with us." One woman, having twice lived with the same room mate, experienced menstrual synchronization both times that they lived together. She said, "We lived together for, gosh,

about 3 years the second time. And I don't know whether our periods meshed any faster the second time or not, but it was just the common, you know, I think we probably said, 'Well, it's happened again.'"

As far as friends, fewer participants reported this as the norm for them. One participant said, "We were best friends for two years before moving in together so I was still living at home. So I don't think we synchronized as fast." Another commented, "I think actually, it seems like with my two closest friends, that we generally have our periods around the same time." Still another participant shared, "It usually just happens when I'm close friends with somebody and then, all of a sudden, our periods start slanting at the same time." Later in the interview that same participant said, "Yeah, it's always happened whenever I'm close to a friend, that it, being at work or just a friend, it always, it's always been that way." When menstrual synchronization happened with or among friends the nature of the friendships was characterized as "close."

Other Relations

The one participant who had the experience in nearly every type of context and with all types of relationships said, "It's happened probably I think almost every time that I know of." She recounted menstrual synchronization experiences with her mother, sisters, friends, room mates,

co-workers who were friends, co-workers, and lesbian lovers. One participant only had the experience of menstrual synchronization with her mother and sister. When she lived with her mother and sister while growing up and then again when she lived with her sister as an adult she had this experience. Another participant had the experience with her daughter (and lesbian partners, but not friends or others). And one said, "I think real early on like the first time I really noticed it happening was after I left home, I left my home family and, of course, everyone [mother and three sisters] in my family was on the same cycle."

Despite a patchwork of part-time work settings, one participant noted that she and the women she worked with became synchronized in terms of their menstrual cycle. In relating her experiences she said, "I found that in a lot of places that I've worked, it is all of a sudden these people have kind of synchronized." Another had a similar experience and although they were co-workers and friends, she did not think it mattered that they were friends.

The Effects of Menstrual Synchronization

The last theme, The Effects of Menstrual Synchronization, was the core of the study, the experience of menstrual synchronization. The experiences of all of the participants were captured. All four themes were

inextricably linked to the other themes and subthemes, but this one manifested the experiences of the women.

Two subthemes emerged from this last theme, The Effects of Menstrual Synchronization. Some women had difficulty trying to put their ineffable experiences into words. One aptly said, "I kind of have an idea, but I don't really know how to put it into words." An unexpected but noticeable effect was that some participants talked about their menstrual cycles going toward another and then apart and then back again, a coming-together-and-going-apart-and-coming-together. Though unanticipated by me, nearly all of the participants brought up the other subtheme of this theme, PMS.

Effects

Not all of the participants expressed changes (e.g., visual, tactile, sexual, and so on) related to menstrual synchronization. This was said by one who stated, "No, other than just starting real close together, I'm not aware of anything else." But of those who did experience effects connected to their experience of menstrual synchronization, they were overt. As one respondent said, "I think my body is just more sensitive all the way around. I think my nipples are more sensitive. I think my clit's [clitoris] more sensitive."

There was some variability whether women noticed that

their menstrual cycles changed as they became synchronized with another woman or women or if those around them recalibrated. Those participants who knew that they had very regular, predictable menstrual cycles perceived that they stayed on the same pattern; others caught up or fell behind while becoming synchronized. One interesting finding was that two women reported that they became menstrually synchronized despite one being on oral contraceptives. One participant was on oral contraceptives and others moved to her cycle. In another case, two room mates were both already on the same synchronized cycle, so starting "the Pill" did not alter their patterning. Yet another participant talked about how when her sister started oral contraceptives she remembered their "cycles being kind of whacked for a while and then sort of resettling."

Another maintained continuity with a woman who was a lover, then a friend despite a 6-month separation. In her words, "Well, I was gone for 6 months, and I'm just trying to think because that's more recent. I was gone for 6 months and came back and we were still pretty much in sync at that time.... When I came back, I do remember we were in cycle with each other. Even after I was gone."

Some women in the study experienced a coming-together-and-going-apart-and-coming-together of their menstrual cycles with friends and lovers. One participant shared that

with a friend "it seemed like, 'cause our periods were not the same and then, all of a sudden, Jeannie mainly, our periods started happening at the same time. But then, when I kind of started staying away from her, they're not the same any more." With a lover of ten years, one participant said the following:

And it happened, it seemed like our periods started coming together and they didn't stay that way, but when they diverged, it was like they started trying to come back together. Like, one of us would come, would start earlier. Instead of having the 28 days, it would be 24 days, like we were trying to catch up with the other person. And this seemed to happen several times and then they'd get apart again. Trying to think if they were ever totally off. I think they moved kind of far apart. And then they'd come back together.

Upon examination I noted that, although Participant 01 and Participant 02 did not think they were synchronized with each other, possibly on a quarterly basis they had synchronized menstrual cycles. Between those occasions I and they each noted that they went apart and then came together. It was possible that both were synchronized every 3 months. Table 2. illustrates this, which was corroborated by both Participant 01 and Participant 02.

**Table 2. An Effect of Menstrual Synchronization -
Coming-Together-and-Going-Apart-and-Coming-Together**

Key: [] = every 28 days
 { } = every 21 days
 [{ }] = both beginning their
 menstrual cycle on the same day

SUN	MON	TUE	WED	THUR	FRI	SAT
-----	-----	-----	-----	------	-----	-----

Month One

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	{21}
22	23	24	25	26	27	[28]
29	30					

Month Two

		1	2	3	4	5
6	7	8	9	10	11	{12}
13	14	15	16	17	18	19
20	21	22	23	24	25	[26]
27	28	29	30	31		

Month Three

					1	[2]
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	[23]
24	25	26	27	28	29	30

Premenstrual Syndrome (PMS)

The first participant talked about PMS early in the interview. Initially I thought that I was not asking questions in such a way to discriminate between menstrual synchronization and PMS. But PMS came up in other interviews. It amazed me when two participants described themselves as PMS, not "having PMS," at certain times during their menstrual cycle. Other than that, I did not hear anything new (i.e., other than irritability, tiredness, intolerance, impatience, consuming more alcohol, and so forth) regarding PMS.

The respondents also talked about how they felt about their menstrual cycle per se. They were comfortable and really valued their menstrual cycles or they disliked them. A participant who did not like her menstrual cycle reluctantly said, "I guess if I had to put a positive to it, and I really hate to put a positive to it, it would be that it made me more aware of my body and my emotions..." Another volunteered emphatically, "I hate it!" A more neutral opinion was expressed by a participant who began menstruating at an early age. She said, "When I started menstruating I was 10 so it's been going on for some time now. I'm over it. It's been plenty long, It's okay. I deal with it. If there was an option, I'd probably go for it." A couple of the participants mentioned how much they

appreciate their menstrual cycles for the sense of emotional release they experience. One derived a sense of order from having her menstrual cycles. As one said, "I don't have PMS a whole lot. I know when I'm going to start my period. My body, I can feel it.... Of course, once my period starts, I'm like, oh you know, it's wonderful, I love it." Several participants mentioned that any changes, such as stress at work, colds, taking medications, world-class physical training, interpersonal difficulties, and so on, altered their menstrual cycles in relation to others. Overall, I did not detect any relevant connections or interactions among the participants' experiences of menstrual synchronization, PMS, and how they felt about their menstrual cycle.

Other Codes

While initially thinking about this study I recalled examining the characteristics or attributes of an idea, which Walker and Avant (1983) named concept analysis. Before analyzing the interviews I had decided to look for both contrary and related cases of menstrual synchronization.

Contrary Cases of Menstrual Synchronization

Two contrary cases of menstrual synchronization were noted. One participant said that she did not have the experience of menstrual synchronization with friends, room mates, co-workers, or co-workers who were friends; she had

it only with lesbian lovers and her daughter. She believed that she was contrary with those other than lovers or her daughter because of the time necessary to spend together in the same house. Another one said that she only had experienced it with some lesbian partners. She did not have any thoughts why.

Cases Related to Menstrual Synchronization

From the interviews some participants experienced a coming-together-and-going-apart-and-coming-together of their menstrual cycles in relation to another's. This was discussed above in the section "Effects of Menstrual Synchronization." A related case of menstrual synchronization differed in that there was a going-apart, but not a coming-back-together. The result was a parallel process. One participant who had this experience said, "And then, after I didn't see her that often, then I think it [was] probably like two months. But we're still like a week."

Summary

This chapter provided descriptions of the participants and the development of the four major themes and subthemes that emerged from the transcribed interviews, based on a qualitative analysis approach. The loosely structured interviews produced the data that documented the experience

of women who had or were experiencing menstrual synchronization. The major themes, Knowing Menstrual Synchronization is Happening and When, The Meaning of Menstrual Synchronization, Relationships and Connections, and The Effects of Menstrual Synchronization were related and interconnected with each other. All of the participants described experiences which contributed to the development of the essence and commonalities of the experience of menstrual synchronization. Despite their individual differences, and although the relationships in which this experience occurred varied, a common description emerged. Participant, faculty, and external corroboration of the analysis of the data gave support for the credibility of the meanings, themes, and subthemes of the study. The next chapter presents the discussion, conclusions, implications, and recommendations of the study.

CHAPTER V

DISCUSSION, CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

The menstrual cycle is the most
basic, earthy cycle we have.
Our blood is our connection
to the archetypal feminine.
The macrocosmic cycles of
nature, such as the ebb
and flow of the tides,
and the changes of the
seasons, are reflected
on a smaller scale
in the menstrual
cycle of the
individual
female
body

C. Northrup (1994, p. 97).

Kirk and Miller (1986) identify four sequential phases of qualitative research, which are: invention, discovery, interpretation, and explanation. Chapter III described the invention phase, the research preparation and design. Chapter III also revealed the discovery, or data collection, aspects of the study. The fourth chapter covered the phases of analysis or interpretation which produced understanding of the meaning of the experience of menstrual

synchronization for a group of 13 women. This last chapter is the explanation phase, and it will discuss the findings of the study. After the discussion of the findings, conclusions, implications, and recommendations for further study are presented.

Discussion of the Findings

Before beginning the study, I had one exploratory, descriptive, and comparative research question to answer. Based on the reactions of expert and participant reviewers regarding the richness of the data, the study reveals a collective shared conception of the experience of menstrual synchronization.

Demographic Profile of the Participants

The demographics of this sample are slanted in three ways. First, all of the participants are Caucasian, although they have a variety of ethnic or cultural identities. On the questionnaire all of the participants essentially identify themselves as Caucasian in the race category. It is in the ethnic or cultural identity section that there is much diversity. Second, they are as a group more highly educated than American society. All of the women in this study did attend college. Almost 70 percent hold college degrees and 30 percent did complete professional or graduate school. Because this group is older in comparison to the samples in

previous quantitative studies involving menstrual synchrony, it is not appropriate to compare the groups. As far as geographical differences, none are noted.

