

To the Graduate Council:

I am submitting herewith a thesis written by Mary Jane Spence Harlan entitled "Assessing the Validity of the Holistic Prenatal Surety Risk Screening Tool." I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science in Nursing.

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ASSESSING THE VALIDITY OF
THE HOLISTIC PRENATAL
SURETY RISK SCREENING TOOL

A Thesis
Presented for the
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in Nursing
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ABSTRACT

This descriptive study evaluated the content validity of the Holistic Prenatal Surety Risk Screening Tool. This assessment tool was developed based on the premise that factors other than physical risk factors may influence a woman's physical birth outcome. The assessment was developed as a criterion-referenced measurement tool. Eighty experts were sent a questionnaire concerning the validity of the tool in relationship to outcome, scoring, and usefulness. Thirty-four individuals returned the form, and the results were evaluated section by section.

The study revealed that the overall tool received a mean score of 4.4 on a 5 point scale in relationship to birth outcome and a mean score of 4.4 on usefulness. The scoring section was ranked 4.0 on a 5 point scale. The results indicate the level of acceptance of this tool in relation to this particular panel of expert judges.

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INTRODUCTION TO THE PROBLEM OF HOLISTIC PRENATAL SCREENING

Introduction

The identification of risk in pregnancy is an area of much concern to health-care providers. With new potential choices for the birthing woman, from the hospital high-risk-care center to home birth or a birthing center, it becomes increasingly important to anticipate which women may develop labor complications. Aubry and Pennington (1973) pointed to the "common goal of modern obstetrics and pediatrics" (p. 3) as the maximization of fetal, newborn, and infant life. The allocation of society's limited health-care resources comes into question when considering this goal. Will society's funds be used to save ever smaller fetuses or will funds also be available to provide care for normal women experiencing normal pregnancies? It is this primary preventive health care which could be endangered by a social policy which emphasizes high-risk intervention (Peterson, 1984).

Which women will not need the care of the specialist or the facilities of the high-risk center? Many systems and tools have been utilized to differentiate those women in need of specialized care during pregnancy and at delivery; however, none yet has been found to be completely accurate (Mehl &

Peterson, 1984). Most attempts at understanding and defining prenatal risk have emphasized physical risk factors (Hobel, Hyvarinem, Okada, & Oh, 1973; Laxova, Lewis, & Sudaby, 1975; Walker, 1976). While most researchers would agree that the majority of birth problems arise from the group of women judged as high-risk on these physical scales (Aubry & Pennington, 1973; Casson & Sennett, 1984; Nesbitt & Aubry, 1969), there is still much concern for the woman who is judged as low-risk but then requires major medical intervention at birth.

Aubry and Pennington (1973) reported that 20-30% of problem newborns originate from pregnancies that were previously judged as low-risk, and these results have been confirmed by other researchers (Casson & Sennett, 1984; Lensinski, 1975; Nesbitt & Aubry, 1969). Mehl and Peterson (1984) pointed out that the randomness of nature is usually stated as a defense for the inability of these tools to accurately predict these unexpected problems. Mehl and Peterson, however, argued that use of a systems theory would generate a concept which negates randomness. They postulated that factors which have not been assessed by these traditional tools are moving women to a high-risk outcome. The inexplicable randomness of nature argument has been used to justify the management of all pregnancies as if they were high-risk. Since certified nurse-midwives and nurse practitioners are generally limited in their practice to caring for women who are low-risk, the accurate assessment of risk can be an important factor in the future of the extended role of nursing practice.

Is there a way to more accurately assess risk? Are there other factors which may influence the outcome of pregnancy? Many factors have been identified as possible correlates of risk. Anxiety, life stress, fear, lifestyle habits, and many other factors have been studied in relation to pregnancy outcome (Davids & Devault, 1962; Levinson & Snider, 1982; Moshishma, Pederson, & Finster, 1978; Sexton & Hebel, 1984; Wallace, 1970). However, these factors are rarely considered in evaluating prenatal risk by health-care providers (Peterson, 1984).

Investigators have focused on the separate contributions of psychosocial and biomedical risk factors and not on how these forces interact to create a given outcome (Smilkstein, Lucas, Ashworth, Montano, & Pagel, 1984). A system for evaluating the interactive effects of psychosocial and physical factors in creating either a more favorable outcome for medically high-risk pregnancies or a less than optimum result for low-risk mothers has been used in two settings reported in the literature (Mehl & Peterson, 1984; Smilkstein et al., 1984).

Investigators at the University of Washington, in Seattle, tested the interaction of psychosocial and biomedical factors on pregnancy outcome and identified three types of psychosocial risk: life events, family function, and social support (Smilkstein et al., 1984). These factors were then added to an assessment of biomedical risk based on health histories and hospital records. The ninety-three women studied were all patients of seven physicians in a university-agricultural community in Washington. Data collected 6 weeks postpartum

revealed no substantial correlation between biomedical risk and complications but did show a relationship between family function and complications. Another reliable correlation to risk was the interaction between family function and biomedical risk. The results of this study supported the hypothesis that the "utilitarian biopsychosocial risk assessment instruments will significantly improve the prediction of complications of pregnancy and the postpartum period over biomedical risk alone" (Smilkstein et al., 1984, p. 321). Mehl and Peterson (1984) reported the results of their Holistic Prenatal Risk Assessment (H.P.R.A.) as practiced at the Berkeley Family Health Center. Their tool, which judges holistic risk based on a systems model of interacting factors, correctly predicted risk for physical birth complications 95.5% of the time (Peterson, 1984). Clearly, if these results can be duplicated by other health-care providers, they could have a dramatic effect on the health care of parturient women.

A major limitation of the H.P.R.A. is that it entails a lengthy and complex assessment process, administration of 11 scales and an extensive interview (Peterson, 1984). The time and training necessary to assess pregnant women in this fashion limits the usefulness of this tool for many health-care providers. Since Mehl and Peterson suggested that those who plan to use their assessment should not only study the books they have written but also attend a workshop to learn the method, preparing to use the assessment requires commitment of time and energy from the health-care provider as well as access to

a workshop. Mehl and Peterson also recommended the use of the tool three times during pregnancy. Each administration could take up to 3 hours of client/clinician time and also includes a group conference involving the health-care team. Although the benefits of such an assessment process are dramatic, this level of time commitment may not be feasible in many health-care settings. Could a simpler version of this tool be developed which would enable health-care providers to holistically assess risk? Mehl & Peterson (1985) have done a multiple regression analysis of their assessment in order to correlate specific areas of inquiry with outcomes. The purpose of this study was to develop a shortened version of their tool and to test this shortened tool for content validity.

Certified Nurse-Midwives and nurse practitioners could use a holistic screening tool to improve client assessment and to decrease the number of clients requiring transfer to a physician in later pregnancy or at delivery. This tool could also be used as an indicator of areas which may need further assessment or intervention. An appropriate intervention might help a woman move toward a more normal delivery. Such a holistic tool could also assist nurses in their goal of treating the "whole person."

Conceptual Framework

Recognition of the unique whole which is greater than the sum of its parts has characterized nursing since the time of Florence Nightingale (Rogers, 1970). This emphasis on the

whole correlates well with the nursing emphasis on health rather than disease. Holistic care focuses on both the dynamics of disease and the dynamics of health.

The word "holistic" is derived from the Greek word "holos" meaning "whole" (Flynn, 1980). Holistic care, as it is used by health-care providers today, refers to a perspective or a system of thought. The basis of this system is integration, wholeness, and a trust in natural order as it applies to a universe of open systems. The holistic perspective sees humans as unitary human beings made up of interacting subsystems (Rogers, 1970).

From a nursing perspective, understanding the whole is viewed as a dynamic process which encompasses examining the biophysical, the cognitive, the psychological, the social, the spiritual, and the genetic aspects of a human being. Nursing, then, directs the mobilization of the client's resources in order to seek growth and development within the multisystem context (Erickson, Tomlin, & Swain, 1983).

Martha Rogers (1970) asserted that the object of the study of nursing is Unitary Man. According to her theory of nursing, human beings are energy fields. The human field extends beyond the physical, and the portion visible to the human eye is only a portion of the totality of that human being (Rogers, 1970). It is this energy field, seen as a whole and not as the sum of its parts, that is the object of nursing science (Rogers, 1970).

How does energy change? How is human existence as energy progressing? The first law of Newtonian physics states "a body persists in a straight line except as affected by other bodies" (Fuller, 1975, p. 186). But the 1974 era of physics produced the theory of "prime otherness:" "All bodies are always being affected by other bodies, and the effects are always precessional" (Fuller, 1975, p. 189). Health-care providers and their clients can be viewed as both those other bodies and the original bodies. Each body is simultaneously acting, interacting, and being acted upon. Capra (1976) stated that:

In the universe there are no isolated building blocks . . . only a complicated web of relations between various parts of the unified whole. These relationships always include the human observer and his consciousness in an essential way. The observer is not only necessary to observe the properties of the particles, . . . all these properties are an expression of the particles' interaction with the observer; so there is no split between mind and matter. (p. 248)

Modern physics appears to duplicate Rogers' view of human beings as energy fields who are part of an infinite system and yet unitary and whole within themselves. But how do these two energy fields interact and how can one change the energy field of the patient in the desired manner? An explanation can be found in the theory of energy-wave patterns and the concept of interference. Interference is said to occur "when one energy event is passing through a given point and another impinges on it" (Fuller, 1975, p. 115).

When two energy forms are exact opposites, they may cancel each other (Fuller, 1975). Mehl and Peterson (1984) postulated that "When two energy waves interact in

synchronization (phase), augmentation of the energy (called synergy) and effects are very much amplified" (p. 170).

Thus any intervention or action within a person's life may work to change, cancel, or augment the person's own energy waves. Using the cellular-based medical model, one factor can be separated from another and considered in isolation. Using a holistic or energy-systems model reveals the potential power and effectiveness of seemingly small interventions on the whole (Mehl & Peterson, 1984). It is important to understand that a holistic perspective is not merely looking at more factors than are assessed traditionally by the medical establishment. The key to a holistic approach is a perception of the whole.

The analogy of the forest and the trees may assist in understanding this concept. A holistic approach involves a perception of the forest. Studying the individual trees may give one knowledge about those trees, and indirectly about the forest itself, but no amount of analysis of individual trees can explain the true phenomenon of the forest as a human perceives it in its entirety. While there are those who possess unique perception and may be able to perceive the forest by holding only one leaf, most would need to see and feel and smell and perceive the meaning and the grandeur of the forest as one unit to understand the forest. Rogers theorized that the observed requires the presence of the observer for this very perception to exist (Rogers, 1970). It is this wholeness which is the key to understanding a holistic paradigm.

In a holistic perspective there is only one true variable and that variable is life. This life variable can be viewed as a continuum linked end-to-end in a never-ending circle. This spectrum would include the physical, the psychological, the social, the economic, the spiritual, and many other aspects of an individual's existence. These aspects would not be judged as separate but as part of the ever-changing phenomenon of a human being. The factors influencing each of the aspects are, in reality, finite in number, but in a universe of open systems that finite number is so large that it can be judged as infinite. A holistic perspective would focus on perceiving this whole and on understanding the meaning of the aspects of the variable life to this individual as a whole and functioning human. Any of the potentially infinite number of factors which are exerting a force at that point in time on the whole are a part of such an assessment. It is the interaction of the individual perceiving and the individual assessed which allows for those factors to become observable.

Mehl and Peterson (1985) used a general-to-specific-outcome model to show the relation of the condition of the body-mind field to specific birth outcomes (Figure 1). The set of general factors on the left creates an energy state which is capable of moving the system toward a specific outcome.