Based on the interview data, nine women or 69 percent of the participants, shared information about their experiences with menstrual synchronization in relationship with lesbian partners. The remaining four participants (31%) had the experience in relationships with family members, friends, and co-workers. I do not know if there is such a thing as a representative sample of women, much less of lesbians. Again, the purpose of this exploratory study is not to generalize, but to shine light on the phenomenon of menstrual synchronization. This study, however not by design, is predominantly about the experience of women in lesbian relationships and lesbians were not included in previous studies regarding menstrual synchrony.

Researcher's Perspective

There was an apparent paradox in my doing qualitative research. Beyond having personal familiarity with the phenomenon, I could have been a participant in this study. This by definition means that I was not unbiased. On the other hand, I could more fully explore the phenomenon of menstrual synchronization in a way that goes much deeper and exposes the nuances more than an outsider could. This is because my powers of intuition are best with that with which

I am familiar. The amount of bias is balanced by my sensitivity as a researcher to be faithful to the process and the data.

I was concerned before beginning that the interviews not become psychotherapy sessions. During the first interview I felt anxious because it was the first one and because the participant shared some sensitive content. However, concern about being a therapist was unfounded. There were only a few fleeting moments that I felt anxious or disconnected from participating in the interviews.

The first participant talked about PMS and initially I thought that I was not asking questions that would discriminate between menstrual synchronization and PMS. But from then on I decided to take what I got and not judge it until all of the interviews had been accumulated. Thus, I looked for some connection between the experience of menstrual synchronization, PMS, and how women felt about their menstrual cycles. In its totality, I view this experience from the perspective of Newman (1990): "The nurse-researcher cannot stand outside the person being researched in a subject-object fashion. The researcher is part of the interaction pattern..." (p. 40). Keeping in mind the exploratory nature of the study helped me stay engaged in this process.

Based on my research assumption that reality is "a

multiple set of mental constructions" (Lincoln and Guba, 1985, p. 295), my goal was "to understand a situation as it is seen by the participants" (Dobbert, 1982, p. 260). From the transcribed narrative accounts I initially worked on a metaphorical plane and an essence or metatheme level. I trusted that engaging dynamically in the process would take me to a level that would be meaningful. I did not try to "control" or "force" this.

When I found that I was having expectations, I disengaged from the data by walking, playing with pets, reading, listening to music, cooking, doing nothing, or watching that intuitive detective television show, "Colombo." Doing my favorite mundane mindless-mindful activities, such as doing the dishes and driving, prompted insights and revelations. Fortunately, I had to drive great distances during the mid-phase of the research. Also, I was urged on by frequent and fortuitous synchronistic experiences that I encountered and acknowledged while performing this phenomenological research. For instance, a friend showed me a book that she had unexpectedly received which had a chapter on synchronicity. When it was hard to deal with the ambiguity and anxiety, I spoke with friends (without divulging the participants' confidentiality) about my process or called my dissertation chair. What worked for me was to resolve and meditate: "Reflection, readiness,

openness, immersion are states more than they are actions, and they need to be sustained" (Tesch, 1988, p. 8).

Having done manual content analysis for my master's thesis I cannot say enough about the desirability of using a computerized program for qualitative research. There were difficulties using in QUALPRO, but the speed and ability to collect information across transcripts were exceptionally valuable. Before discussing the research findings, I want briefly to discuss some additional aspects of the research process. They are the richness of the data and the relationship between the researcher and the participants.

Richness of the Data

Each and all of the participants contributed to the findings of the study. From the outset I wanted to reach the "experts," the women themselves. They were all "good" participants, because to greater and lesser degrees, they appeared comfortable and unrestrained in their interactions with me. Moreover, they were open and truthful, provided detail to the best of their ability given the limits of language, stayed on the topic for the most part, and they were thoughtful about and reflected on what they said (Dobbert, 1982). The participants shared their subjective experience and knowledge. I was amazed and gratified by the instant willingness of these women, who did not know me, to talk with me. Two women invited me into their homes after

only speaking on the telephone.

As noted, most of the participants stayed focused on the topic of the interview. When there was divergence, it was usually tangentially related to PMS, menopause, or women's health. A rich example of this comes from the exchange with the participant who taught me about pheromones. The following exchange between the participant-researcher and the researcher-participant, respectively, illustrates this:

If you take a ball point pen and a box of termites and draw a figure eight on a piece of paper and put the termites on top, they'll follow each other along the figure eight.

Because?

Pheromones. Bic has Bic's ink, the basis for the ink in the Bic ball point pen is chemically identical to the pheromones of termites and they will follow it no matter where you go.

Wherever you draw it they will trail?

And you can take a pencil and draw a figure eight and put the termites on it and they don't follow.

I asked one expert nurse practitioner and all of the participants to read the findings of the study. Eleven of the 13 participants read and responded to the third interview. All 11 said that they saw themselves in the prototype and that it was, and for a few now is, reflective of their experience. The nurse practitioner who read the narrative of the themes and subthemes from Chapter IV

validated the study by checking the coding. I had my dissertation chair read portions of the first four interviews. That two nurse consultants reviewed and coded some interviews added to the notion that the interview is a source of rich data. All three outside readers commented on the caliber and interesting content of the data.

As mentioned earlier, with the second interview most participants did not have much to add to the data analysis. Some participants expressed an interest in the findings of the study during the first and second interviews. Two shared that they will begin paying attention in the future, as in the following example: "I'll let you know if and when I have another lover. As of yet I haven't been interested, but this interests me so next time I'll keep track."

In summary, the research process was a valuable one for me and the participants. The benefits of interviewing, (i.e., catharsis, self-acknowledgement, sense of purpose, self-awareness, empowerment, and healing), as discussed by Hutchinson et. al (1994), are apparent in the study.

The Research Findings

This discussion of the research findings illuminates the phenomenon of menstrual synchronization. It delves deeper into the four themes and goes beyond the identification of the themes, which was presented in Chapter IV. The abstract description or focal meaning (Leininger,

1985) of each theme, in the words of the researcher, are in the background of the study. Yet each reflects the essence of the phenomenon from the perspective of the participants. What follows presents and discusses the relationship between the themes and their focal meaning.

The focal meaning of the first theme, Knowing Menstrual Synchronization is Happening and When, is:

For these participants, the experience of knowing how and when menstrual synchronization took or takes place is bounded by their physical, material existence and tied to the chronological limits of time.

As a manifestation of the concept boundary this theme expresses the tangible aspects of the phenomenon. If, as Combs and Holland (1990) and Peat (1987) purport, synchronicity is the synapse between mind and matter, this theme shows part of the material aspects of menstrual synchronization. The next theme highlights the tacit aspects of the phenomenon.

The focal meaning of the second theme, The Meaning of Menstrual Synchronization, is:

A perception encompassing their experience gives meaning to the experience which is explained by a combination of biological, psychological, and natural factors.

In this context "explained" is a facet of the emergent meaning of the phenomenon. This theme is related to the first type of synchronization that Jung (Bolen, 1979) noted. That is, there is a coincidence between the participants' mental content (i.e., the thoughts, opinions, knowledge, feelings, values, and beliefs) regarding menstrual synchronization and an outer event, such as reported, the cycles of the moon, physical proximity, or emotional proximity.

The third theme, Relationships and Connections, has the following focal meaning:

The wisdom of menstrual synchronization is embodied in the participants' relationships.

For participants who had this experience from afar, or found out after the fact that they were menstrually synchronized with another or others, there is a connection to Jung's second group of synchronistic events. This is coincidence "with an event that is taking place at a distance (and is later verified)" (Bolen, 1979, p. 16). Bolen says Jung means that the event would be connected to a dream or vision. Menstrual synchronization is a meaningful, beneficial vision influenced by spiritual, physiological or, psychological conditions. For those who envision that menstrual

synchronization will happen again in their life, Jung's third category of synchronistic events fits. In this category, the participant has a vision or premonition about it happening in the future, which then does occur (Bolen, 1979). In terms of relationships and connections, there are two interesting findings.

First, none of the women talk about their personal relationships and experiences regarding menstrual synchronization and all women in general. During the third interview one respondent comments that it surprises her that the other participants do not talk about "a sisterhood thing and this [menstrual synchronization]." (During the first interview she said that for her it was not "a kind of sisterhood thing.") Although menstrual synchronization only happens in relation to another woman or other women, it stuns me that participants do not talk about how menstrual synchronization influences their relationship with the self. (I had anticipated this when constructing the General Interview Guide, but apparently did not pursue it.) This theme and its focal meaning, are most obviously interconnected to the other themes and focal meanings.

The fourth theme, The Effects of Menstrual Synchronization, has this focal meaning:

Despite tacit and overt effects, there is not a

connection among the participants' experiences of menstrual synchronization, PMS, and how they felt about their menstrual cycle.

However, this theme captures the experiences of all of the participants. Significantly, a third of the participants talk about a pattern of coming-together-and-going-apart-and-coming-together of menstrual synchronization, which will be discussed further.

The general, synthesized, fundamental description of the themes and meaning of the phenomenon follows. I created this description through an elemental synthesis of the data that simultaneously reduced the data by abstracting to a higher level of reality (Tesch, 1988). Necessarily it merges the interconnections among the four themes of menstrual synchronization. It is indicative of the general, subjective experience of all 13 participants. The fundamental description is:

Taking place within one week to a year, the experience of menstrual synchronization is the tacit or overt awareness of the pattern of a significant coming together of a woman's menstrual cycle in relation (emotionally, physically, or both) to another woman(en). As a natural event, it is explained by any combination of physical, emotional, mental, psychological, bodymind-spirit, organic, as well as lunar factors.

Conclusions

The derived conclusions of the study are:

1. All of the participants validated the importance of the research question by eagerly participating in the study through the first two interviews. Eleven of the 13 participants participated in the third interview. A few have plans to pay closer attention to the experience of the phenomenon of menstrual synchronization.

2. A multidimensional picture of the experience of menstrual synchronization is available as described from the information obtained from the study. The study explored and compared the experiences of a group of 13 women who had experienced the phenomenon of menstrual synchronization. Some common elements are: the awareness of knowing how overtly and tacitly menstrual synchronization happens and in what time frame, the range of personal meanings of menstrual synchronization, the types of relationships and connections associated with the experience of menstrual synchronization, and the obvious and subtle effects and experiences of menstrual synchronization, although there is not a connection among the participant's experiences of menstrual synchronization, PMS, and how they felt about their menstrual cycle. This study highlights the importance of qualitative research in the analysis of an idea to discover the reality of the women who had experienced menstrual

synchronization.

3. Beyond describing the experience of menstrual synchronization, meaning or significance is approached by attempting to discover the details of the context and relevance of the experiences that the participants had by comparing their perceptions.

4. A forth major conclusion is that there is a reciprocal relationship between the participants' experiences and those hypothesized explanations for menstrual synchrony found in the reviews of the literature.

5. A noticeable conclusion of the study is that the participants did not disclose significant content indicative of how this experience affected their particular relationship with the self or women in general. This is in light of the fact that the context of the interviews was relational and despite not being limited only to relationships with others.

6. Both the process and findings of qualitative research are significant to both the researcher and the participants. The participants found the interactive interview interesting. During the initial and second interviews many asked to be told of the findings.

7. The method and philosophy of phenomenology used to focus on the experience and knowledge of women demonstrates that, while being sensitive to each woman as a unique and

worthy individual, an appreciation of the whole of the experience evolves from the aggregated experiences of all of the participants.

8. If synchronicities are the liaison between mind, matter, and patterns within the unconscious mind accompanied by physical patterns in the outer world (Peat, 1987), then menstrual synchronization can be viewed as a transformative and transcendent process and reality.

In summary, the analytical and empirical analyses and findings of the study present potential implications concerning education, research, practice, and theory.

Implications for Education, Research, Practice, and Theory

Education Implications

Continuing to engage in qualitative research, which I had tasted during my master's level nursing thesis, was imperative for me. During this study nursing qualitative guidelines, standards, chapters in textbooks, and books became available, sometimes right when I needed them. When I began the study there was very little in the way of nursing currency in the bank as far as qualitative approaches and methods were concerned. It was more difficult, but enriching, for me to sift through the preexisting nonnursing body of literature regarding qualitative research.

Nursing textbooks do not discuss phases of the

menstrual cycle as part of the normal, healthy functioning of women, except recently for the menopause. Unfortunately, most of the academic resources of nursing are still permeated with a medical or illness model mentality. To see more deeply into the structure of health, nursing education requires an approach that gives equal weight to subjective experience and objective analysis. If nursing is to subscribe to the notion that health and all healing begins within, nursing education must shift directions and keep checking its course. Reductionism is of limited use in a holistic universe. It fails to grasp the essence of experience. Not considering relationships and interrelationships beyond the body, an example of this changed course is:

From the perspective of the body, the mutual coordination of functions, the organization of flows, and the harmonization of structures appear almost as synchronicities. Indeed, they are synchronicities of living organisms for they involve meaningful coincidences in which the meaning lies within the context of the body's ordered functioning and the coincidence involves the precise synchronization (or coincidence) of events occurring in remote parts of the body. While at one level it is possible to analyze these organic synchronicities in terms of the release of hormones, blood sugars, neurotransmitters, and so on, at another level these patterns are a function of the body as a whole and an expression of its meaning (Peat, 1987, p. 61, [*italics deleted*]).

Although the phenomenological method is the one of

choice to answer the research question, my background in philosophy influenced how I asked the question. I am grateful that it will be less difficult in the future for others to use this method due to the increased and expanded nursing knowledge base. In addition, there has been a phenomenal leap as far as the preparation and familiarity of nursing faculty with qualitative research in general and phenomenology in particular. Lastly, there is a need for nurses to be educated in the availability of computer programs that are suitable for use with qualitative research.

Research Implications

"Although studying women is not new, studying women from the perspective of their own experiences, as they understand themselves and the world, is quite unprecedented" (Hall and Stevens, 1991, p. 17). Specifically, there is a great need to pursue further research, especially with the phenomenological method of the study, on the phenomenon of menstrual cycles and menstrual synchronization. Most menstrual cycle research has focused on negative aspects and problems associated with the menstrual cycle, usually PMS and dysmenorrhea (Patterson and Hale, 1985). In other words, there is a dearth of research on the healthy aspects of menstruation. To expose these aspects, a new researcher-participant paradigm (Connors, 1988), in a framework of

discussion, reciprocity, and collaboration must be adopted in the domain of nursing research. Untangling the "knot patriarchy has made of this basic life experience" (Culpepper, 1992, p. 282) can progressively lift the curse of menstruation (Golub, 1985).

The implication is that in nursing qualitative, quantitative, and personal research regarding menstrual synchronization should proceed to expand the body of knowledge regarding this aspect of women's health. The development of a questionnaire naturally flows from the study. Triangulating qualitative and quantitative results, for example, by concurrently measuring hormonal levels, human pheromone, and temporal lobe brain activity, or all these, over the cycle of women experiencing menstrual synchronization might yield valuable data regarding physiological indicators of synchronization. Combining the subjective experience and meaning of menstrual synchronization with the objective measures might yield valuable information about the connections made between mental states and physical processes. For example, Honegger (1979) proposes that meaningful coincidences are externalized processes controlled by a language center that is located in the right hemisphere of the brain. One participant wondered whether her meditation was more intense when she was concurrently experiencing menstrual

synchronization. Here is another area to research: whether with or without meditating, is there a balanced and synchronized brain state during menstrual synchronization?

Two specific implications arise from the study. One is future research with adolescents about menstrual synchronization. The other is to study women who are currently experiencing the phenomenon of menstrual synchronization instead of relying on memory to provide the bulk of the data. A concurrent study of women experiencing menstrual synchronization would yield even richer material, since much of the data of this study is based on the memory ability of the participants. Obviously, replicating this study in the United States with a more diverse and representative population could yield myriad experiences.

A more in-depth assessment and analysis of the relationships in which menstrual synchronization occurs would also be valuable. Deeper probing of the dynamics and caliber of the relationships involved with the experience of menstrual synchronization might provide valuable insights into the themes already developed and how they are interconnected. Further research on the coming-together-and-going-apart-and-coming-together phenomenon reported by some participants could be very fruitful. Also, I did not ask or obtain information about the age of menarche, except from one participant. Does the age of menarche have any

connection with menstrual synchronization?

Further research regarding menstrual synchronization and contraceptive techniques is warranted. One interesting finding is that women report that they became menstrually synchronized despite oral contraceptives. These instances are discussed above in the section regarding The Effects of Menstrual Synchronization. The experiences are contrary to what Northrup (1994) maintains, which is that women taking oral contraceptives do not become "ovarian sisters" (p. 113).

Burge (1992) and others, including Martha Rogers (1983a), have written about nurses living and working in space. If there is any bearing related to the experience of menstrual synchronization here is uncharted research. As more women and nurses venture away from the earth, there is a need to research the experience in light of menstrual synchronization. Correlational studies of menstrual synchronization and the cycles of the moon also could be done.

Practice Implications

Nursing interventions arise out of talking with the participants in the study and hold implications for nursing practice. First, the interview itself can be viewed as a nursing intervention. While it is important to complete the paperwork, taking the time to get a broader report of a

client's total health, letting her be the guide and actively involved in making choices regarding her wellness, can only be accomplished by taking the time to hear her story.

In a practice arena that is more broadly conceived, interviews are voluntary, open-ended, and reciprocal. This places some power in the hands of the interviewee (Cassell, 1978). It is worth finding out how what women know and how they feel about their menstrual cycle. According to Nagy (1987), if women believe that menstruation is unattractive, they will also think that their sexuality is unattractive. Teaching women about the possibility of experiencing menstrual synchronization as part of their menstrual cycle life would be beneficial and remove some of the mystery of menstruation. That is, menstrual synchronization need not be a mystery of menstruation. Encouraging women to keep menstrual cycle calendars would help women to gain knowledge about their cycle functions and connections. From the present extended current knowledge about menstrual synchronization, nurses can develop interventions to help women in knowing about it and how it affects their lives.

There are further implications as far as healing is concerned. What if, as Slayton (1990) asks, the cycle of women is the model for ancient medicine and healing? Northrup (1994) and others say that the physical body is a manifestation of ideas and thinking. Further, Northrup says

that, in part, honoring our cyclic and intuitive natures goes hand-in-hand with women's wisdom. First, women who have close relationships with others usually have shorter and more regular cycles while women who socially isolate themselves generally have more irregular cycles (McClintock, 1971). Talking about menstrual synchronization and social interaction patterns can open the door for insights. As Elizabeth Barrett (1990), an advocate of Martha Rogers' practice methodology states, deliberative mutual patterning is "the continuous process whereby the nurse with the client patterns the environmental field to promote harmony related to health events" (p. 33). The nurse acts to facilitate a woman taking steps to change, in this instance, patterns of interaction with other women to achieve shorter and more regular menstrual cycles. If so, the client will need to know that if she makes this change there is a possibility that she will then experience menstrual synchronization. In turn, the nurse can educate the client as to what this means and what can be expected.

Second, there is a connection between immunity and menstrual cycles (Northrup, 1994). Part of the role of the nurse is to provide holistic awareness education that includes these findings. Assessing and including teaching about a woman's understanding of the aspects her menstrual cycle has value. Honoring the validity of her monthly cycle

is indicated as an important concern for practicing nurses to help convey an understanding of the patterns and rhythms of health. Barrett (1990) describes this practice as pattern appraisal. She defines pattern appraisal as follows:

"Pattern manifestation appraisal is the continuous process of identifying manifestations of the human and environmental fields that relate to current health events" (p. 33). In practice, the nurse would identify menstrual synchronization as a manifestation of pattern in a woman's human field and environmental field, acknowledging the integral nature of the two fields.

"Healing is always creative, bringing forth patterns and connections that did not exist before" (Quinn, 1989, p. 555). Through teaching imagery, meditation, visualization, and other focusing techniques women can entrain to follow the moon which may harmonize the menstrual (and electromagnetic) tides of the body (Farias, 1988). This health and wellness teaching done by a nurse who intentionally uses expanded consciousness can be a healing environment (Quinn, 1992).

Theoretical Implications

The goal for my study was to explore, describe, and compare the essential structure of menstrual synchronization from the perspective of women who had experienced the phenomenon. Aspects of Rogers' (1970, 1980a, 1980b, 1983a,

1983b, 1986, 1990) conceptual framework, such as focusing on a unitary, holistic view of the person, viewing the person as a whole that is more than and different from the sum of its parts, and the participants' characteristic energy fields in an integral, mutual process with their environments, were evident in the study.

The emerging view of our world includes the concepts that the human being is a nonmaterial, multidimensional field integral with the environment/universal field, that consciousness is nonlocal, unbounded by physical structure and function, and that separation of the individual from all other individuals is an illusion (Quinn, 1992, p. 28).

This study tangentially explores the resonance of human energy fields.

Some participants share that perhaps they are menstrually synchronized with many women in their lives without knowing it. If the interaction between human and environmental fields is continuous, mutual, and simultaneous this might true, as the unitary person and the environment are one. The insight gleaned from Rogers' conceptual system is: One would expect more harmonious interactions between women who have a bond since their patterns might be more synchronous than the interactions between women with whom patterning has not occurred (Gaydos & Farnham, 1988). Indeed, some women in the study confirm or believe this to

be true. Another implication is that this dynamic, mutual interaction can be viewed as wave patterns. I note the pattern some participants had regarding the coming-together-and-going-apart-and-coming-together of their menstrual cycles. This phenomenon may be related to the caliber of the relationship(s) in which it occurs. Regardless, the way energy fields manifest is characterized by organized patterns.