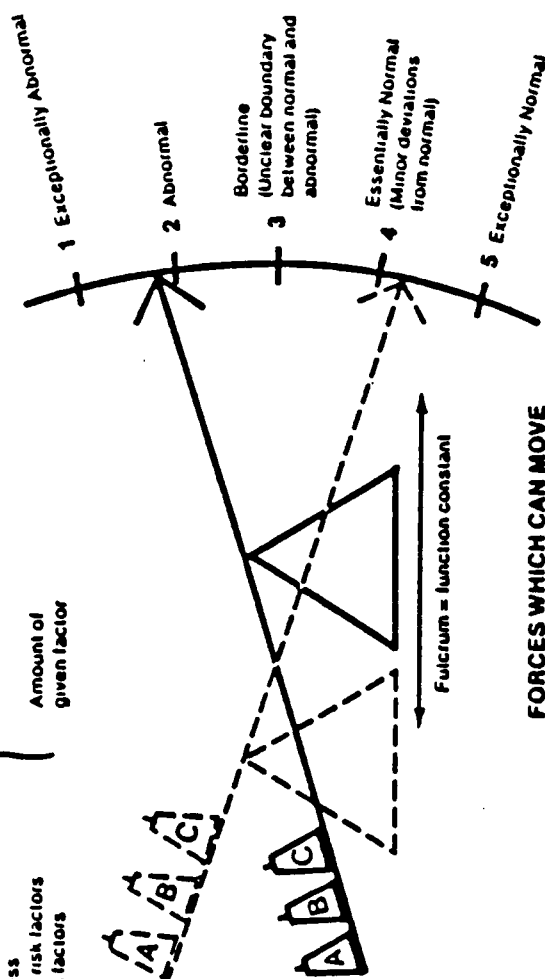
This model can then be used as a basis for understanding the H.P.R.A. scale. The location of the fulcrum affects the influences of the risk factors (A-H) on the outcome on the

WEIGHTS REPRESENT RISK FACTORS, INCLUDING

- A. Affective content
 - B. Beliefs
 - C. Character type (body structure)
 - D. General physical health
 - E. Emotional stress
 - F. Physical stress
 - G. Biochemical risk factors
 - H. Physical risk factors
- Relative contribution of individual factor = ρ weight
- Amount of given factor

GENERAL OUTCOME OF BIRTH

(Dependent variable in our multiple discriminant function)



FORCES WHICH CAN MOVE FULCRUM:

1. Nutritional Status —————> Poor diet (junk food)
 2. Physical conditioning —————> Sedentary
 3. Stress reduction techniques —————> Not used
 4. Psychophysiological integration techniques —————> Not used
 5. Psychotherapy —————> Continued spiraling of negative behavior patterns
 6. Drug therapy —————> Cigarettes, Excessive alcohol
- Dietary improvement —————> More and better vitamins, minerals, protein, calories
- Aerobic conditioning —————> Used
- Used —————> Used
- Used to resolve affective conflict and to change belief —————> Used
- Terbutaline to stop premature labor —————> Used

Figure 1. Birth outcome fulcrum.

Source: reprinted with permission from Peterson, G. (1983). Birthing normally, Berkeley, California: Mindbody Press.

right. The amount of influence exerted is controlled by the location of the fulcrum which is determined by forces 1 through 6.

Using this model one can easily see that the assessment of risk status is only a beginning and that moving to intervene is a step in progression toward an uncomplicated, normal birth. The biological woman cannot move separately from the psychological or cognitive woman. In fact, the mind-body dichotomy is negated completely since both are viewed as energy.

Birth is more than a physical process. Birth encompasses some of the most dramatic changes in a woman's emotional, social, cognitive, and family life (Peterson, 1984). Based on a systems-energy model, assessment of only one part of the system would not reveal completely valid information about the dynamics of the system as a whole. Only a holistic assessment could succeed in measuring the energy dynamic.

A clinically useable tool could help health-care providers to take a more holistic approach to prenatal assessment. Such a tool would serve both the client and society by allowing for the appropriate distribution of health-care resources.

Nominal Definitions

This section presents theoretical definitions for the major constructs used in the study.

Holistic assessment. Holistic assessment is an attempt to gain information in order to allow the practitioner to understand the whole in order to analyze its effect on the parts. The goal of this assessment is the understanding of a unitary human being at a given point in space-time within the perspective of a universe of open systems. It includes an assessment of the variable of life in all its aspects, the physical, the psychological, the cognitive, the social, the economic, and the spiritual (Mehl & Peterson, 1984).

System. The system is the cornerstone of the holistic perspective. The aspects and behavior of a system cannot be understood without an awareness of the whole (Mehl & Peterson, 1984). Human beings are systems in Rogers' (1970) theory of unitary human beings. These energy systems are greater than and different from the sum of their parts and are also greater than that portion of an individual visible to the naked eye. The health-care provider is also an integral part of the system and thus influences and is influenced by any client intervention (Rogers, 1970).

Physical aspects of a unitary human being. The physical aspects of a unitary human being would include but are not limited to, those aspects which often are visible to the naked eye. These aspects are body structure, general physical health, a history of the individual's past illnesses and deviation from health, and also biochemical risk factors such as diabetes. The physical aspect also includes height, weight, and

genetic background. Further, this aspect would also include physical input into the system, such as exercise, diet, medications, and alcohol or tobacco use (Mehl & Peterson, 1984)

Psychological aspects of a unitary human being. The psychological aspects of a unitary human being are sometimes directly observable and sometimes must be elicited through questions or actions. These psychological aspects are the aspects traditionally attributed to the emotional level of a human being. They include affect or whether the individual is happy or sad. Anxiety and stress are also a part of the psychological aspect. Stress is the influence of an event on the system. Stress may be tumultuous and disruptive or creative and transformative. Anxiety is a psychophysiological event and may be the human response to a stressor. Anxiety does not exist as a commodity but is an experience of dysphoria, a fear that one will be hurt or that one will lack a necessary item or resource needed to survive in a manner acceptable to that individual (Mehl & Peterson, 1984).

Beliefs are also an integral part of these aspects of a unitary human being. A belief is an assumption made about the world which may or may not be conscious, which may have a great deal of emotional overlay and which can determine an individual's interpretation of sensory input (Mehl, 1979).

Any technique used by an individual which impacts directly on the emotion would also be considered a part of the psychological aspect. Stress reduction techniques, psychotherapy,

counseling, and psychophysiological techniques such as hypnosis and biofeedback would all be considered as input to the psychological aspect.

Cognitive aspects of a unitary human being. The cognitive aspect of a unitary human being is the aspect we associate with the mind and intellect. It is that portion of the mind which is associated with learning about the world. This aspect would be directly associated with an individual's level of education, occupation, and ability to remember and analyze data. This might be reflected in personal vocabulary, speaking or writing ability, or in the ability to do skilled work.

Social aspect of a unitary human being. The social aspect of a unitary human being is that aspect which in most cases falls within the environmental field as defined by Rogers (1970). It encompasses the family and societal influences on a human being. This aspect is not limited to the mere existence of an individual's relatives or the interaction with an institution or community but involves the meaning of these parameters to that individual. Thus the presence or absence of family and friends would be a part of the social aspect of an individual, but that individual's interpretation of their presence or absence would also be a part of his/her social aspect.

Economic aspect of a unitary human being. The economic aspect of a unitary human being is that aspect associated with the possession of money to meet that individual's needs. This

aspect may be reflected in yearly income, physical possessions, or in occupation. The economic aspect is closely associated with the social aspect since economics will greatly influence an individual's choices about where to live and may also influence the ability to maintain family ties. This aspect may also dictate the kind of health care one may seek or receive.

Spiritual aspect of a unitary human being. The spiritual aspect of a unitary human being is the aspect associated with an individual's perceived relationship to a higher power. This higher power may be a traditional god or may be a more generalized concept such as universal good. Included in this aspect would be any aspects of this religious belief system which influence this individual's life or life choices. The absence of a belief in a god is also considered part of an individual's spiritual aspect.

Surety. Surety refers to the safe or normal course of birth. It is the natural resolution of the birth process in which neither the infant nor the mother is compromised or endangered and in which there is no requirement for medical intervention. On a scale of the general outcome of birth (Figure 2), this would be a rating of five or exceptionally normal delivery with no interventions (Peterson, 1984).

Risk for physical birth complications. Risk for physical birth complications refers to a woman's chance of experiencing complications which range from minor to life threatening (Mehl & Peterson, 1985).

Content validity. The validity of any instrument can be defined as the extent to which that instrument measures what it is intended to measure (Brink & Wood, 1978). Content validity refers specifically to the representativeness of the questions in an instrument (Polit & Hungler, 1983). Content validity is based on judgment. Experts in a given field are often called upon to analyze the items contained in an instrument in order to judge whether those items represent the proposed domain of the instrument (Shelley, 1984).

Assumptions

The assumptions of the present study are related to the societal evaluation of birth and the nature of human beings as open systems. A positive outcome of birth is perceived by society as a birth that produces a living and uncompromised infant and a healthy mother. Birth itself is a mind-body process which transcends the dichotomous belief that the biological self is separate from other parts of a human (Peterson, 1984). Birth complications are not due to the randomness of nature but are part of the interacting web of human and environmental field. These interacting forces cannot be separated from their place with the family and societal systems. By assessing the whole rather than the parts in isolation, one can better predict if society's desire for a positive outcome at birth can be obtained.

Other assumptions of this study are that those individuals surveyed to assess content validity will answer the

survey form truthfully and that they will possess expertise in prenatal assessment.

Objectives

The focus of this study is assessing the content validity of a clinically useable holistic screening tool for judging birth risk. The Holistic Prenatal Surety-Risk (H.P.S.R) screening tool is an abbreviated form of the Holistic Prenatal Risk Assessment (H.P.R.A.) developed by Mehl and Peterson (1984). Using the data from Mehl and Peterson's previous study, those sections of the assessment which were most correlated to outcomes were condensed into a more clinically useable tool. The condensed tool was developed by this researcher in collaboration with Lewis Mehl. The items chosen for the condensed tool were selected on the basis of the items most correlated to outcomes as derived by a multiple-regression analysis. If input to an item was obtained more than once in the assessment, the item was deleted from all but one section of the condensed tool. Finally, the items which the researchers themselves felt to be most valuable and which produced, in the researcher's opinion, the most honest responses, were retained preferentially.

CHAPTER II

A REVIEW AND SYNTHESIS OF THE LITERATURE

Review of the Literature

The literature review is organized to emphasize the need for prenatal risk assessment, the previous tools available for risk assessment, a review of the many factors which have been implicated individually in pregnancy risk, and a review of tools used which encompass these factors. There is a vast array of literature available on these topics. This is not intended to be a comprehensive review. It is a selected review of the key factors that have been demonstrated empirically to be important.

During the last century maternal-infant death rates have fallen dramatically, but these drops have not produced national statistics which are in keeping with our standing as an industrialized nation (Aubry & Pennington, 1973). Infant mortality rates in many other industrialized countries are better than those recorded in the United States (Erickson & Bjerkedal, 1982; Kessner, Singer, Kalk, & Schlesinger, 1973). Erickson and Bjerkedal (1982) reported that the adjusted fetal and first-day-of-life mortality rates from 1969 to 1976 show Norway's rate to be less than U.S. rates, especially when considering the rate for non-caucasian racial groups. The 1976 figures show a rate of 36 per 1000 births as the non-caucasian rate in the U. S. Guyer, Wallach, and Rosen (1982)

stated that the U. S. ranked seventeenth among western nations in infant mortality in 1978 with a rate of 13.8 deaths per 1000 live births. Hein, Lathrop, and Papke (1985) reported that neonatal deaths before 28 days of life were correlated with birth weight. In fact, the death rate of 9.9 per 1000 live births when compared by weight showed a rate difference of 2.5 per 1000 for infants larger than 4000 grams to 707 per 1000 for infants weighing less than 1000 grams. Many authors conclude that decreasing the number of low birth weight infants born in the U.S. would increase the U.S. world ranking in infant mortality (Erickson & Bjerkedal, 1982; Guyer, Wallach & Rosen, 1982; Hein, Lathrop & Papke, 1985).

There is also concern that the true death rate for mothers and infants in the United States is underreported (Rubin, McCarthy, Shelton, Rochat, & Terry, 1981). A recent study in Washington state by Benedetti, Starzyk, and Frost (1985) concluded that less than half of the maternal deaths in that state were reported from 1977 to 1981. Using computerized data files of death certificates of women who died during that period, they manually matched this list with the birth-fetal death index. The cause of death, interval between delivery and death, and other data were reviewed to determine if a classification of maternal death should have been made. Twenty-six maternal deaths were found that were not recorded during that period. Although this study was limited to one state over a short period of time, percentage

of underreporting could lead one to conclude that the chance of maternal death related to pregnancy may be greater than commonly recorded.

Biomedical Risk Screening

The benefits of intensive medical care during pregnancy and at birth for women who have been judged at risk have been well documented (Nesbitt & Aubry, 1969). The prediction of risk status generally has been determined in the medical setting by tools which record biomedical risk factors (Hobel, et al., 1973; Laxova et al., 1975; Walker, 1976). These tools have correctly identified a portion of the women who will be at risk at birth since studies report as many as 60% of all pathologic outcomes are the results of the 30% of women who are judged high-risk (Nesbitt & Aubry, 1969). One problem with these scales is the high percentage of both false positive and false negative results (Casson & Sennett, 1984; Lesinski, 1975). Nesbitt and Aubry (1969) reported that 20-30% of these mothers judged as low-risk became high-risk at birth. Smilkstein, Helsper-Lucus, Ashworth, Montano and Pagel (1984) reported a similar set of problems with the eight most commonly used assessment tools whose predictive values range from 4% to 43%.

Part of the difficulty with these biomedical assessment tools as described by Nesbitt and Aubry (1969); Aubry and Pennington (1973); and Casson and Sennett (1984) is that

they judge risk as it affects only the physical aspect of a woman. While many studies have confirmed the validity of various physical risk factors both individually and in combination (Batzofin, Fielding, & Friedman, 1984; Friedman, 1973; Wallace, 1970), it is more than these physical factors which moves a woman toward a pathological birth (Blattner, 1981). The biochemical effects of high-risk pregnancy have been reported (Mondanlouy, Yeh, & Hon, 1974). This study of 150 women revealed that those mothers judged as being physically at risk were more likely to have a fetus that was more acidotic during labor than the women who were not in the high-risk group. These researchers examined percutaneous carbon dioxide levels and base deficits in labor and during the infant's first 64 minutes of life. These results showed the importance of correctly identifying high-risk mothers in order to provide biophysical and biochemical surveillance during labor.

Psychosocial Factors

Risk has been related on an individual basis to a wide variety of psychosocial factors. Social habits such as drinking alcohol, smoking, marijuana use, and caffeine consumption have all been implicated in maternal-fetal compromise (Hingston et al., 1982; Kirkinen, Jouppila, Koivula, Vuori, & Purrrkka, 1983; Little, 1978; Newton & Hunt, 1984; Sexton & Hebel, 1984). Although some traditional tools contain assessment for smoking and alcohol consumption (Hobel,

Hyvarinem, Okada, & Oh, 1973) these tools seldom assess for the added risk of combined use of such substances (Abel, 1985).

Other factors such as the length of time that social habits have been present can play a significant role. Cnattingius, Axelsson, Eklvnd, & Kindmark (1985) studied all pregnant women in Uppsala County, Sweden, who gave birth to single, live-born infants during 1980 at the University Hospital of Uppsala. These women were screened early in pregnancy for fifteen reported risk factors which could lead to intrauterine growth retardation. All women falling in the risk group and a randomly-drawn control sample were compared. A multiple regression analysis was performed to estimate the influence of specific risk factors on birth weight as standardized for gestational age. Maternal age itself showed no effect on standardized birth weight; however, infants delivered to women who were over 35 years old and smoked were at higher risk than those delivered to younger smokers. This leads one to conclude that smoking may be an interactive factor with implications having to do not only with the presence of smoking but the amount smoked and the length of time smoking has occurred.

While age has traditionally been a factor used to assess risk (Laxova, Lewis, & Suddaby, 1975; Casson & Sennett, 1984) this is now being reassessed. Adams, Godfrey, Oakley, and Marks (1982) reported a trend toward an increased pregnancy rate in women over 35 years of age. Their study was based

on projected trends and information from the U.S. Bureau of the Census. Recently studies have confirmed that age alone has less effect on pregnancy outcome than previously presumed, but that an interaction of age and other risk factors may put a woman at higher risk (Cnattingius, Axelsson, Eklvnd, & Lindmark, 1985).

Diet and nutrition as they affect the risk for low birth weight or shoulder dystocia have been studied (Brown, Jacobson, Askue, & Peick, 1981; Corgett & Burst, 1983; Klebanoff, Mills, & Berendes, 1985; Lechtig, 1975; Miller & Jekel, 1985; Rush, Higgins, Sadow, & Margolis, 1976; Travis & Read, 1982; Williams, 1981). Recent information suggests that regular exercise is not detrimental (Lotgering, Gilbert, & Longo (1984) but that exercise may promote beneficial hormonal changes in women (Carr et al., 1981).

Lifestyle factors have been analyzed in depth in relation to pregnancy risk. The effect of employment on a woman's pregnancy has been studied to determine which parameters of the work environment may be detrimental (Bayer, 1982; Franco, Evans, Best, Zrull, & Pizza, 1983; Mamelie, Laumon, & Larzar, 1984; Murphy, Dauncey, Newcombe, Garcia, & Elborne, 1984). A study of 69,617 births during a 14-year period in England revealed that healthy women without an adverse obstetric or medical history can continue in employment during pregnancy without increasing their risk status (Merphy et al., 1984). This survey, however, only differentiated between those women who worked outside the home

during pregnancy and those who did not. No division was made as to type of employment or physical stress involved. Mamelle, Laumon and Lazar (1984) reported that their study of 3,437 women in France revealed a significant relationship between prematurity and a job which involved a high occupational fatigue score. This score was based on five factors: posture, work on an industrial machine, physical exertion, mental stress, and environment. Their results showed a prematurity rate of 8.3% in a group of occupations receiving high fatigue scores. The four categories of workers who fell into this group were shop staff and storekeepers, medico-social staff, unskilled workers, and cleaning staff. The prematurity rate in positions with a lower fatigue score was 3.5%. These low score occupations were executive staff, teachers, office staff and skilled workers. Although this study was preliminary in nature, it suggested that type of occupation is related to pregnancy risk.

It is interesting to note that the overall prematurity rate in the working women was listed as 5.8% while the rate for those women listed as housewives was 7.2%. The type of work done by women in the home could be compared to those work-related categories. On a task basis it would have been informative to know what type of fatigue score the job of the housewife would have obtained.

The effect of childbirth education on the birth experience has been analyzed (Doering & Entwistle, 1975; Wideman

& Singer, 1984). Doering and Entwisle (1975) used a sample population of 269 women, all of whom were married and living with their husbands. The subjects were obtained through informal networking in cooperation with a local childbirth educator. Interviews 2 months following delivery were conducted in the new mothers' homes. One half of the sample population had prepared specifically for childbirth by taking six to eight Lamaze classes. The remaining 137 women prepared to varying degrees, and this degree of preparation was recorded. The two groups did not differ significantly on the following variables: age, parity, socioeconomic status, or education. Two dependent variables measured in the interview were "attitude toward childbirth" and "reaction to the baby." The degree of women's consciousness at delivery was also scored. Their data revealed a strong positive correlation between a mother's prior preparation and her attitude toward her newborn infant, mediated through the perceptions of the nature of the birth process. One problem with this study was the self-selected nature of the groups. It is possible that a certain type of woman chooses to seek out training and also to view birth more positively.

Another aspect related to childbirth education is the positive effect of a supportive companion. Sosa, Kennell, Klaus, Robertson, and Vrrutia (1980) reported that the presence of even an unrelated supportive companion during labor and delivery shortened labor, enhanced maternal behavior,

and decreased the likelihood of development of complications requiring intervention. These researchers suggested that there is a possibility that an association exists between acute anxiety and arrests of labor or fetal distress. One limitation of this study was that it was done in Guatemala with primigravidas who had received no prenatal preparatory classes and who gave birth in an unfamiliar, crowded hospital environment. These aspects may have exaggerated the effect of a supportive companion.

Early prenatal care is a vital factor in reducing risk in pregnancy. Donaldson and Billy (1984) analyzed the impact of prenatal visits on birth weights in six countries: Chile, Egypt, Honduras, Singapore, Sweden and Thailand. The researchers concluded that the number of prenatal visits was a significant determinant of birth weight. Elster (1984) designed a similar study of Utah births also using logarithmic linear analysis to determine the risk of delivering a small-for-gestational age infant in relation to prenatal care. Data on 34,267 births during a 5-year-period were collected. The results of this study suggested that risk is increased in the very young adolescent who is less than 15 years of age and in adolescents who receive late prenatal care. It was also noted that young adolescents who did receive early prenatal care were not at risk when compared to adults. Both studies provided large data bases and reached similar conclusions about the importance of early prenatal care.

Emotions, Beliefs, and Stress

The effect of emotions, fear, belief systems, and stress on the outcome of pregnancy have also been studied. Gunter (1963) conducted a comparative matched-pair study of Negro patients who gave birth at George W. Hubbard Hospital in Nashville, Tennessee. The twenty matched pairs were derived by selecting the first twenty premature infants born to medically low-risk mothers. These low risk mothers were then paired with mothers of normal infants on the basis of age and parity. All mothers were scored on the Cornell Medical Index, completed a social data form related to medical data, were measured as to self-concept using the Thematic Apperception Test, and had a home study report completed by a public health nurse after delivery. The study found that the mothers of premature infants were significantly more dependent and helpless ($p = .005$), and perceived themselves as more immature and inadequate as a female ($p = .005$). The preterm mothers also exhibited more sickness and body concerns ($p = .005$). The researchers suggested that this finding may have been related to the tendency for the preterm mothers to display their feelings with somatic symptoms. The mothers in the control group and test group also differed in their attitude towards heterosexual relationships. The mothers of premature infants rejected heterosexual relationships and the mothers of normal infants desired close heterosexual relationships. Gunter (1963) concluded that the

"physical, psychosomatic, and neuropsychiatric characteristics and the social or life situation of the mother are related to and may, in part, determine the outcome of pregnancy" (p. 340). While the small sample size and unique population of this study may limit its generalizability, it presented an attempt at interpreting the multifactorial causes of prematurity.

Gorsuch and Key (1974) recorded the results of a study of anxiety and life stress during each trimester of pregnancy. The subjects were 118 women attending a clinic serving low-income women. The subjects were scored on the State-Trait Anxiety Inventory and the Life Change Inventory. Post-delivery, the women were divided into those whose pregnancy and delivery were problem-free and those who developed one or more abnormalities. This study found that high states of anxiety and life events are independent factors which are both related to abnormalities of pregnancy. They also found that the greater the stress of life events, the more likely obstetrical complications are to occur. This relationship was present, however, only during the last two trimesters. This study was likewise limited in regard to the specific population included; however, the longitudinal prospective nature added to the strength of the study.