Over time it is possible that the coming-together-and-going-apart-and-coming-together phenomenon is a manifestation of an increase in richness and complexity, which is related to Rogers' (1970) principle of integrality. The principle of integrality assumes that there are increasing differentiation, heterogeneity, diversity, and complexity of pattern. Increasing diversity and innovation suggest a positive relationship between field patterns.

One participant uses the term resonating when describing her perspective as to the explanation of menstrual synchronization:

Yeah, and maybe, I think probably what happens is you synchronize with other people, in the sense that you can do it either by living in close proximity with them for any period of time, whether it be a week or a couple of weeks or you can synchronize with them by getting to know them well and by kind of resonating with them as a person, you know. So my guess would be it's something like that.

In terms of menstrual synchronization, Rogers' principle of resonancy holds that change is rhythmic or cyclic in nature. When two rhythmic wave patterns are, over time, synchronized the result is a reinforced wave that synergistically is twice the amplitude of either alone; this is resonance. For the participants who talk about maintaining a pattern of menstrual synchronization with another, despite time and distance, the principle of resonancy posits that there is an interaction of energy fields as they become and maintain the spontaneous environment to each other. For those who discuss their experiences of becoming unsynchronized with others due to stress, the principle of resonancy posits that if there is a change, it then proximately occurs within the other women as an outcome of the field interaction.

The purpose of the research is to describe the experience of menstrual synchronization from the perspective of women. Additional research in this area would more clearly define and advance the subjective sense of meaning, or in Jung's terminology (Bolen, 1984), numinosity, of the experience of menstrual synchronization. Widely published, Orenstein (1993) uses storytelling to share her experiences with synchronicity per se. She says:

These patterns of synchronicity, manifesting as signs,

symbols, and omens, have convinced me existentially (as opposed to theoretically) that this world is sacred reality. By calling sacred the events in the material world, I am challenging the dualistic and hierarchal thinking of patriarchy that proclaims spirit to be superior to matter (p. 169).

During a transition, such as menstrual synchronization, the nonphysical dimensions of being--spiritual, social, and psychological, for example--may grow and strengthen during the experience (Jones and Meleis, 1993).

It was not my purpose to test either Rogers' (1970) or Jung's (1973) models, but I was open to the possibility of qualitative research generating further theory (Leininger, 1992). I did generate descriptions and insights about the experience of menstrual synchronization from women, something that had not been previously documented, which is also extremely valuable, according to Leininger (1992).

Recommendations for Further Study

Based on the findings of the research and the conclusions and implications of this study, I have several recommendations for further study:

1. Exploring the participants' experience of menstrual synchronization with other synchronistic experiences, such as dreams, visions, or premonitions in their lives would

provide further theoretical validity.

2. Rogers' (1970) principle of resonancy implies that health is a mutually enhancing expression of the full life potential. Although I believe that menstrual synchronization is an instance of health, I did not specifically ask the participants if they perceived menstrual synchronization as healthy. Further qualitative research regarding menstrual synchronization might include the structured question, "Do you believe that menstrual synchronization is a healthy phenomenon?"

3. To investigate further the principles of integrality and resonancy another line of inquiry is, "Tell me about how menstrual synchronization has affected your relationships."

4. Further research regarding menstrual synchronicity and intuition is warranted.

In summary, women who have experienced the phenomenon of menstrual synchronization might benefit from the knowledge and skills of the nurse who is sensitive to the experience. Listening to these narratives highlights the richness and depth of women's experiences with health. The sharing that takes place during an interview enriches the lives of both the woman and the nurse.

The following poem by Barbara Raisbeck (1993) issues forth the elements of the study perspective:

Staining Herstory with Wisdom

As the moon full and glowing
ascended into the night sky
illuminating the earth below
our ancient sisters celebrated
the energy and fruitility
that enlivened their bodies
with the release of the ovarian seeds
The moon waning
casting less light
creating more shadows
turning full to empty
the light obscured by the darkness
signaling the letting go of the life blood
sisters bleeding in unison
shedding their dark mysteries
giving birth to their flowering womb an hood
intuiting life's messages
dripping with truth
staining herstory with wisdom.

References

- Baring-Gould, S. (1967). Curious myths of the middle ages. New York: University Books.
- Barrett, E. A. M. (1990). Rogers' science based nursing practice. In E. A. M. Barrett (Ed.), Visions of Rogers' science based nursing (31-44). New York: National League for Nursing.
- Beck, C. M., Rawlins, R. P. & Williams, S. R. (Eds.) (1984). Mental health-psychiatric nursing a holistic life-cycle approach. St. Louis, MO: The C.V. Mosby Company.
- Belle, D. (1987). Gender differences in the social moderators of stress. In R.C. Barnett, L. Biener, & G. K. Baruch (Eds.), Gender and stress (257-277). New York: Free Press.
- Benedek, T. (1973). The correlations between ovarian activity and psychodynamic process. In T. Benedek (Ed.), Psychoanalytic investigation (129-223). New York: Quadrangle/New York Times Book Company.
- Benner, P. (1985). Quality of life: A phenomenological perspective on explanation, prediction and understanding in nursing science. Advances in Nursing Science, 8(1), 1-14.
- Bevis, E. O. (1982). Curriculum building in nursing a process (3rd ed.). St. Louis, MO: The C.V. Mosby Company.
- Blackman, B. (1993). QUALPRO textbase and productivity tools (Version 4.0). Tallahassee, FL: Impulse Development Company.
- Bolen, J.S. (1979). The tao of psychology synchronicity and the self. San Francisco: Harper & Row, Publishers.
- Bolen, J.S. (1984). Goddesses in everywoman a new psychology of women. New York: Harper Colophon Books.

- Boulding, E. (1979). The underside of history: A view of women through time. Boulder, CO: Westview.
- Buchsbaum, T. (1993). Synchronicity. In THE Magazine, June 1993, Santa Fe, NM, 61.
- Buckley, T. (1982). Menstruation and power of Yurok women: Methods in cultural reconstruction. American Ethnologist, 9(1), 47-60.
- Buckley, T. & Gottlieb, A. (Eds.) (1988). Blood magic the anthropology of menstruation. Berkeley, CA: University of California Press.
- Burkert, W. (1985). Greek religion. (J. Raffan, Trans.). Cambridge, MA: Harvard University Press.
- Burge, J. M. (1992). Living and working in space: Evolution of nursing in a new environment. Holistic Nursing Practice, 6(4), 67-74.
- Burns, N. (1989). Standards for qualitative research. Nursing Science Quarterly, 2(1), 44-52.
- Burns, N. & Grove, S. K. (1987). The practice of nursing research conduct, critique and utilization. Philadelphia, PA: W.B. Saunders Company.
- Cassell, J. (1982). Harms, benefits, and rights to subjects of fieldwork. In J. Seiber (Ed.), The ethics of social research (7-32). New York: Springer Verlag.
- Caudill, W. & Weinstein, H. (1969). Maternal care and infant behavior in Japan and America. Psychiatry, 32(1), 12-43.
- Cobb, A. K. & Hagemaster, J.N. (1987). Ten criteria for evaluating qualitative research proposals. Journal of Nursing Education, 26(4), 138-143.
- Coliazzzi, P. F. (1978). Psychological research as the phenomenologist views it. In R. Vaile & M. King (Eds.), Existential phenomenological alternatives for psychology. New York: Oxford University Press.
- Combs, A. & Holland, M. (1990). Synchronicity science, myth and the trickster. New York: Paragon House.

- Connors, D. D. (1988). A continuum of researcher-participant relationships: An analysis and critique. Advances in Nursing Science, 10, (4), 32-42.
- Cornwell, D. G. (1990). A study of estrus synchronization with PGF2ALPHA in Brahman heifers: Proposal of a new system. Dissertation Abstracts International [CD-ROM]. Abstract from: ProQuest File: Dissertation Abstracts-B Item: AAC 9028506.
- Culpepper, E. E. (1992). Menstruation Consciousness raising: A personal and pedagogical process. In A. J. Dan & L. L. Lewis (Eds.), Menstrual health and women's lives (274- 284). Chicago: University of Illinois Press.
- Cutler, W. B., Garcia, C. R. & Krieger, A. M. (1979). Sexual behavior frequency and menstrual cycle length in mature premenopausal women. Psychoneuroendocrinology, 4(4), 297-309.
- Cutler, W. B., Preti, G., Huggins, G. R., Erickson, B. & Garcia, C. R. (1985). Sexual behavior frequency and biphasic ovulatory type menstrual cycles. Physiology and Behavior, 34(5), 805-810.
- Daly, M. (1987). Webster's first new intergalactic wickedary of the English language conjured by Mary Daly... in cahoots with Jane Caputi. Boston: Beacon Press.
- Delany, L., Lupton, M. J. & Toth, E. (1976). The curse: A cultural history of menstruation. New York: Dutton and Company.
- Demetrakopoulos, S. (1983). Listening to our bodies the rebirth of feminine wisdom. Boston: Beacon Press.
- Dobbert, M. (1982). Ethnographic research. New York: Praeger.
- Dossey, B. M., Keegan, L., Guzzetta, C. E. & Kolkmeier, L. G. (1988). Holistic nursing a handbook for practice. Rockville, MD: Aspen Publishers, Inc.
- Doty, R. L. (1981). Olfactory communication in humans. Chemical-Senses, 6,(4), 351-376.
- Ellis, R. (1982). Conceptual issues in nursing. Nursing Outlook, 30(7), 406-410.

- Ermarth, M. (1978). Wilhelm Dilthey: The critique of historical reason. Chicago: The University of Chicago Press.
- Falco, S. M. & Lobo, M. L. (1980). Martha E. Rogers. In J. B. George (Chair), Nursing theories the base for professional nursing practice (164-183). Englewood Cliffs, NJ: Prentice-Hall, Inc.
- Farias, H. (1988). The college of hera the first seven lessons. Clear Lake, WA: Juno's Peacock Press.
- Fawcett, J. (1984). Analysis and evaluation of conceptual models of nursing. Philadelphia: F. A. Davis Company.
- Fisher, E. (1979). Woman's creation: Sexual evolution and the shaping of society. Garden City, NY: Anchor Press.
- Fluhman, C. F. (1956). The management of menstrual disorder. Philadelphia: Saunders.
- Ford, J. (1975). Paradigms and fairy tales. (Vols. 1-2). London: Routledge & Keegan Paul.
- Francia, L. (1988). Dragontime, magic and mystery of menstruation. Woodstock, NY: Ash Tree Publishing.
- Fraser, J. T. (Ed.) (1981). The voices of time a cooperative survey of man's views of time as expressed by the sciences and the humanities (2nd ed.). Amherst, MA: The University of Massachusetts Press.
- Gaydos, L. S. & Farnham, R. (1988). Human-animal relationships within the context of Rogers' principle of integrality. Advances in Nursing Science, 10(4), 72-80.
- Gimbutas, M. (1989). The language of the goddess. San Francisco: Harper & Row, Publishers.
- Glaser, B. G. & Strauss, A. L. (1967). The discovery of grounded theory: Strategies for qualitative research. Chicago: Aldine.
- Golub, S. (Ed.). (1985). Lifting the curse of menstruation: A feminist appraisal of the influence of menstruation on women's lives. New York: Harrington Park Press.

- Graham, C. A. (1991). Menstrual synchrony: An update and review. Human Nature, 2(4), 293-311.
- Graham, C. A. & McGrew, W. C. (1980). Menstrual synchrony in female undergraduates living on a coeducational campus. Psychoneuroendocrinology, 5(3), 245-252.
- Graham, C. A. & McGrew, W. C. (1992). Social factors and menstrual synchrony in a population of nurses. In A. J. Dan and L. L. Lewis (Eds.) (1992). Menstrual health in women's lives (246-253). Chicago, IL: University of Illinois Press.
- Grahn, J. (1993). Blood, bread, and roses how menstruation created the world. Boston: Beacon Press.
- Guba, E. G. (1981). Criteria for assessing the trustworthiness of naturalistic inquiries. Educational Communication and Technology Journal, 29(2), 75-92.
- Guba, E. G. & Lincoln, Y. S. (1981). Effective evaluation improving the usefulness of evaluation results through responsive and naturalistic approaches. San Francisco: Josey Bass, Inc., Publishers.
- Hall, J. M. & Stevens, P. E. (1991). Rigor in feminist research. Advances in Nursing Science, 13, (3), 16-29.
- Harding, M. E. (1990). Women's mysteries. Boston: Shambala.
- Honegger, B. (1979). Spontaneous waking state-state psi as interhemispheric verbal communication. San Francisco: Washington Research Center.
- Hutchinson, S. A., Wilson, M. E. & Wilson, H. S. (1994). Benefits of participating in research interviews. Image: Journal of Nursing Scholarship, 26, (2), 161-164.
- Iglehart, H. (1983). Womanspirit: A guide to woman's wisdom. San Francisco: Harper.
- Jacob, E. (1987). Qualitative research traditions: A review. Review of Educational Research, 56, (1), 1-50.
- Jarett, L. R. (1984). Psychosocial and biological influences on menstruation. Psychoneuroendocrinology, 9(1), 21-28.

- Jones, P. & Meleis, A. (1993). Health as empowerment. Advances in Nursing Science, 15(3), 1-14.
- Jung, C. G. (1951). On synchronicity. In H. Read, M. Fordham & G. Adler (Eds.), Collected works of C.G. Jung (Vol 8, Bollingen Series XX, R.F.C. Hull, Trans.) (520-531). Princeton, NJ: Princeton University Press.
- Jung, C. G. (1955). The interpretation of nature and the psyche synchronicity: An acausal connecting principle. New York: Pantheon Books, Inc.
- Jung, C. G. (1969). The structure and dynamics of the psyche (2nd ed.). Princeton, NJ: Princeton University Press.
- Jung, C. G. (1973). Synchronicity an acausal connecting principle. Princeton, NJ: Princeton University Press.
- Kabadi, M.B. (1985). Intravaginal controlled administration of flurogestone acetate. Dissertation Abstracts International [CD-ROM]. Abstract from: ProQuest File: Dissertation Abstracts-B Item: AAC 8507117.
- Kammerer, P. (1919). Das gesetz der serie. Stuttgart and Berlin: Versags-Ansalt.
- Kiltie, R. (1982). On the significance of menstrual synchrony in closely associated women. American Naturalist, 119(3), 414-419.
- Kirk, J. & Miller, M. L. (1986). Reliability and validity in qualitative research. Newbury Park, CA: SAGE Publications.
- Knight, C. (1983). Levi-Strauss and the Dragon: Mythologies reconsidered in the light of an Australian aboriginal myth. Man, 18(1), 21-50.
- Knight, C. (1988). Menstrual Synchrony and the Australian Rainbow Snake. In T. Buckley and A. Gottlieb, (Eds.) Blood magic: The anthropology of menstruation (232-235). Berkeley: University of California Press.
- Knight, C. (1991). Blood relations: Menstruation and the origins of culture. New Haven, CT: Yale University Press.

- Laing, J. (1988). Self-report: Can it be of value as an assessment technique? Journal of Counseling and Development, 67(1), 60-61.
- Lander, L. (1988). Images of bleeding menstruation as ideology. New York: Orlando Press.
- Leininger, M. (1970). Nursing and anthropology: Two world to blend. New York: John Wiley & Sons.
- Leininger, M. M. (Ed.). (1985). Qualitative research methods in nursing. New York: Grune & Stratton, Inc.
- Leininger, M. (1992) Current issues, problems, and trends to advance qualitative paradigmatic research methods for the future. Qualitative Health Research, 2, (4), 392-415. Newbury Park, CA: Sage Periodical Press.
- Leonard, V. W. (1989). A Heideggerian phenomenologic perspective on the concept of the person. Advances in Nursing Sciences, 11(4), 40-55.
- Liggera, L. (1976). Invocation. In M. Cheney and Silverstein, D. (Eds.), All our lives: A women's song book (76). Baltimore, MD: Diana Press.
- Lincoln, Y. S. & Guba, E. G. (1985). Naturalistic inquiry. Newbury Park, CA: Sage Publications.
- Lofland, L. (1971). Analyzing social settings: A guide to qualitative observation and analysis. Belmont, CA: Wadsworth.
- Malinsky, V. M (Ed.) (1986). Explorations on Martha Rogers' science of unitary human beings. Norwalk, CT: Appleton-Century-Crofts.
- Marshall, C. & Rossman, G. B. (1989). Designing qualitative research. Newbury Park, CA: Sage Publications.
- McClintock, M. (1971). Menstrual synchrony and suppression. Nature, 229(1), 244-245.
- McClintock, M. (1981). Major gaps in menstrual cycle research: Behavioral and physiological controls in a biological context. In P. Komnenich (Ed.), The menstrual cycle research and implications for women's health (Vol. 2., 8). New York: Springer Publishing Company.

- Meleis, A. I. (1989). International research: A need or a luxury? Nursing Outlook, 37(3), 138-142.
- Miles, M. B. & Huberman, A. M. (1984). Qualitative data analysis: The sourcebook of new methods. Beverly Hills, CA: Sage Publications.
- Montgomery, R. E. (1974). A cross-cultural study of menstruation, menstrual taboos and related social variables. Ethos, 2(2), 137-170.
- Morse, J. M. (1986). Quantitative and qualitative research: Issues in sampling. In P. L. Chinn (Ed.), Nursing research methodology issues and implementation (181-193). Rockville, MD: Aspen Publications, Inc.
- Morse, J. M. (Ed.) (1989). Qualitative nursing research a contemporary dialogue. Rockville, MD: Aspen Publications, Inc.
- Munhall, P. & Oiler, K. (1986). Nursing research: A qualitative perspective. Norwalk, CT: Appleton-Century-Crofts.
- Musawa, (Ed.) (1993). We'moon '94: Gaia rhythms for womynn (np). Estacada, OR: Mother Tongue Ink.
- Nagy, M. (1987). Menstruation and shamanism. In L. Mahdi, S. Foster & M. Little (Eds.), Betwixt & between: Patterns of masculine and feminine initiation (228-229). La Salle, IL: Open Court.
- National League for Nursing. (1979). Baccalaureate education in nursing: Purpose, philosophy, conceptual framework. New York: National League for Nursing (Pub. No. 15-1804).
- Newman, M. (1986). Health as expanding consciousness. St. Louis, MO: C.V. Mosby.
- Newman, M. (1990). Newman's theory of health as praxis. Nursing Science Quarterly, 3,(1), 37-41.
- Nicholas, D. R. & Gobble, D. C. (1990). On the importance of disregulatory processes in models of health. American Psychologist, 45(8), 981-982.

- Nicholas, D. R., Gobble, D. C., Crose, R. G. & Frank, B. (1992). A systems view of health, wellness, and gender: Implications for mental health counseling. Journal of Mental Health Counseling, 14(1), 8-19.
- Noble, V. (1992). Shakti woman. San Francisco: Harper San Francisco.
- Northrup, C. (1994). Women's bodies, women's wisdom. New York: Bantam Books.
- Oiler, K. (1980). Phenomenologic perspectives in nursing. Unpublished doctoral dissertation, Columbia University, New York.
- Orenstein, G. F. (1993). Synchronicity and the shaman of Samiland. In V. Noble (Ed.), Uncoiling the snake: Ancient patterns in contemporary women's lives (167-189). New York: HarperCollins Publishers.
- Osberg, T. M. (1989). Self-report reconsidered: A further look at its advantages as an assessment technique. Journal of Counseling and Development, 68(1), 111-113.
- Parse, R. R. (1981). Man-living-health: A theory of nursing. New York: John Wiley & Sons.
- Parse, R., Coyne, B. & Smith, M. J. (1985). Nursing research: Qualitative methods. Bowie, MD: Brady Communications Company.
- Patterson, E. T. & Hale, E. S. (1985). Making sure: Integrating menstrual care practices into activities of daily living. Advances in Nursing Science, 7,(3), 18-31.
- Patton, M. Q. (1980). Qualitative evaluation methods. Beverly Hills, CA: Sage Publications.
- Patton, M. Q. (1987). How to use qualitative methods in evaluation. Newbury Park, CA: Sage Publications.
- Peat, F. D. (1987). Synchronicity the bridge between matter and mind. New York: Bantam Books.
- Pelton, R. (1980). The trickster in West Africa: A study in mythic irony and sacred delight. Berkeley: University of California Press.

- Polkinghorne, D. (1983). Methodology for the human sciences. Albany: State University of New York Press.
- Polkinghorne, D. E. (1988). Narrative knowing and the human sciences. Albany: State University of New York Press.
- Preti, G. (1987). Female axillary secretions influence women's menstrual cycles: Reply to Wilson. Hormones and Behavior, 21(4), 547-550.
- Quadagno, D. M., Shubeita, H. M., Deck, J. & Francouer, D. (1979). A study of the effects of males, exercise, and all-female living condition on the menstrual cycle. Conference on Reproductive Behavior, Tulane University, New Orleans, LA.
- Quillin, S. I. M. & Runk, J. A. (1989). Martha Rogers' unitary person model. In J. J. Fitzpatrick & A. L. Whall, (Eds.), Conceptual models of nursing analysis and application (2nd ed., 285-300). Norwalk, CT: Appleton & Lange.
- Quinn, J. F. (1989). On healing, wholeness, and the Haelan effect. Nursing and Health Care, 10,(10), 553-556.
- Quinn, J. F. (1992). Holding sacred space: The nurse as healing environment. Holistic Nursing Practice, 6(4), 26-36.
- Raisbeck, B. (1993). Staining Herstory with wisdom. In Musawa (Ed.). We'moon '94: Gaia rhythms for womynn (np). Estacada, OR: Mother Tongue Ink.
- Redfield, J. (1993). The celestine prophecy an adventure. Hoover, AL: Satori Publishing.
- Riehl, J. P. & Roy, C. (1980). Conceptual models for nursing practice (2nd ed.). New York: Appleton-Century-Crofts.
- Rogel, M. J. (1978). A critical evaluation of the possibility of higher primate reproductive and sexual pheromones. Psychological Bulletin, 85(4), 810-830.
- Rogers, M. E. (1970). An introduction to the theoretical basis of nursing. Philadelphia, PA: F.A. Davis.