In 1978 Morishima and Pedersen published an account of their animal studies which revealed that pregnant monkeys deliberately exposed to stress exhibited increased maternal

blood pressure and heart rate, as well as fetal bradycardia and decreased fetal oxygenation. Clearly such an experiment using human subjects would be unethical. Michigan researchers have, however, used women's own self-report of anxiety as a comparison figure with blood sample levels of plasma catecholamines and plasma cortisol both during pregnancy and labor (Lederman, Lederman, Work, & McCann, 1978). This study of 32 married, primigravid women who were measured as being medically low-risk, revealed that increased anxiety was significantly correlated to increased plasma levels of epinephrine and cortisol. Both of these items were also correlated positively with longer duration of labor. Levinson and Shnider (1979) concurred with these findings and concluded that relieving maternal stress is beneficial to the fetus and the mother.

Areskog, Uddenberg, and Kjessler (1981) studied 139 pregnant women during their 31st to 33rd weeks of gestation concerning their feelings about anticipated delivery. Using an unstructured interview format, the woman's attitudes toward childbirth were classified into one of three groups based on her fear of delivery. Thirty-two out of 139 women were categorized as expressing moderate to severe fear of childbirth. The researchers concluded from these results that fear of delivery is a common phenomenon among women in an urban society. The same researchers also reported that results of a questionnaire correspond well with

the results of the unstructured interview in identification of fear (Areskog, Kjessler, & Uddenber, 1982).

The methods for measuring such items as fear and anxiety have often been questioned. Davids and DeVault (1962) administered a battery of psychological tests to fifty pregnant women in the third trimester. Although it is important to note that the group judged as more anxious experienced significantly longer labors than the less anxious group, it is also important to note which measures of anxiety revealed this difference. While the scores on the Manifest Anxiety Scale, Thematic Apperception Test, Sentence Completion Test and the psychologist's clinical evaluations all showed a significant correlation between anxiety and delivery room difficulties, the scores on the anxiety self-rating scale were not significantly different between the two groups (Davids, DeVault, & Talmadge, 1961a).

Other studies have found no significant correlation between pre-and postnatal anxiety and birth outcome (Levy & McGee, 1975; Scott-Heyes, 1982). Both of these studies, however, used some version of self-report as the basis for their anxiety evaluation. Both studies involved completing questionnaires only and did not include a clinical evaluation with an interview format. Each of these studies did, however, produce some interesting information concerning the effect of belief systems on the experience of childbirth. Scott-Heyes (1982) found that anticipated and actual satisfaction

with childbirth were significantly correlated in her study of 60 women. These results suggested that the expectations or beliefs a woman brings with her to childbirth affect her evaluation of the event. Levy and McGee found a significant correlation between a woman's perceptions of her own childbirth and her perception of her mother's childbearing experience. This demonstrates the effects of belief systems within a family upon the dynamics of birth. Thomas Verny has written extensively in case study format of his evaluation of this link between a mother's birth experience and the experiences of her own mother (Verny & Kelly, 1981).

Other Psychological Factors

Psychological factors have been studied in an attempt to correlate these factors with abnormalities at delivery (Benedek, 1970); Bibring & Valenstien, 1976; Jones, 1975; McDonald, 1968). McDonald (1968) reviewed studies on this topic from the years 1952-1967 as to methodology and subjects and found that most of these studies had methodological shortcomings. He thus concluded that there was no positive relationship between psychological and physiological functioning during pregnancy. He challenged researchers to produce prospective rather than retrospective studies on anxiety and emotions during pregnancy.

A number of subsequent studies were directed to this purpose (Benedek, 1970; Bibring & Valenstien, 1976; Jones, 1975). These researchers studied not only the psychological

effects of pregnancy (Bibring & Valenstein, 1976) but whether psychological assessment was a successful prediction of obstetric outcome (Jones, 1975). In his study of medically low-risk women delivering at an urban hospital, Jones (1975) found that the use of a psychological questionnaire of recent events predicted at a statistically reliable level whether a woman would experience physical complications of labor. Sixty-four percent of the patients who experienced complications had been identified correctly; however, this was at the expense of a high false positive rate of 43%. His tool did, however, prove to have a greater prediction value on primigravidas. Since these are the women who experience the greatest psychological transition during pregnancy (Bibring & Valenstein, 1976), this seems to be a significant finding.

Several multifactorial studies of emotional and psychological parameters have failed to show a correlation between the results of these evaluations and physical risk (Carpenter, Aldrich & Boverman, 1968; Grim & Venet, 1966). It should be noted that these studies did not screen out medically high-risk patients and that no correlations or recording was made of this very important intervening variable. Nuckolls, Cassell, and Kaplan (1971) did, however, conclude that women with high life change scores and low psychosocial assets scores were significantly more likely to develop complications even though these factors alone were not correlated to physical outcomes.

Davids, DeVault, and Talmadge (1966) studied the relationships between psychological variables, intelligence, and health care provider personality ratings, with pregnancy outcome. Their findings showed that anxiety was significantly and positively correlated to abnormal outcome. Their study was only preliminary in nature and the small number of subjects suggested the need for caution in interpreting these findings.

Sugarman (1977) has pointed to the many events during pregnancy, birth, and the postpartum period which may influence the emotional and physical well-being of child and mother. Researchers have sought information about the effect of antepartum and intrapartum events on adjustment (Malnory, 1982). Kumar, Robson, and Smith (1984) developed and tested for reliability and validity a questionnaire aimed at identifying the mother's risk for psychiatric disorders. All of these studies related to a woman's ability to parent; and although they are not directly aimed at physical birth risk, they are of interest. In a systems perspective anxiety regarding future parenting would be a factor influencing birth outcome. Certainly anxiety or apprehension about future parenting would fall into the psychological aspects of holistic assessment.

Several authors have focused attention on possible prenatal interventions to address potential problems related to birth (Ciliska, 1983; Little et al., 1984; Peterson, 1983;

Wanderman & Wanderman, 1980; Werner, Schauble & Knudson, 1982). These methods include the use of biofeedback (Little et al., 1984) and hypnosis (Peterson, 1983; Werner, Schauble, & Knudson, 1982), both of which require appropriate assessment prior to their use, in order to be effective.

Comprehensive Assessment

Recent literature supports movement toward comprehensive assessment of risk. A study done at the University of Washington studied the application of a biopsychosocial model (Smilkstein et al., 1984). This study of 93 pregnant women analyzed the effect of medical risk, life events, family function, and social support on the complication rate. The study involved women recruited through physicians' offices and childbirth education classes. A biomedical risk assessment was made and a count of total items present was recorded as the biomedical risk. Psychological factors evaluated included family function, recent life events, and a measure of social support. No specific mention was made in this research of nutrition, belief systems, or obstetrical history. Hospital records were obtained and scored on a 35-item delivery complications checklist. Postpartum complications were then judged based on a questionnaire score administered to the woman at 6-weeks postpartum. A multiple regression model was used to examine the relationship between biomedical and psychosocial risk. This pilot study showed that biomedical risk was not significantly correlated to either

delivery or postpartum complications while psychosocial risk was related to both delivery and postpartum complications. The best postpartum complication predictions were obtained from the joint family function and biomedical risk assessment. The researchers concluded that family function was the most predictive psychosocial variable and that the use of an integrated-risk assessment increased prediction of complications by 11% compared to biomedical-risk assessment alone.

Mehl and Peterson (1984) also studied the use of comprehensive assessment to judge risk. Their research was based on "phenomenological methodology and its practical application in grounded theory" (Peterson, 1984, p. 204). The methodological base was formed from the observation that many clinicians were able to accurately predict problems during labor as a result of intuition. In many cases the clinician could predict which specific complications would occur without any apparent objective decision base. Mehl and Peterson interviewed practitioners who had been making accurate predictions and examined 500 case histories in detail. Aspects of this analysis included past medical history, emotional life history, predominant behavioral patterns, biobehavioral patterns, coping styles, family medical history, nutrition, stress, energy, personal belief systems, and biogenetic contributions. Interaction among

these variables was examined to discover underlying processes which might reveal themes which could lead to prediction of risk. Both the frequency of an assessment item and the predictive abilities of each assessment item were evaluated. A tool for a prospective study was developed based on inclusion of these most frequent and most predictive items (Appendix A).

The methodology for this prospective study was a phenomenological one in which each woman in the study was considered as an individual and not as an obstetrical patient with similarities to any group or class of "obstetrical patients." Mehl and Peterson (1984) defined phenomenology in the following manner:

Phenomenology has also been defined as the non-judgemental and presuppositionless study of first person experience. Researchers and philosophers of phenomenology have discovered that all experience is actually first person experience. In the phenomenological attitude, objectivity is impossible. Without our own consciousness we would not be conscious of the pregnant woman and her family. We cannot eliminate ourselves from perception, since it is we who are perceiving. Without us, perhaps someone else would perceive, but we could never know this without our consciousness. In using the phenomenological approach we discover that it is not possible to eliminate the subject. Therefore subjectivity cannot be eliminated, and objectivity is impossible. In phenomenology, all knowledge begins with first person experience.

The phenomenological position is that objectivity is a fraud, since it does not exist. Objectivity is actually a rather limited form of subjectivity. It is a statement of the form "It is my way of seeing the world when several other people whom I respect agree with me," or "It is my way of seeing the world when I try not to allow my feelings to influence me."

In phenomenology the ultimate source of knowledge is our personal experience. Phenomenology is called radical empiricism for placing the source of knowledge in human experience. (p. 182)

Using this phenomenological concept, they studied the perception of health care providers and their own intuitive sense of the pregnant woman and her family. The study was designed to determine if a group of practitioners who systematically assessed these factors could accurately predict risk based on this assessment and intuition. The assessment tool (Appendix A) was first administered to the subjects at 12-weeks gestation. None of the subjects in this study possessed any high risk prenatal factor listed in Appendix C. Each of the subjects attended a community clinic in Berkeley, California. The women were seen by both counseling staff and medical staff during each trimester. The past medical history, review of systems, and birth counselor interview (Appendix A) were all done with interview format. All other forms used in the assessment (Appendix A) were given to the women to complete at home and return to the clinic at their next visit. The assessment information was then evaluated in a group meeting by the practitioners involved in the woman's care.

Three groups were included in this group meeting: the medical staff, the counseling staff, and the research group. No mention was made as to the number of participants in each group meeting or whether the same individuals met for each client throughout the 3 years required to complete the research.

The group was presented with the fulcrum diagram referred to earlier (see Figure 1) and after discussing the client,

each member of the group assigned an individual risk status to the woman based on his or her concept of the patient as a whole. These individually assigned scores were then averaged to obtain a group consensus score on that woman's risk status based on a 5-point scale. Only the consensus score was presented in the research. A group meeting to assign risk scores was done for each woman at 12, 24, and 36 weeks gestation. For the research, the 36 week score was recorded as that woman's final risk assessment. The categories of risk were defined as follows:

5 - Entirely normal delivery expected without the need for any medical or psychological intervention. Could be at home.

4 - Probably normal delivery, but with possible/probable need for psychological intervention which would most likely be effective and/or minor medical intervention (episiotomy, etc.).

3 - Unpredictable, or expect complications which could be probably handled at home, but we would prefer not to. Would much prefer hospital birthing room and will do what we can to accomplish that.

2 - Expect complicated delivery with need for hospital intervention. Would not do at home.

1) Expect major complications in which every second is of the essence (Peterson, 1984, p. 210).