- Rogers, M. E. (1980a). A science of unitary man. In J. P. Riehl & C. Roy (Eds.), Conceptual models for nursing practice (2nd ed., 329-337). New York: Appleton-Century-Crofts.
- Rogers, M. E. (1980b). The science of unitary man. (Videotape). New York: Media for Nursing.
- Rogers, M. E. (1983a). Feminar, Texas Woman's University, Summer Session, Dallas, TX.
- Rogers, M. E. (1983b). Science of unitary human beings: A paradigm for nursing. In I. W. Clements & F. B. Roberts (Eds.), Family health: A theoretical approach to nursing care. New York: Wiley.
- Rogers, M. E. (1986). Science of unitary human beings. In V. M. Malinsky (Ed.), Explorations on Martha Rogers' Science of Unitary Human Beings. Norwalk, CT: Appleton-Century-Crofts.
- Rogers, M. E. (1990). Nursing: Science of unitary, irreducible, human beings: Update 1990. In E. A. M. Barrett (Ed.), Visions of Rogers' science based nursing (5-11). New York: National League for Nursing.
- Roux, G. M. (1994). Phenomenologic study: Inner strength in women with breast cancer. Unpublished dissertation, Texas Woman's University, Denton, TX.
- Rowan, J. (1981). A dialectical paradigm for research. In P. Reason & J. Rowan (Eds.), Human inquiry: A sourcebook of new paradigm research. New York: John Wiley.
- Russell, M. J., Switz, G. M. & Thompson, K. (1980). Olfactory influences on the human menstrual cycle. Pharmacology, Biochemistry, and Behavior, 13(5), 737-738.
- Sandelowski, M (1986). The problem of rigor in qualitative research. Advances in Nursing Science, 8(3), 27-37.
- Schutz, A. (1967). The phenomenology of the social world. Chicago: Northwestern University Press.
- Shostak, M. (1983). Nisa: The life and words of a Kung woman. Harmondsworth, NY: Penguin.

- Shuttle, P. & Redgrove, P. (1978). The wise wound Eve's curse and everywoman. New York: Richard Marek, Publishers.
- Shange, N. (1982). Sassafrass, cypress & indigo. New York: St. Martin's Press.
- Sjoo, M. & Mor, B. (1991). The great cosmic mother. San Francisco: CA: Harper.
- Skandhan, K. P., Pandya, A. K., Skandhan, S. & Mehta, Y. B. (1979). Synchronization of menstruation among intimates and kindreds. Panminerva Medica, 21(1), 131-134.
- Slater, V. E. (1992). Modern physics, synchronicity, and intuition. Holistic Nursing Practice, 6, (4), 20-25.
- Slayton, T. (1990). Reclaiming the menstrual matrix. Santa Rosa, CA: Menstrual Health Foundation.
- Society for Menstrual Cycle Research (1991, June). The menstrual cycle as a model for psychological research. Seattle, WA: K. Preston.
- Spiegelberg, J. (1976). The phenomenological movement (Vols. 1-2). The Hague: Martinus Nijhoff.
- Spender, D. (1985). For the record. London: The Women's Press.
- Spradley, J. P. (1979). The ethnographic interview. New York: Holt, Rinehart & Winston.
- Sting. (1983). Synchronicity I [Recorded by The Police]. On Synchronicity [record]. Hollywood, CA: A & M Records.
- Strassmann, B. I. (1991). The reproductive ecology of the Dogon of Mali. Dissertation Abstracts International [CD-ROM]. Abstract from: ProQuest File: Dissertation Abstracts-B Item: AAC 9116303.
- Swanson-Kauffman, K. M. (1986). A combined qualitative methodology for nursing research. Advances in Nursing Science, 8(3), 58-69.
- Taylor, D. (1988). Red flower: Rethinking menstruation. Freedom, CA: Crossing Press.

- Teish, L. (1985). Jambalaya the natural woman's book of personal charms and practical rituals. San Francisco: Harper & Row, Publishers.
- Tesch, R. (1980). Phenomenological and transformative research: What they are and how to do them. Santa Barbara, CA: Fielding Occasional Papers.
- Tesch, R. (1988). Emerging themes: The researcher's experience. Submitted for publication.
- Torres, G. & Stanton, M. (1982). Curriculum process in nursing a guide to curriculum development. Englewood Cliffs, NJ: Prentice-Hall, Inc.
- Triedman, K. E. (1980). On the existence and importance of human pheromones: Social interaction effects on the human menstrual cycle. Unpublished manuscript, Brown University, Providence, RI.
- Trevathan, W. R.; Burleson, M. H.; and Gregory, W. L. (1993). No evidence for menstrual synchrony in lesbian couples. Psychoneuroendocrinology, 18,(5-6), 425-435.
- Turke, P. W. (1988). Concealed ovulation, menstrual synchrony, and paternal investment. In E. E. Filsinger (Ed.). Biosocial perspectives on the family (119- 136). Newbury Park, CA: Sage Publications, Inc.
- Turnbull, C. N. (1961). The forest people. Garden City, NY: Doubleday and Company.
- Tyler, W. A. (1992). The Spatial and temporal dynamics of colonial nesting in the maomao, *abudefduf abdominalis*. Dissertation Abstracts International [CD-ROM]. Abstract from: ProQuest File: Dissertation Abstracts-B Item: AAC 9230526.
- Vaughan, A. (1979). Incredible coincidence the baffling world of synchronicity. New York: Ballantine Books.
- Veith, S. (1978). Rethinking the integrated curriculum. Nursing Outlook, 26(3), 187-190.
- Von Bertalanffy, L. V. (1968). General systems theory. New York: Braziller.

- Walker, B. G. (1988). The woman's dictionary of symbols and sacred objects. San Francisco: Harper & Row, Publishers.
- Walker, L. O. & Avant, K. C. (1983). Strategies for theory construction. Norwalk, CT: Appleton-Century-Crofts.
- Washburn, S. P. (1986). Estrous synchronization in a dairy herd management program. Dissertation Abstracts International [CD-ROM]. Abstract from: ProQuest File: Dissertation Abstracts-B Item: AAC 8610446.
- Weber, R. P. (1985). Basic content analysis. Beverly Hills, CA: Sage Publications.
- Weideger, P. (1975). Menstruation and menopause. New York: Alfred A. Knopf, Inc.
- Weller, A. and Weller, L. (1992). Menstrual synchrony in female couples. Psychoneuroendocrinology, 17(2-3), 171-177.
- Weller, A. and Weller, L. (1993). Menstrual synchrony between mothers and daughters and between roommates. Physiology and Behavior, 53(5), 943-949.
- Whall, A. L. (1982). Family system theory: Relationship to nursing conceptual models. In Fitzpatrick, J. J., Whall, A. L., Johnston, R. L. & Floyd, J. A. Nursing models and their psychiatric mental health applications (69-92). Bowie, MD: Robert J. Brady Co.
- Whyte, D.A. (1991). The experience of families caring for a child with cystic fibrosis--a nursing response. Dissertation Abstracts International [CD-ROM]. Abstract from: ProQuest File: Dissertation Abstracts-B Item: AAC D-90773.
- Wilhelm, R. (1967). The I Ching or Book of Changes (3rd ed., C. F. Baynes, Trans.) Forward by C. G. Jung, Preface to the Third Edition by H. Wilhelm. Princeton, NJ: Princeton University Press.
- Wilson, H. C. (1988). Male axillary secretions influence women's menstrual cycles: A critique. Hormones and Behavior, 22(2), 266-277.

- Wilson, L. M. & Fitzpatrick, J. J. (1984). Dialectic thinking as a means of understanding systems in development: Relevance to Rogers's principles. Advances in Nursing Science, 6(2), 24-41.
- Wolf, F. A. (1991). Eagle's quest: A physicist's search for truth in the heart of the shamanic world. New York: Summit Books.
- Woolger, J. B. & Woolger, R. J. (1989). The goddess within a guide to the eternal myths that shape women's lives. New York: Fawcett Columbine.

APPENDICES

APPENDIX A

Prospectus Letter, Dean of Graduate School and
Human Subjects Review Committee Approval Letter

TEXAS WOMAN'S UNIVERSITY
DENTON DALLAS HOUSTON
THE GRADUATE SCHOOL

P.O. Box 22479, Denton, Texas 76204-0479 817/898-3400 FAX 817/898-3412



July 13, 1993

Ms. Nina Klebanoff
5450 Morningside Ave.
Dallas, TX 75206

Dear Ms. Klebanoff:

I have received and approved the Prospectus for
your research project. Best wishes to you in the
research and writing of your project.

Sincerely yours,

A handwritten signature in cursive script that reads "Leslie M. Thompson".

Leslie M. Thompson
Associate Vice President for Research
and Dean of the Graduate School

dl

cc ✓ Dr. Patsy Keyser
Dr. Carolyn Gunning

TEXAS WOMAN'S UNIVERSITY
DENTON DALLAS HOUSTON
OFFICE OF RESEARCH AND GRANTS ADMINISTRATION
P.O. Box 22939, Denton, Texas 76204-0939 817/898-3375



HUMAN SUBJECTS REVIEW COMMITTEE

March 24, 1993

APR 2 1993

Nina A. Klebanoff
5931 Ross Avenue
Dallas, Texas 75206

Social Security #: 585-16-9851

Dear Nina A. Klebanoff:

Your study entitled "Menstrual Synchronization" has been reviewed by a committee of the Human Subjects Review Committee and appears to meet our requirements in regard to protection of individuals' rights.

Be reminded that both the University and the Department of Health and Human Services (HHS) regulations typically require that agency approval letters and signatures indicating informed consent be obtained from all human subjects in your study. These are to be filed with the Human Subjects Review Committee. Any exception to this requirement is noted below. Furthermore, according to HHS regulations, another review by the Committee is required if your project changes.

Special provisions pertaining to your study are noted below:

- ☐ The filing of signatures of subjects with the Human Subjects Review Committee is not required.
- ☐ Other:
- ☒ No special provisions apply.