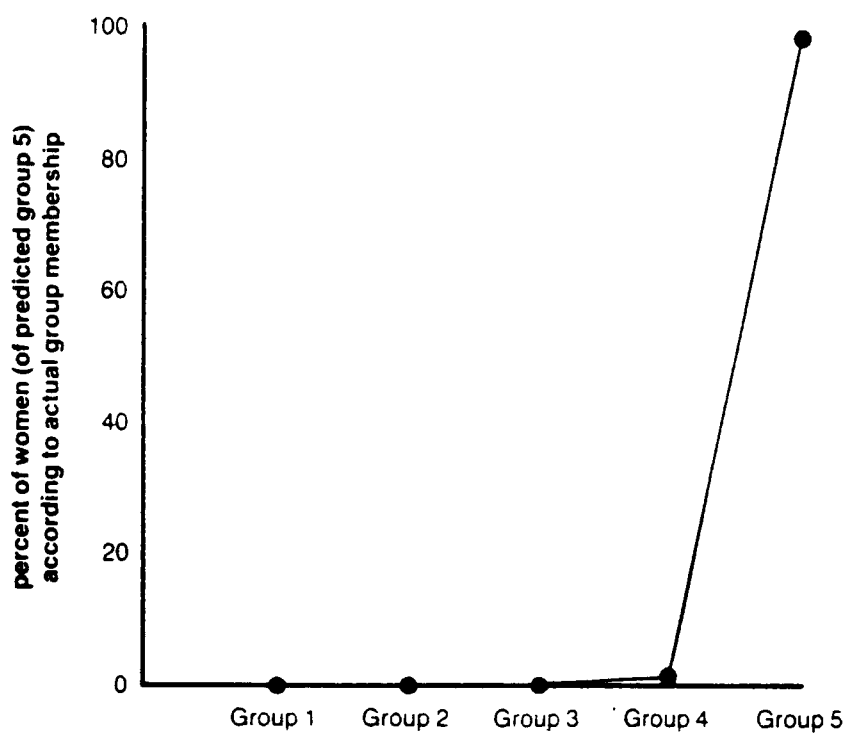
After the birth had taken place, an independent panel reviewed the record of the birth and assigned a category of actual risk which was experienced at birth. These blind raters reviewed patient charts and ranked actual birth outcome according to severity of complications rather than number of complications.

The groups were then analyzed to determine how many individuals in each prediction group fell within that outcome score. The results were recorded in graph form.

Figure 2 represents the outcomes for prediction group 5. Those women predicted to have a normal birth did so with only two obtaining a score of 4 and experiencing very minor complications. Figure 3 illustrates the outcomes for prediction group 4. This illustrates a successful prediction of 96% for normal or nearly normal birth since 31% would have fallen in group 5 and 65% in group 4. Figure 4 illustrates the outcomes of prediction group 3. This group showed the greatest variance. Since this group included those women who were judged as unpredictable, this was not an unusual finding. What these figures do indicate is that 39% of the time delivery was substantially normal, but 61% of the time technology was required for this group to give birth. Figure 5 illustrates the outcomes for those in prediction group 2. The prediction rate for actual group outcome was high for this group with 85% actually falling in group 2. No women were predicted to fall in prediction group 1. Three such complications actually occurred and no woman predicted in either group 4 or group 5 experienced such a complication.

Based specifically on categories, 68.3% were predicted accurately, and 21% were predicted to have more complicated outcomes than those that occurred. However, it should be noted

Figure 2. Outcomes of Prediction Group 5.



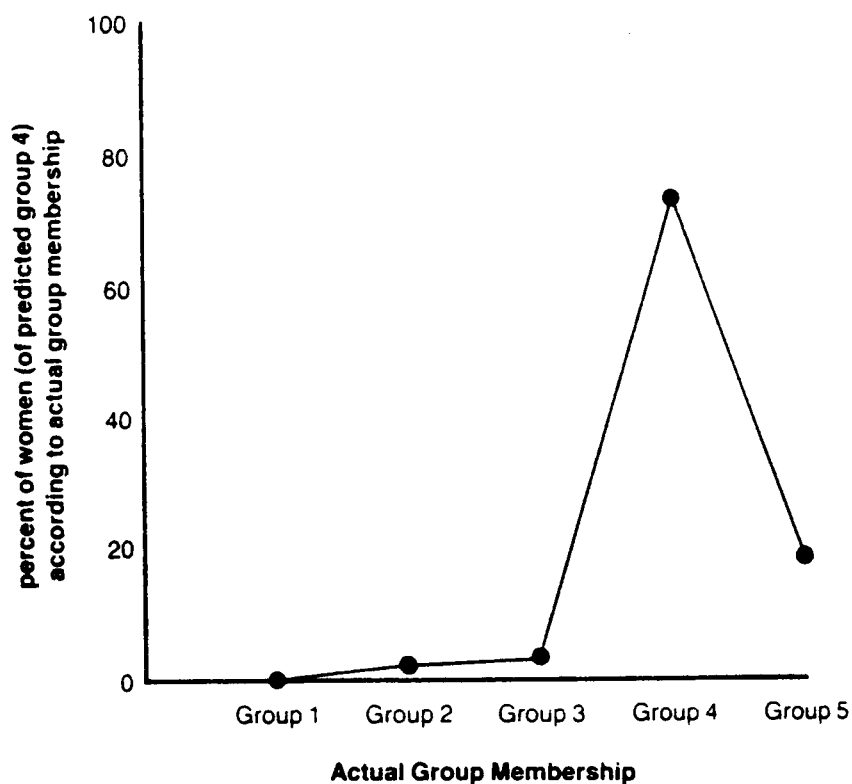
Results of Prediction Group 5

Had entirely normal birth

(100%)

Source: reprinted with permission from Peterson, G. (1983).
Birthing normally. Berkeley, California: Mindbody Press.

Figure 3. Outcomes of Prediction Group 4.

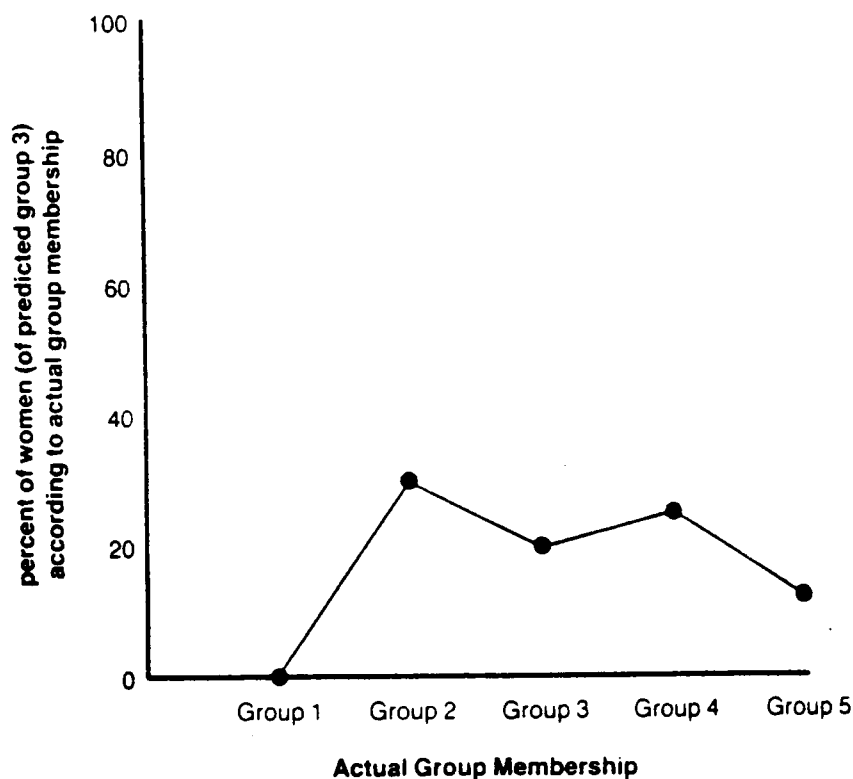


Results of Prediction Group 4

Number in Prediction Group 4	(27%)
Percent who had entirely normal births	31%
Percent who were in actual group 4	65%
Percent in actual Group 3	2%
Percent in actual Group 2	2%
Successful prediction for alternative style delivery (predicted Group 4 or 5 remains 4 or 5)	95%

Source: reprinted with permission from Peterson, G. (1983).
Birthing normally, Berkeley, California: Mindbody Press.

Figure 4. Outcomes of Prediction Group 3.



equi-potential prediction implies that our prediction was that the woman could probably equally move either toward normalcy or complication

Results of Prediction Group 3

Number of women in Prediction Group 3	(24%)
Percent in actual Group 5	13%
Percent in actual Group 4	26%
Percent in actual Group 3	24%
Percent in actual Group 2	31%
Percent in actual Group 1	3%

Source: reprinted with permission from Peterson, G. (1983). Birthing normally. Berkeley, California: Mindbody Press.

Figure 5. Outcomes of Prediction Group 2.

Percent actually in Group 5	4%
Percent actually in Group 4	9%
Percent actually in Group 3	0%
Percent actually in Group 2	85%
Percent actually in Group 1	2%

Source: reprinted with permission from Peterson, G. (1983).
Birthing normally, Berkeley, California: Mindbody Press.

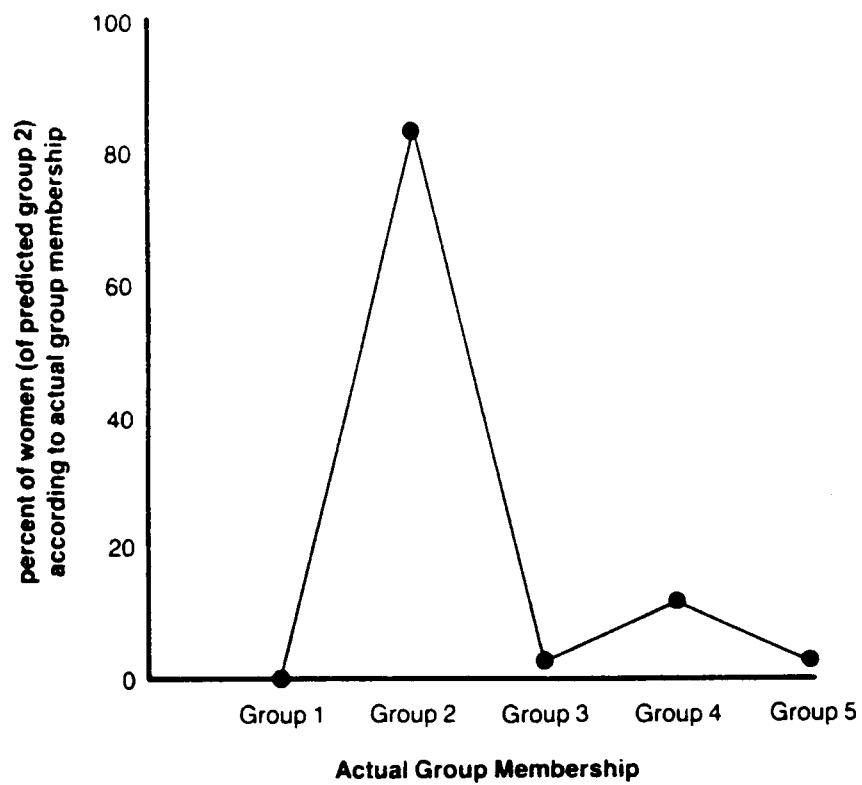


Figure 5

that 100% of those predicted to have an entirely normal birth (group 5) did so, and 96% of those predicted as group 4 fell in either group 4 or group 5 in outcomes, the percentage of women predicted to have reasonably normal deliveries who actually did so was 96% (Peterson, 1984). Using a biomedical assessment (Nesbitt & Aubry, 1973) would have resulted in a correct prediction of 36.9% among this group of women (Peterson, 1984).

It should be noted that at this point in the research the validity and reliability of the scoring system of the Mehl and Peterson tool has not been established. Since this is an intuitive model the issue of interrater reliability was not addressed at this point. This limits the generalizability of the study.

Smilkstein et al. (1984), when analyzing other risk prediction tools, reported a predictive value of 4% to 43% using eight of the most common biomedical pregnancy risk scoring systems (Table 1). The table refers to the predictive value of the tools as determined by a standardized formula described at the bottom of the table. Mehl and Peterson's tool is not dichotomous in nature. However, using the formula for predictive value and basing the numbers on women projected to fall within a given group who actually had a birth outcome within that group, the Mehl and Peterson tool would have received a predictive value of 76% on birth outcome. In their study results Smilkstein et al. did not

report the specific predictive value of their own tool. This information would have significantly strengthened their study.

Although the addition of a more extensive assessment seems to increase the ability to predict outcome, the difficulty with both of the comprehensive tools (Mehl & Peterson, 1984; Smilkstein et al., 1984) is that they are time-consuming. The additional time required might serve as a reason for health care providers to reject the use of these tools.

Synthesis of the Literature

While assessment of the woman on many levels is probably necessary to obtain a true picture of her pregnancy risk, this is not a common form of assessment (Smilkstein et al., 1984). The comprehensive tools which have been developed are time-consuming and may be impractical for the average clinician (Mehl & Peterson, 1984; Smilkstein et al., 1984). Individual assessment of factors correlated to outcome such as anxiety, social support, or alcohol use may only give a small part of a woman's true risk status (Abel, 1985; Gorsuch & Key, 1974; Gunter, 1973). Not only the woman herself, but her environment and work (Mamelle et al., 1984), as well as the presence of support during labor (Sosa et al., 1980), may influence birth outcome.

While contradictory studies do exist (Levy & McGee, 1975; Scott-Heyes, 1982) the vast majority of the literature relates birth outcome risk to many factors other than biomedical assessment alone. Although this biomedical assessment has been of value in ascertaining a percentage of the women who will experience birth complications (Hobel et al., 1973; Laxova et al., 1975; Nesbitt & Aubry, 1969), the percentage of correct prediction using these tools has ranged from 4% to 43% (Smilkstein et al., 1984). The greater time and effort involved in the use of comprehensive tools is their major drawback, but a significantly increased ability at risk prediction might make such a time investment worthwhile.

CHAPTER III

METHODS AND PROCEDURES

Methods

This study evaluated the content validity of an abbreviated tool for holistic risk screening in pregnancy. This tool is based on the Holistic Prenatal Risk Assessment (H.P.R.A.) used at the Berkeley Family Health Center (Mehl & Peterson, 1984). The validity of the Mehl and Peterson assessment has been ascertained by empirical testing on the first 270 women to give birth through that clinic subsequent to its beginning in 1977 (Mehl & Peterson, 1984). The H.P.R.A. has been evaluated through human subject testing in which reality matched prediction, by cross-validation analysis and by discriminant analysis. The predictive and content validity were assessed by the study of 500 retrospective case studies prior to human testing and by documentation in the literature. Portions of the assessment tool were based on the work of Shereshefsky and Yarrow (1973) whose psychological evaluation tool for use in pregnancy had been tested and proven valid. Subsequent to Mehl and Peterson's human testing, the staff-generated ratings were coded based on their coding system (Appendix A). The methods and results from Mehl and Peterson's risk prediction were described on pages 35 through 44.

In addition to the prediction based on group consensus, a stepwise multiple regression was applied to the 45 variables assessed in the birth counselor interview and described under belief coding (Appendix A). The purpose of the multiple regression was to determine if a predictive equation could be determined which could predict risk status as described on page 38. A linear regression in which variables were added together subsequent to multiplication by a weighting factor was used. Two criteria for inclusion of variables was applied. The first was the Beta Weight inclusion model. This inclusion model was more rigorous and determined whether each variable by itself contributed significantly to the prediction equation. Only those factors which were significantly predictive alone met the Beta Weight inclusion criteria. The second inclusion model used was the Standard Error of Estimate (SEE) model. The SEE model is a method which excludes all items which fall outside of two standard deviations from the norm based on the items already included in the regression. Since the number of variables was large, it was deemed statistically desirable to limit, in this fashion, the number of predictor variables used to obtain the predictor equation.

The number of subjects required in such a multiple regression can be determined by the estimation of power (Cohen, 1977). The power is determined by the use of statistical

tables and the values of U and L. U is the number of variables entered(45). L is defined by the formula $L=R^2(N-U-1)$. N is defined as the number of subjects in a study and R^2 is the variance predicted which in this case was .59. Using Mehl and Peterson's figures, the tables (Cohen, 1977) show a power for this test of greater than .8. The .8 figure is generally used as an acceptable power and studies attempt to attain as close to a 1.0 as possible.

The 45 variables were first divided into three groups: belief, systems or interactive, and personality variables. Each group of variables was subjected to a stepwise multiple regression. Next, all nineteen variables which qualified under the SEE inclusion model in the three groups were entered, and a new multiple regression of combined variables was produced. Using the combined variable multiple regression, 13 items were identified which accounted for 59% of the variance in birth outcome (Mehl & Peterson, 1985).

A cross validation of the multiple regression research was done using a new group of 90 women. The cross validation was utilized to determine how well the previously obtained equations would transfer to another group of women. The amount of decrease in the prediction is referred to as "shrinkage" of the multiple correlation coefficient. The figures from this analysis revealed that the Beta Weight inclusion model items remained the most stable when applied to the new group (Mehl & Peterson, 1985).

Next a discriminant analysis was employed to determine if the computer could accurately predict complication group membership based on the factors determined by the multiple regression. This resulted in a correct classification across groups of 84% when the 13 variables of the combined regression were used (Mehl & Peterson, 1985).

A cross validation of the discriminant analysis was performed using the 90 new cases used in the multiple regression cross validation. Again using the 13 combined variables, the classification was 85% correct across groups on these 90 new cases (Mehl & Peterson, 1985).

The information and validation obtained from the multiple regression analysis was used by this researcher to help in development of a shortened version of the Mehl and Peterson tool. The abbreviated version is called the Holistic Prenatal Surety Risk Screening Tool (HPSR). The specifics of the generation of the HPSR are outlined in the procedures section of this chapter.

Design

The study was a descriptive study designed to evaluate the content validity of the HPSR. The HPSR questionnaires were sent to a panel of expert judges who were asked to evaluate the validity of the scoring system and the clinical usefulness of the HPSR. The panel consisted of physicians, nurse-midwives, and nurse practitioners. Each judge received

a copy of the HPSR along with a standardized answer form entitled the Panel of Experts Form (Appendix C). In addition to completion of the Likert Scale, each judge was also asked to identify any question which they felt should be deleted or was unclear. The judge was then asked to note any further questions they felt should be added along with pertinent comments. These instructions were sent along with a credentials form (Appendix C).

Sample

The composition of the panel of expert judges was physicians, nurse-midwives, and nurse practitioners. Physicians were defined as those holding a license as an M.D. The physicians were not limited to obstetricians, but special care was taken to seek out physicians with knowledge of obstetric care and assessment. Nurse-midwives were defined as those RNs who also hold a license as a Certified Nurse Midwife. Nurse-Practitioners were defined as RNs who either possess a certification as a practitioner or who hold a Master's Degree and practice in the area of maternal care. Judges were identified by a modified networking approach. This approach used the researchers' contacts in nursing and medicine. Each judge was first contacted by the researcher in person, on the phone, or by mail, and asked if he or she would be willing to serve as an expert judge in ascertaining the content validity of a holistic screening

tool for pregnancy risk. No attempt was made to randomly select the panel, however, care was taken to select individuals with clinical qualifications in prenatal care. These qualifications are of special importance in ascertaining validity since an understanding of the specific domain measured in this prenatal assessment tool is crucial. Individuals were identified at conferences attended by the researcher and through other health care workers who supplied the names of classmates and friends who might be able to serve as judges. The list of judges and their credentials is included (Appendix C). Each judge was asked to include in their credentials form not only academic degrees and certification but also publications and any areas of special interest.

Eighty judges were identified and each was sent an instruction form (Appendix C), a credentials form (Appendix C), a scoring form (Appendix C), and a copy of the HPSR (Appendix B). Each judge was asked to complete a Likert Scale on outcome, scoring and usefulness for each section of the tool and for the tool as a whole. They were also instructed to circle any items that should be deleted, and comment on any section they desired.

The forms were sent to twenty physicians, fifteen nurse-practitioners and forty-five nurse-midwives. All eighty were also sent a stamped envelope addressed to the researcher

and asked to return the form within 2 weeks. Those who did not return the form in 2 weeks were sent a reminder post-card. Those who had still not returned their form within an additional 10 days were called on the telephone if they lived within a 400-mile radius. If they were not reached on the first call or if they lived greater than 400 miles away, they were sent an additional post card reminder. Those who had returned the form within 5 weeks were included in the study.

Thirty-four individuals returned the forms. Seventeen nurse-midwives returned the form for a return rate of 38%. Nine nurse-practitioners returned the completed forms for a return rate of 60%. Eight physicians returned the form for a return rate of 40%. The overall return rate was 42.5%.

Those returning the form were from a variety of geographic areas. They also represented health-care providers in a wide spectrum of practice settings. These settings ranged from private practice to the military.

Participation as a judge was voluntary. No economic incentives were used. Each judge was able to check a designated box if he or she wished to obtain a brief synopsis of the study results. This synopsis was sent to those requesting it at the conclusion of the study.

Operational Definitions

Several specific items within this study need additional operational definition.

Physical aspects of a unitary human being were defined as the information obtained on the Medical History Form (Appendix B), the Nutrition History Form (Appendix B) and the Obstetrical History Form (Appendix B).

Psychological aspects of a unitary human being were assessed using the information from the multidimensional Health Locus of Control Scale (Appendix B), the Life Change and Environmental Stress Evaluation (Appendix B), the Birth Counselor Interview questions (Appendix B), the emotions questions on the Social History Form (Appendix B), and the concerns and worries questions on the Obstetrical History Form (Appendix B).

Cognitive aspects of a unitary human being were defined as information obtained from the questions concerning occupation and years of education on the Social History Form (Appendix B).

Social aspect of a unitary human being were defined as the answers to the questions concerning marital status, place of birth, occupation, who else lives in the home, and the questions about support and growth activities on the Social History Form (Appendix B).

Spiritual aspect of a unitary human being were assessed by the questions about religious preference and

spiritual beliefs on the Social History Form (Appendix B).

Surety refers to the safe or normal course of birth in which the birthing woman needs no psychological or medical intervention and in which neither mother or infant is endangered. On a scale of general outcome of birth (Figure 1), this would be a rating of exceptionally normal (Peterson, 1984).

Risk for physical birth complications refers to a woman's chance of experiencing complications which may range from minor to life threatening (Mehl & Peterson, 1985). Mehl and Peterson (1985) devised a scale for measuring risk for physical birth complications and risk shall be defined as a score of 1 to 4 on the Mehl and Peterson scale presented on page 38.

Content validity was defined as the evaluation by a panel of expert judges as defined in the section outlining sample. This content validity of the H.P.S.R. was judged on a Likert Scale assessing validity of outcome prediction, scoring, and usefulness.

Validity is a determination of whether a tool "measures what it purports to measure" (Waltz, Strickland, & Lenz, 1984). Test validity for a criterion-referenced measure such as the HPSR can be analyzed on two levels, the test level and the item level. Waltz, Strickland and Lenz (1984) stated that "test validity focuses on the representativeness of

a cluster of items in relation to the specified domain (content validity)" (p. 194). These authors also stated that content validity is the prerequisite to all other types of validity for the criterion-referenced measure. A frequently used approach is to obtain input of content specialists (Waltz, Strickland, & Lenz, 1984). Popham (1978) concurred:

Criterion-referenced measures are validated primarily in terms of the adequacy with which they represent the criterion. Therefore, content validity approaches are most suited to such tests. A carefully made judgement, based on the test's apparent relevance to the behaviors legitimately inferable from those delimited by the criterion, is the general procedure for validating criterion-referenced measures (p. 29).