Sincerely,

Chairman
Human Subjects Review Committee

cc: Graduate School
Dr. Patsy Keyser, Nursing
Dr. Carolyn Gunning, Nursing

APPENDIX B

Letters of Introduction

LETTER OF INTRODUCTION

1. Your name was given to me by _____
2. My name is Nina Klebanoff and I am conducting a research study for my dissertation in nursing.
3. I am studying the experience of menstrual synchronization. Menstrual synchronization is the significant and meaningful coming together of the onset of menstrual cycles between or among women.
4. Specifically, I am interested in the experience of menstrual synchronization from your perspective.
5. Participation will involve two or three interviews. The first interview will probably last 1 to 2 hours. The second interview will last 30 to 60 minutes. In a third interview I will present you with my findings and see if they fit with your own perceptions.
6. Each interview will be audiotaped and transcribed but will be coded by number so that confidentiality will be maintained. Your name will not be used at any time during or after the study.
7. The criteria for participation are as follows:
 - a woman 25 to 45 years old
 - not post-menopausal
 - in or have been in close association with or among other women for at least three months
 - an experience of a significant coming together closer (that is, within one 24 hour span) of the dates of the onset of the menstrual cycle in a meaningful way.
8. I have had the experience of menstrual synchronization and would qualify as a participant in this study which, in part, explains my interest in this subject.

9. Please check one of the following:

☐ I agree to participate in this study.

☐ I do not agree to participate in this study.

10. If you are interested in participating in and qualify for this study, please turn to the next page to read and discuss the informed consent for this study.

THANK YOU

[Date]

[Name]
[Street Address]
[City, State, Zip Code]

Dear _____

Thanks for showing an interest in my dissertation. As we discussed, enclosed are some materials about the project.

In particular, I am interested in the menstrual cycle patterns of women who have or have had a close association with another woman or other women over several months, in a personal way, work context or both. I am wanting to understand the experience of the meaningful coming together of the date of onset of women's menstrual cycles, menstrual synchronization.

If you agree to participate, for the first interview, I will want to tape record what you say so that I will not miss any of it. You will never be identified by name at any time and I will not discuss what we talk about with anyone in a way that would identify who you are. The first interview will last about an hour. If at any time during the interview you would like the tape recorder turned off, all you will have to do is press the button on the machine and the recorder will stop. However, I may take a few notes to myself during the interview unless you request that I do not. At the end of this interview I will ask you to fill out a one (1) page questionnaire. It will give me some information about your background.

The following areas will be addressed and will serve as a framework for the interview: general; behavior/experience; opinion/value; knowledge; and sensory. I want to gain some insight about your personal experience and perceptions about your menstrual patterns. I will start out general and then get specific.

I will probably get back to you to get additional information or clarify information that I have and to get your impressions about my interpretations of your interview. This second contact or interview most likely will take place via the mail or over the phone. I will send you the total results of the study for your comments. A third interview is to go over the group results of the interviews.

Please, during the interview(s) if you decide to participate, add anything that you think is important even if I do not specifically ask. I do not want you to feel limited by my questions.

I'll give you a call next week. Thanks for your willingness to consider participating in this work.

Sincerely,

Nina A. Klebanoff

APPENDIX C

Consent to Participate: Adaptation of Consent Form B

TEXAS WOMAN'S UNIVERSITY
INFORMED CONSENT TO PARTICIPATE IN RESEARCH

TITLE OF STUDY: Menstrual Synchronization

INVESTIGATOR:

Nina A. Klebanoff

PHONE NUMBERS:

505.758.5742

214.828.0537

214.239.5733

1. I agree that this study is of a research nature. It may offer no direct benefit to me. However, the information may help the nursing profession better understand the health patterns of women.
2. Participation in this study is voluntary. I may refuse to enter it or may withdraw at any time without creating harmful consequences to myself. I understand that the investigator may drop me from the study at any time.
3. The purpose of this study is to gain a better understanding about menstrual synchronization, which is the meaningful coming together of the beginning of menstrual cycles between/among two or more women.
4. As a participant in this study, I will be asked to take part in interviews with Nina A. Klebanoff which may last from 2 to 4 hours over a series of up to three sessions. The interviews will take place at a location that we both agree on.
5. I understand that some of the questions might be distressing or uncomfortable to me and that I may feel uneasy or hesitant in answering some of the questions. The researcher has explained to me that the interviews will be audiotaped and transcribed and that the audiotapes and transcriptions will be kept confidential.

Page 2., INFORMED CONSENT

6. I understand that this information is research which may result in findings and information reported to the literature which may or may not be of value to me personally.

7. Information about this study was discussed with me by Nina A. Klebanoff. If I have any further questions, I can reach her by calling 505.758.5742, 214.239.5733 or 214.828.0537 during the day and 505.758.5742 or 214.828.0537 during the evening.

An offer to answer all of my questions regarding the study has been made and I have been given a copy of the dated and signed consent form. If alternative procedures are more advantageous to me, they have been explained. A description of the possible attendant discomfort and risks reasonable to expect have been discussed with me. I understand that I may terminate my participation in the study at any time.

If you have any concerns about the way this research has been conducted, contact the Texas Woman's University Office of Research and Grants Administration, 817.898.3375.

Signature

Date

Print Name

APPENDIX D

Consent to Tape-Record: Adaptation of Consent Form C

Consent to Audio Record

TEXAS WOMAN'S UNIVERSITY

I, _____, do hereby consent to the recording of my voice by Nina A. Klebanoff, acting on this date under the authority of the Texas Woman's University. I understand that the material recorded today may be made available for educational, informational, and/or research purposes; and I do hereby consent to such use.

I hereby release the Texas Woman's University and the undersigned part acting under the authority of Texas Woman's University from any and all claims arising out of such taking, recording, reproducing, publishing, transmitted, or exhibiting as is authorized by the Texas Woman's University.

Date

Signature

Print Name

The above consent form was read, discussed, and signed in my presence. In my opinion, the person signing said consent form did so freely and with full knowledge and understanding of its contents.

Authorized representative
of the Texas Woman's
University

Date

APPENDIX E

Confidentiality Letter
for Transcriptionists and Consultants

CONFIDENTIALITY LETTER

DATE: _____, 199

I, _____, understand that Nina A. Klebanoff is conducting nursing research on the phenomenon of menstrual synchronization. She is audiotaping and transcribing a series of interviews. I hereby acknowledge that I have had the necessity for maintaining the confidentiality of the informants explained to me as I read the transcriptions or listen to the audiotaped interviews and I agree to maintain any all information that I read or hear confidential. I have had the opportunity to ask any questions about these requirements and all questions have been answered to my satisfaction. I hereby acknowledge that this is my signature and that I have been provided a copy of this Confidentiality Letter.

Signature

Print Name

APPENDIX F

General Interview Guide (Original Form)

GENERAL INTERVIEW GUIDE (Original Form)

Introduction: I am interested in the menstrual cycle patterns of women who have a close association with another woman or other women over several months. In particular, I am wanting to understand the experience of the meaningful coming together of the date of onset of women's menstrual cycles, menstrual synchronization.

I want to tape record what you say so that I will not miss any of it. If at any time during the interview you would like the tape recorder turned off, all you have to do is press the button on the machine and the recorder will stop. However, I may take a few notes to myself during the interview (Patton, 1990).

The following areas will be addressed and will serve as a general framework. I want to gain some insight about your personal experience and perceptions about your menstrual patterns. I will start out general and then get specific. Please add anything that you think is important even if I do not specifically ask. I do not want you to feel limited by my questions.

I will probably get back to you to get additional information or clarify information that I have and to get your impressions about my interpretations of your interview. At the end of the interview I will ask you to fill out a questionnaire that will give me some information about your background.

General questions:

Try to remember and tell me anything you can about the experience of menstrual synchronization. Please tell me what you thought, felt, did, and remember.

Specific questions (adapted from Patton, 1990):

1. Behavior/experience questions:

Past - If I had been present during a time in your life when you became synchronized with another woman/other women what would I have seen you doing? If I followed you through

that time, what would I have seen you doing, what experiences would I have observed you doing?

Present - If currently you are synchronized with another woman/women what would I see you doing? If I followed you for a month, what would I see you doing, what experiences would I observe you doing?

Future - If you were to become synchronized with another woman/women what would I see you doing in the future? If I could follow you for a month, what would I see you doing, what experiences would I observe you doing?

2. Opinion/value questions:

Past - What have you believed about menstrual synchronization in the past? What did you think about menstrual synchronization in the past? What was your opinion of menstrual synchronization in the past?

Present - What do you believe about menstrual synchronization now? What is your opinion of menstrual synchronization now?

Future - What might you believe about menstrual synchronization in the future? What will you think about menstrual synchronization in the future? What will your opinion be of menstrual synchronization in the future?

3. Feeling questions:

Past - How did you feel about menstrual synchronization in the past?

Present - How do you feel about menstrual synchronization now?

Future - How might you feel about menstrual synchronization in the future?

4. Knowledge questions:

Past - What did you know about menstrual synchronization in the past? What situations were you in when you experienced menstrual synchronization in the past? How much time did you spend with another woman/other women? What was the nature of that/those relationship(s) that you had with the woman/women whom you were experiencing menstrual synchronization with then?

Present - What do you know about menstrual synchronization now? What situations are you in now that you experience menstrual synchronization? How much time do you spend with another woman/other women? What is the nature of that/those relationship(s) that you have with the woman/women whom you are experiencing menstrual synchronization now?

Future - What will you know about menstrual synchronization in the future? What situations might you be in that you will experience menstrual synchronization in the future? How much time will you spend with another woman/other women? What will be the nature of that/those relationship(s) that you will have with the woman/women whom you might be experiencing menstrual synchronization with in the future?

5. Sensory questions:

Past - Describe to me what you did (see, hear, touch, smell, taste, etc.) when you experienced menstrual synchronization in the past? What did you say to anyone at that time?

Present - Describe to me what you (see, hear, touch, smell, taste, etc.) when you experience menstrual synchronization currently? What would you say now?

Future - Describe to me what you might (see, hear, touch, smell, taste, etc.) if you experience menstrual synchronization in the future? What might you say to anyone then?

Comments:

Anything else to share, add, change, reevaluate, explain about yourself or about your experience(s)?

APPENDIX G
Questionnaire

QUESTIONNAIRE

The purpose of this questionnaire is to gather information about your background. The information you provide will be kept confidential. Answer only those questions you are comfortable with.

Date: ____/____/____

Number: ____

Age in Years: ____

Date of Birth: _____

Race: _____

Ethnic/Cultural Identity: _____

Religion/Spirituality: _____

Occupation/Profession: _____

Household Income: _____

Marital/Relationship Status: _____

Number or Years of Education or Highest Degree: _____

Place of Residence: _____

THANK YOU

APPENDIX H

Sample Second Interview Letter

SAMPLE SECOND INTERVIEW LETTER

[Date]

[Name]

[Street Address]

[City, State and Zip Code]

Dear _____

Hello. I have enclosed the transcription of our interview from [date]. I want to thank you for your time and allowing me into your home. Your insightful answers and comments are very helpful for the study. I do have a couple of questions after reading over the transcription of our interview and listening to the tape.

For your responses I am sending a comment and response sheet with a stamped, self-addressed envelope. It is not necessary for you to return the transcript. If you would rather discuss this on the telephone, just mark that on the return sheet and I will get in touch with you.