Several methods are available to evaluate content validity as graded by a panel of expert judges. These methods include item-objective congruence, a basically bimodal method of judging an item, and methods which utilize a rating scale and mathematical assessment of scores for agreement or congruence (Waltz, Strickland & Lenz, 1984).

Beck (1984) and Popham (1978) have recommended a simple reporting of the number of individuals and how they scored the validity. Traditional descriptive statistics such as means and standard deviations may also be used (Beck, 1984).

Since the test categories in the HPSR involve items which most clinicians would not consider bimodal, the use of a 5-point scale was employed. The validity of each test section in predicting birth outcome was rated, as was

the relative validity for the scoring system of each section. In addition, a 5-point spectrum of usefulness was rated by each judge. Since the tool was developed with the intention of producing a useable clinical tool, the rating on usefulness was particularly important. Mehl and Peterson (1985) did not test their tool for content validity as judged by a panel of expert judges, thus the input of a variety of health care providers was of vital interest in this research. Did other health care providers perceive these test components as being related to risk prediction based on their own clinical experience and did they perceive this tool useable? The input of experts in the area of prenatal assessment could, thus, help to establish the content validity of the HPSR.

The results of the content validity evaluations were reported in a simple descriptive manner with an additional column for the mean and mode as the measures of central tendency. This was done so that each judge's responses were recorded and so that the number of individuals answering in each rating category could be readily identified. The responses for nurse-practitioners, certified nurse midwives, and physicians were each recorded as a separate category and then the total judges' ratings were recorded. This allowed for interpretation of potential differences based on differing educational backgrounds.

Procedures

Development

Development of a shortened version of the Mehl and Peterson (1985) assessment of risk was done in several stages. In preparation the researcher studied Mehl and Peterson's books and attended a 4-day workshop held by Mehl and Peterson to teach individuals how to use their tool and to give them an opportunity to try risk prediction on case studies. After the researcher met with Mehl and Peterson, they agreed to assist her with advice and information in the development of a condensed version of their tool.

One of the first major problems encountered by the researcher was that the Mehl and Peterson assessment (Appendix A) was based on an intuitive mode. The researcher aimed to include as much of the intuitive nature of the tool as possible while still subdividing into categories and assessment strategies that clinicians would feel comfortable in using. It may be valuable here to define the intuitive model and discuss the relationship of this model and its implications on inter-rater reliability. In an intuitive model an assumption is made that "no objective facts exist as defined by the medical model" (Mehl & Peterson, 1984, p. 21). "Facts" as measured by one researcher only reflect that observer's relative location in the system. Consensual

facts are those made by several observers who share the same frame of reference. It would thus be an expected outcome that no two individuals would perceive a situation in exactly the same way. Thus the model relies on the group opinion of three or more trained individuals who would all consider various aspects of a woman and the system in which she exists. The individuals might possess different but equally valid training in a variety of health disciplines, but each would perceive the patient from their own unique perspective. These individuals would, however, hold in common an understanding of the concepts being measured. In the case of Mehl and Peterson's research this would include the concept of birth risk as described on page 37 and the Belief Coding (Appendix A).

Narrowing the Mehl and Peterson tool to a more useable form while still retaining the intuitive nature of the tool was, thus, quite challenging. Beck (1984) discusses the steps in development of a criterion-referenced test. The HPSR can be considered a criterion-referenced test in which the criterion being measured is birth outcome. The first step outlined by Beck (1984) was to specify the test purpose, specify the groups to be measured, determine the resources available to produce the test, identify those qualified to produce the test, and estimate the test length. The purpose of the HPSR is to determine the assessment of risk for physical

birth outcome. The proposed group for measurement was not limited to only those seen as "medically low risk" but included all pregnant women. The resources available included the time and energy of the researcher, the literature available on the topic of risk assessment in pregnancy, the expertise and advice of the Mehl and Peterson research team, and the expertise of the faculty at the University of Tennessee College of Nursing. The time available to produce the test was approximately 1 year. The researcher was qualified as a student in an MSN program with a concentration in obstetrical nursing. The estimated length of the test was determined to be 1 hour based on the researcher's perception that a longer tool would not be clinically useable.

Beck's (1984) next step was to review the test objectives. In this case the birth outcome objectives were defined by Mehl and Peterson's scoring of 1-5 on physical birth outcome as described on page 37. The criterion that society desires for each birth would be surety or a rating of 5 on Mehl and Peterson's ranking. Item-writing was Beck's (1984) third step. Since the predictive validity of items on the HPSR could only be determined by human testing, the challenge of selecting appropriate items for the tool was very important. The limited research in holistic pregnancy risk screening (Mehl & Peterson, 1985, Smilkstein et al., 1984) made selection and weighing of items very difficult. A plan for

item selection and scoring was devised and a subsequent plan for human testing at a later date was included. Since the Mehl and Peterson (1985) tool did not utilize a numerical scoring system for each content area, and since no proportionate value was given to each section, the revision of the tool was drawn mainly from the researcher's perceptions of the importance of certain areas.

The inclusion or exclusion of items was determined based on several factors. Obviously of great importance was the correlation to risk present on the results of Mehl and Peterson's multiple regression analysis as described earlier in this chapter. These figures were used especially when considering psychological and belief variables. The items chosen represented a combined R value of .77 at a .001 level of significance and together accounted for 59% of the variance (Mehl & Peterson, 1985). Questions focusing on all 13 of the combined variables which ranked at that level were included. Also included were questions which the researchers perceived to have input on those 13 variables.

Another factor considered was whether input to a given parameter was repeated in the assessment. If the same question or a similar question appeared more than one time in the assessment, it was eliminated from the condensed version (Appendix B). The perceptions of members of Mehl and Peterson's research team were also taken into consideration in determining items included in the condensed tool.

Since this assessment is intuitive in nature, these perception of how valuable a given item was to their assessment of risk, as well as their perception of the honesty of client response to an item, was important. The researchers' perception of items was also considered in determining which items to include in the condensed tool.

Each section of the Mehl and Peterson assessment tool was reviewed to determine which items to include in the condensed version (Appendix B). Items which had been shown by regressive analysis to reflect an important attribute of the criterion of birth outcome were retained on the test (Popham, 1978). This was given more relative weight as a factor than was the factor of acceptability to clinicians. The questions were retained in as original a state as possible. Rewording and reordering of questions was postponed until after the input of the expert judges had been reviewed.

One exception to the above rule was made for the Past Medical History, Review of Systems, and Family Medical History forms (Appendix A). These forms were very long and time-consuming. Lewis Mehl and this researcher reviewed the forms and since no new information on biomedical risk was obtained in Mehl and Peterson's research, it was decided that a shorter standardized biomedical risk assessment could be substituted for these sections. The one area that is often not covered by these forms which did show a statistical

correlation to outcome was a body symptom response set which included allergies, injuries, infections and drug use which was present in 48% of the women who required cesarean birth and in only 22% of the normal birth group (Mehl & Peterson, 1985). This led the researcher to retain the questions about injuries, infections, medications, and allergies and combine them with a standardized form for medical assessment. An adapted version of a prenatal risk assessment used by the Tennessee Department of Public Health was used. This form was not copyrighted and contained the most vital items of medical history and family medical history. The medical assessment form was combined with the questions from Mehl and Peterson's assessment concerning injuries, infections, body changes, medications, and allergies. These items all gave direct input to the body symptom response set correlated with cesarean section. The last two questions on specific problems and the patient's perception of how the health care provider could help were retained because the research team felt they were of particular value in judging the client-provider relationship. The final medical history form for the condensed tool can be found in Appendix B.

The Nutrition History Form (Appendix A) was retained completely because it contained questions which clinicians had reported to Mehl and Peterson as the ones they normally asked and because it was short, but comprehensive. The item

about mood when one undereats or overeats was retained because it reflected on the meaning of nutrition to the individual.

The Social History Form (Appendix A) was revised to exclude two questions. The question about special interests was excluded since this area was also covered under the question about personal growth activities. The question concerning where health care had been received in the past 5 years was excluded since past health care can be assessed in relation to obstetric care from information gathered on the obstetrical history form (Appendix B). The remainder of the questions were retained because they had proven valuable to the research team and because they provided an opportunity to assess specific aspects which were not addressed in other sections of the tool.

The questions about occupation and education related directly to the cognitive aspect of a unitary human being. The spiritual aspect was assessed in the question concerning religious preference and the more general question about spiritual beliefs. The social aspect of a unitary human being was also addressed in this form based on the personal growth activities question and on the questions concerning marital status and who else lives in the home. The questions concerning emotions were a transition between the social and psychological aspects which have many similarities.

The Life Change and Environmental Stress Evaluation was retained in the condensed version because high life stress and lack of support was correlated to high-risk outcome (Nuckolls, Cassell, & Kaplan, 1971), and this was also found to be true in Mehl and Peterson's (1984) research. This was the only aspect of the tool in which environmental stress was specifically measured, and it was also a tool which many clinicians were familiar with using. For these reasons, it was retained in the condensed version.

In Mehl and Peterson's original research design, a Scoring Test for gauging Stress and Tension Levels (Appendix A) and a "How Well Can You Relax?" form (Appendix A) were utilized. These were both excluded from the condensed tool. These measures involved a self-report of tension and relaxation, and the research team felt the answers given were not always truthful. The answers given by the women did not show any differences based on risk group status (Mehl & Peterson, 1985). The researchers felt that self-report often led to inaccurate assessment of anxiety and that more accurate data could be obtained by interview. This is interesting to note when compared with the work of Davids and DeVault (1962) which also found anxiety self-report to yield no significant correlation to birth outcome.

In the condensed version of the tool, these two assessments were replaced with the Multidimensional Health Locus of

Control Scale (Wallston, Wallston, & DeVellis, 1978). Utilization of this measure was based on the suggestion of Lewis Mehl. He felt that this tool was a very accurate and quick method of obtaining information about certain psychological aspects of a unitary human being. Since the longer free-form interview format was being excluded from the condensed version, he suggested that using the HLOC scale would be another way to obtain valuable information. The Multidimensional Health Locus of Control Scale (Appendix B) has been administered in a variety of situations. Wallston and Wallston (1981) indicated that both reliability and validity have been established. Test-retest data suggested stability over time and internal consistency measures showed the tool to be reliable especially in populations expected to remain stable over time (Wallston & Wallston, 1981).

Mehl and Peterson (1985) discovered that locus of control, as judged via an interview format, was related to pregnancy outcome. Women with normal birth outcomes saw themselves as participants in their own health and were more likely to have an internal locus of control as perceived by the researchers. In order to assess quickly this particular parameter, the Multidimensional Health Locus of Control Scale was added to the HPSR (Appendix B).

The Obstetrical History Form (Appendix B) was adapted from the supplemental Obstetrical History Form (Appendix A).

All of the questions directed to the pregnant woman were retained because they gave direct input into assessment of both the physical and the psychological aspects of a human being. The researchers felt that these questions were particularly valuable questions in understanding how a woman viewed birth and what past experiences she brought to this pregnancy. These questions also related specifically to research concerning family belief system and birth outcome (Verny & Kelly, 1981). The questions directed at the woman's partner were shortened to the two most general questions about concerns and how the partner wished to be involved in the birth. Even though the partner's reactions were deemed important, the stepwise multiple regression showed that the partner's response did not meet the beta weight criterion for inclusion at a .001 level of significance. When entered as the third step, it accounted for only 1% of the variance between groups. Therefore, only the two questions previously described were left in this section of the condensed tool (Appendix B).