Also, I am asking you to read over the transcription to make sure that what was transcribed is true of and for you. There are some artifacts here and there, for example "Th)T," which are leftovers from moving the file from one computer program to another. Each line of the transcription is numbered in the margin. Put any comments, referring to the specific line number(s), you have on the return sheet.

Thanks again for participating in my study. When I get the prototype based on all of the interviews I'll get back in touch with you. Please do not hesitate to call me if you want further information.

Sincerely,

Nina A. Klebanoff, Ph.D.c., R.N., C.S.

PLEASE RETURN
RESPONSES AND COMMENTS

DATE: / /19__

FROM: [#]

RE: 1. IF YOU RECALL, HOW CLOSE, IN HOURS, DID YOU AND
 YOUR ROOM MATE BEGIN YOUR MENSTRUAL CYCLES? (SEE
 LINES NUMBERED - AND -):

2. HAVE YOU HAD A CHANCE TO COMPARE NOTES WITH
 ____? (SEE LINES NUMBERED -):

3. DO YOU REMEMBER ANYTHING ELSE SPECIFICALLY ABOUT
 ANY CHANGES THAT YOU HAVE EXPERIENCED ASSOCIATED
 WITH MENSTRUAL SYNCHRONIZATION (SEE LINES
 NUMBERED - AND -):

4. ANY COMMENTS ABOUT THE TRANSCRIPTION:

5. ANY OTHER COMMENTS, RECOLLECTIONS, ETC.:

_____ YES, PLEASE CALL ME AT _____, TO
DISCUSS THIS ON THE TELEPHONE.

THE BEST TIME TO CALL ME IS: _____.

THANK YOU.

APPENDIX I

Interview 3 -- Letter to Participants
and Menstrual Synchronization and Synchronization Resources

INTERVIEW 3 -- LETTER TO PARTICIPANTS

[Date]

[Name]

[Street Address]

[City, State, Zip Code]

Dear _____

As I have mentioned before, I am sending you material as the last phase of my research on menstrual synchronization. I have appreciated the interest, time and, energy that you have generously given to my research. I continue to be refreshed and gratified by the richness of your answers. Thank you.

Enclosed I have given a definition of menstrual synchronization and described the commonalities among all of the participants. While not every participant will agree with every statement, the majority of participants had similar experiences.

Please read the enclosed and respond to the following questions:

1. Does this strike a chord with you?
2. Do you see yourself in these descriptions?
3. Which statements are true for you with modification or clarification?
4. Which statements are not characteristic of your experience of menstrual synchronization?
5. Do any of the statements misrepresent you?
6. Do any of the statements upset you?
7. Any other comments or responses to share?

Because I do not want to take up much of your time, I will call you to discuss your responses over the phone. I will call you within the next week and if it is convenient, we will talk then. If it is not convenient, we can arrange to talk at a later time.

If you would like to get together, either on the phone or in person, to further discuss this study and your involvement

in it, please let me know. My telephone number is:
505.758.5742. For your information I have enclosed a
resource sheet.

Again, thank you for your time and thoughtfulness. I look
forward to speaking with you soon.

Sincerely,

Nina A. Klebanoff

The Prototype

Description of Menstrual Synchronization:

Taking place within one week to a year, the experience of menstrual synchronization is the tacit or overt awareness of the pattern of a significant coming together of a woman's menstrual cycle in relation (emotionally, physically, or both) to another women(en). As a natural event, it is explained by any combination of physical, emotional, mental, psychological, bodymind-spirit, organic, as well as lunar factors.

Demographics

As a group, participants are very educated, relatively financially resourceful Caucasian women of varying ethnic-cultural identities and religious-spiritual orientations. Their ages range from 25 to 46. All of the participants had or were experiencing the phenomenon of menstrual synchronization. More than two-thirds of the participants shared information about their experiences with menstrual synchronization in relation with lesbian lovers or partners and just less than a third in relationships other than with lesbian lovers (that is, friends, sisters, mothers, and so forth).

The Major Themes

The four major themes are:

1. Knowing Menstrual Synchronization is Happening and When
2. The Meaning of Menstrual Synchronization
3. Relationships and Connections
4. The Effects of Menstrual Synchronization.

1. Knowing Menstrual Synchronization is Happening and When

The first theme includes those observable behaviors that the participants recalled. This is a problematic area in that some of the participants said that there was not anything to notice, they just knew it was happening. There is no question that it took place; knowing how was more difficult. Room mates talked about the phenomenon as did friends and lovers. In work settings women realized that they were experiencing menstrual synchronization because of either jokes or comments made in group contexts or amongst themselves in the smaller office environments.

Connected to this was the amount of time it took to take effect. When they could remember, all of the participants could specify the amount of time that it took for menstrual synchronization to occur. From within a week to upwards of six months to a year was the range of time that it took. With room mates it happened faster (2 weeks to 4 months) than with lesbian lovers, which took 2 to 6 months. Whereas with friends and co-workers, whether they were friends also or not, the process seemed to take longer, closer to 6 months to a year.

2. The Meaning of Menstrual Synchronization

The theme The Meaning of Menstrual Synchronization is an amalgam of the thoughts, opinions, knowledge, feelings, values, and beliefs of all of the participants. A few perceived that menstrual synchronization could be detrimental in theory, but they all decided that perhaps it could be beneficial after all. As a positive experience, the participants believed that it helped women to get long and to know when their cycles were.

Most participants said that menstrual synchronization was either a positive or neutral experience. Those that were more neutral said that they really did not think or feel much about menstrual synchronization.

For some of the participants menstrual synchronization indicated some kind of mind-body, sympathy, compassion, or spiritual connection. Some of the women thought that this factor in their lives was and is special. Most typically have come to expect this to happen and continue to happen in their lives. There were a few general explanations for this.

(A few of the participants had no idea why it happens.) Many of the participants explained that menstrual synchronization happened because of biological phenomenon, the moon, or nature, a mind-body connection, some kind of bond, a dominant personality or style, a mental phenomenon, or "energy." Another reason was physical proximity, emotional proximity, of both, with most of the participants believing that a certain amount of time in mere physical proximity was enough to induce menstrual synchronicity. But one participant maintained that she experienced the need for both emotional and physical proximity.

3. Relationships and Connections

Menstrual synchronization only happens in relation to someone else, which gives rise to this theme, Relationships and Connections. Some participants only experienced this phenomenon with their lesbian partners while others who had the experience with their lovers also noted that they had the experience at work. One participant recounted menstrual synchronization experiences with her mother, sisters, friends, room mates, co-workers, and lesbian lovers. Another reported that she was still on the same cycle as a woman who was her lover and is now her friend. Some participants had this experience with dorm mates and room mates. As far as friends, fewer participants reported this as the norm for them. If they did become menstrually synchronized with their friends, it was with those that were characterized as "close." But another participant had only had the experience of menstrual synchronization with her mother and sister while growing up and then again when she lived with her sister again as an adult. Another had the experience with her daughter (and lesbian partners, but not friends or others). Some participants noted that they and the women that they worked with, whether they were friends or not, became synchronized.

4. The Effects of Menstrual Synchronization

This theme, The Effects of Menstrual Synchronization, describes the experiences that all participants had. Some women had difficulty trying to put their experiences into words. Some of the participants talked about their menstrual cycles going towards another and then apart and then back again, a coming-together-and-going-apart-and-coming together. Premenstrual syndrome (PMS) was brought up by

nearly all of the participants; menopause was mentioned by only a few. Several of the participants mentioned that any stress or change altered their menstrual cycles in relation to others.

Not all of the participants expressed changes (e.g., visual, tactile, sexual, and so on) related to menstrual synchronization. But for those who did experience effects connected to their experience of menstrual synchronization, they were noticeable.

Not all participants noticed if their menstrual cycles changed as they became synchronized with another woman or women or if those around them recalibrated. Those participants who knew that they had very regular, predictable menstrual cycles stayed on the same pattern and others caught up or fell behind in the process of becoming synchronized.

Most of the participants made reference to how they felt about their menstrual cycles. Either they were comfortable and really valued their menstrual cycles, or they disliked them. I did not detect any connection among the participants' experiences of menstrual synchronization, PMS, and how they felt about their menstrual cycle.

RESOURCES

Organizations

Menstrual Health Foundation
Cycle 104 Petaluma Avenue
Sebastopol, CA 95472
707.829.2744

Society for Menstrual
Research
c/o Dr. Ann M. Voda
College of Nursing
University of Utah
25 South Medical Drive
Salt Lake City, UT
84112
801.581.7728

Books on Menstruation and Synchronization

- Ambertson, C. (1991). Blessings of the Blood A Book of Menstrual Lore and Rituals for Women. Victoria, B.C.: Beach Holme Publishers Limited.
- Buckley, T. & Gottlieb, A. (Eds.) (1988). Blood Magic the Anthropology of Menstruation. Berkeley, CA: University of California Press.
- Combs, A. & Holland, M. (1990). Synchronicity Science, Myth and the Trickster. New York: Paragon House.
- Culpepper, E.E. (1992). Menstruation Consciousness Raising: A Personal and Pedagogical Process. In A.J. Dan & L.L. Lewis (Eds.), Menstrual Health and Women's Lives. Chicago: University of Illinois Press, pp. 274-284.
- Delany, L., Lupton, M.J. & Toth, E. (1976). The Curse: A Cultural History of Menstruation. New York: Dutton and Company.
- Francia, L. (1988). Dragontime, Magic and Mystery of Menstruation. Woodstock, NY: Ash Tree Publishing.

- Golub, S. (1985). Lifting the Curse of Menstruation: A Feminist Appraisal of the Influence of Menstruation in Women's Lives. New York: Harrington Park Press.
- Grahn, J. (1993). Blood, Bread, and Roses How Menstruation Created the World. Boston: Beacon Press.
- Lander, L. (1988). Images of Bleeding: Menstruation as Ideology. New York: Orlando Press.
- Northrup, C. (1994). Women's Bodies, Women's Wisdom. New York: Bantam Books.
- Orenstein, G.F. (1993). Synchronicity and the Shaman of Samiland. In V. Noble (Ed.) Uncoiling the Snake: Ancient Patterns in Contemporary Women's Lives. New York: HarperCollins Publishers, pp. 167-189.
- Peat, F.D. (1987). Synchronicity the Bridge Between Matter and Mind. New York: Bantam Books.
- Shuttle, P. & Redgrove, P. (1986). The Wise Wound Eve's Curse and Everywoman. New York: Richard Marek, Publishers.
- Spider. (1992). Songs of Bleeding. New York: Black Thistle Press.
- Stepanich, K.K. (1992). Sister Moon Lodge The Power & Mystery of Menstruation. St. Paul, MN: Llewellyn Publications.
- Taylor, D. (1988). Red Flower: Rethinking Menstruation. Freedom, CA: Crossing Press.
- Vaughan, A. (1979). Incredible Coincidence the Baffling World of Synchronicity. New York: Ballantine Books.
- Weideger, P. (1975). Menstruation and Menopause. New York: Alfred A. Knopf, Inc.