The next portion of the Mehl and Peterson assessment (Appendix A) addressed was the Prenatal Thematic Apperception Test or Prenatal TAT (Appendix A), a projective test in which blurred drawings or reproductions of photographs were given to clients to look at and describe. Each client

brought these back during a subsequent prenatal visit with stories that she had written on the back of each page. The researchers then combined this information with the birth counselor interview and their perception of the client and used this information to complete the belief coding described in Appendix A. The researchers reported excellent client satisfaction and compliance with the use of this tool. They also felt that it was valuable to their assessment. It is, however, not a tool that clinicians are familiar with using, according to interviews by this researcher with health care providers. For this reason, it was excluded from the condensed tool (Appendix B).

The last section of the Mehl and Peterson assessment was the Birth Counselor Interview. The interview was conducted by someone who would not be the birth attendant. Information was elicited concerning the couple's "belief system, fears, and expectations about birth and current life stresses" (Mehl & Peterson, 1985, p. 345). No specific questions were asked, but rather a free form interview was conducted in which those things which seemed most important to the couple were addressed. This interview was approximately 1 hour in length. Subsequent to the interview the health care provider scored the client on psychological variables and beliefs as described in Appendix A. This

lengthy interview format and assessment was much too time-consuming to retain in the condensed tool. Therefore, only those variables most correlated to outcome were included in a structured question interview in the revised and condensed tool. Mehl and Peterson (1985) found that 50% of the variance between groups could be accounted for based on four of the belief items. The items were "Woman's attitude toward pain during childbirth" which when entered as the first step showed an R value of .58. "Anxiety" brought the R value to .67. "Patterns of covert behavior to become dependent" brought the R value to .69 as the third step. "Patterns of attempting to control others in relationships" moved the R value to .71, and these items then accounted for 50% of the variance. The next nine psychological aspects brought the R value to .77 or inclusion of 59% of the variance at a .001 level of significance. These thirteen variables were then used as a basis for development of questions for the shortened standardized interview format in the HPSR. The researcher in collaboration with Lewis Mehl developed a list of twelve questions which would give input into the thirteen identified psychological belief variables. These questions were then ordered based on an appropriate order for interview rather than importance to outcome. The interviewer was told not to base specific judgments on a given question, but to use the questions to perceive the individual

as a whole, and then to score each of the thirteen variables. For the purpose of explaining the development of the tool, the specific questions related to each variable will be identified. The list of numbered questions and numbered variables can be found in the Birth Counselor Interview Questions and Rating for Birth Interview sections of Appendix B and is repeated in Table 2.

Rating on variable number one relates specifically to question number eleven on the pain of labor. Variable number two, anxiety, relates to an overall impression and to question number eight. Patterns of covert behavior, number three, relates to an overall impression and to questions two and nine. The fourth variable, controlling others, relates also to question two as well as to four and nine. The fifth variable, hostility, relates to question three, five, and to question four. The sixth variable relates to self-esteem as a woman addressed in question one. Passive versus active style is the seventh variable and is covered in questions four and nine. The partner's empathy or variable number eight is related to question seven and ten. Variable nine is related to question twelve. Variable ten is both an overall impression and related to question five. Patterns of taking help is directly correlated to question nine. Variable twelve, adult role, is addressed in question one,

Table 2. Birth Counselor Interview Questions and Ratings.

Birth Counselor Interview Questions		Partner for 31st Interview
1. Tell me what you believe it means to be a woman and how do you fit this picture?		Each question rated on a 1 through 5 scale.
2. Tell me about your relationship with your parents. Tell me about your relationship with your partner.		1. Woman's attitude toward pain during childbirth: (1) refusal to accept idea of pain to (5) excellent response to reality of pain and planning for coping mechanisms.
3. What do you and your partner fight about?		2. Anxiety - 5-point scale of expressed anxiety: The woman rates (1) if she predominately exhibits anxiety and (5) if she rarely displays anxiety in her interpersonal interactions.
4. How do you usually resolve your differences?		3. Patterns of covert behavior to become dependent: (1) large discrepancy between expressed fantasy and actual behavior (5) expressed wishes and behavior are matched with a pattern that shows normal give-and-take.
5. How is your love life going? Is it still romantic? Is it still sexy?		4. Patterns of attempting to control others in relationships: (1) rigidly controlling (5) could easily be controlled.
6. Tell me about your plans for your family and for this baby.		5. Hostility between couples: (1) very hostile (5) very little hostility
7. How does your husband feel about that?		6. High self-esteem as a woman: (1) low self-esteem (5) high self-esteem
8. Tell me about some things that make you anxious. How do you react to these situations?		7. Passive vs. active style of obtaining wants: (1) would wait for help (5) would go "all out" to get her needs met.
9. Suppose you fell down at home and broke your leg. What would you do? Whom would you call for help? How would they help you?		8. Partner's empathy: (1) insensitive (5) aware of expressed needs (5) aware of expressed and unexpressed needs.
10. How would your partner react to that situation?		9. Partner's response to discussion of pain in childbirth graded as in item 1.
11. Tell me how you feel about the pain of labor.		10. Affection between couples: (1) minimal (5) intense
12. How does your partner feel about your being in pain in labor?		11. Patterns of taking help: (1) no acceptance (5) accepts help easily 12. Comfort with adult role: (1) childish (5) clearly enjoying adult role 13. Patterns of self-insight: (1) no insight (5) very insightful
Score: Average items 1 through 4; then average items 5-13. Next find the average of these two numbers, and that is the total score on the interview section.		

two and six. The last variable, self-insight, is, of course, a general impression, but is also related to questions one and six. Thus, even though individual questions should not relate specifically to one variable in a holistic perspective, there was an attempt to correlate the questions with the thirteen selected variables. The concept of interrater reliability in an intuitive phenomenological model was addressed previously in this chapter. The ability to judge these concepts might, however, require a moderate amount of additional training or at least a specific understanding of the concepts involved. Judgements about changes or additions to these items were reserved until after the input of the expert judges was evaluated. This input was judged as necessary to ascertain the familiarity of health care providers with these concepts.

After selecting the items to be retained in the HPSR screening tool, a system of scoring needed to be developed for use with this tool. Since Mehl and Peterson (1985) relied on a purely intuitive model, the scoring needed to be developed for each section. To make the tool appealing to a broader group of clinicians, some sort of guidelines were necessary to judge each section. In order to maintain some of the intuitive nature in the HPSR, general categories were set for many of the sections. These categories in the scoring of the HPSR were somewhat overlapping and vague in nature.

This would allow the clinician to assess a general category of individual who might fall under any given subscore but still allow them flexibility in using their own judgement. This concept of personal judgement is significant to an intuitive model since only the observer has his/her unique placement within the system. Since Mehl and Peterson's scoring system gave no individual evaluations and did not place given weights on given sections, a totally new scoring system was devised specifically to research the concepts of this weighting.

Little previous research on holistic risk was available and none has used an apportioned scoring system that looks at this great a number of aspects at one time. In order to determine the predictive validity of the tool, human testing to match prediction to outcome would be necessary. Subsequent to this testing, the scoring numbers could be adjusted to determine if another relative weighting of factors would produce more accurate results. The scoring system for initial testing will, out of necessity, be based very generally on other research and the perceived spectrum of these factors as outlined in Mehl and Peterson's research. Since holistic prenatal risk assessment is in such an early stage of development, it should not be assumed that it is meant as a replacement for biomedical risk assessment. The biomedical approach should still be utilized until the

development of research such as this has validated a holistic concept of health (Capra, 1982). With this as the basis of decision making, the HPSR scoring system was developed as a research tool base and not as a verified and complete tool.

The medical and family medical history sections (Appendix B) were scored based on a combination of the scoring used by the Tennessee Department of Public Health and the work of Mehl and Peterson (1985). The high and moderate risk factors already on the form were utilized and the body symptom list correlated with women who had cesarean births (Mehl & Peterson, 1985) was also included. It should be noted that a score of 1 on the Mehl and Peterson risk assessment is not what is traditionally called high risk, but is a judgement of a potential life-threatening outcome. For this reason, two traditional high-risk factors were deemed necessary to receive a score of 1. Traditional scoring systems would judge risk in terms of a need for intervention but not necessarily life threatening.

It should also be noted that although each subscale was graded on the same 5 to 1 risk assessment, a systems perspective precludes one from assuming that each separate section or factor by itself is directly correlated to a specific outcome. These scores are merely factors to be entered into the overall scoring system to determine what

direction the whole system is moving toward in relation to birth outcome. It is the effect on the system that is most important.

The nutrition history (Appendix B) scoring was apportioned based on the literature review and also based on review of case studies from Mehl and Peterson's (1985) research. The detrimental effects of alcohol, drugs and tobacco were ranked with no use of these substances moving a woman toward surety while use or abuse of the substances moved a woman toward risk. Nutrition such as food intake and vitamin use was also divided along a spectrum with an adequate diet without caffeine use moving a woman toward surety and an inadequate diet moving her toward risk. This was based partially on Mehl and Peterson's (1985) findings that food and nutrition management problems were 12-22% more likely to be present in a woman who required intervention at birth when compared to a group of women who experienced normal birth.

The social history scoring was more difficult to differentiate. Case histories from Mehl and Peterson's (1985) research were reviewed with respect to the social aspects of a unitary human being. The stepwise multiple regression of the systems variables was reviewed especially in relation to support system of the family. Categories were created based on this analysis and were stated in paragraph form.

Mehl and Peterson's research (1985) also revealed that women who experienced birth problems were more likely to have problems with relatives, job dissatisfaction, problems with friends, or religious differences with their mate than those who did not need intervention at birth. Several case studies also outlined the role of family support and religion in the overall evaluation of birth risk. The clinician would theoretically have the freedom to adjust this social history score based on intuition as well as the descriptions provided which would only serve as a guide in scoring. One possible alternative to scoring might be a group score. A consensus score of a group of practitioners would probably be most valuable in this evaluation.

The Multidimensional Health Locus of Control (Appendix B) was scored numerically based on the questions relating to internal locus of control. The scoring was based on the results of Mehl & Peterson's (1985) research which showed women in the normal birth group to have a more internalized locus of control. Therefore, scoring for the condensed tool was divided so that those with an internal control scored a 5 while those with an external locus of control scored a 1.

The Life Change and Environmental Stress Evaluation is also numerical in nature. High scores of over 300 have been correlated with serious illness (Mehl & Peterson, 1985). A

score of greater than 300 was given a risk score of 1, while a score of less than 150 was given a 5. The score of 150 receiving a 5 was based on the fact that most individuals have a certain amount of change, and coping with this minimal level is well within the realm of a healthy individual. The 150 points between the minimal and the excessive stress scores was then divided evenly between the remaining three risk categories.

The obstetrical history form scoring (Appendix B) was based on the same factors considered in the social history scoring. Case histories from Mehl and Peterson's research were reviewed, and the results of the stepwise multiple regression in relationship to beliefs were considered. Based on these factors, a group of general categories were assembled. These should also only serve as a guide to the clinician in assigning a category based on obstetrical history.

Ratings for the birth counselor interview were determined based on the results of the stepwise multiple regression. The thirteen most-related variables were each scored from 1 to 5; since the first 4 variables actually accounted for 50% of the variance between groups (Mehl & Peterson, 1985), these were given one half of the mathematical score while the next nine variables were given the other

half. All thirteen variables accounted for 59% of the variance.

Total scoring for the HPSR is determined by placing each section's assigned risk score (1 to 5) within the actual scoring circle (Appendix B). The section's score is then multiplied by the number assigned to that section. The scores for nutrition, health locus of control, life stress, and family medical history are used as assigned. Each of these scores is, therefore, worth 5% on a scale of 100 points. Social history and obstetrical history are multiplied by a factor of two, making them each valued at 10%. The birth counselor interview is multiplied by four, making it worth 20%. Medical history is the largest single percentage with a multiplication factor of eight or an assigned worth of 40%. The total score is then added together and reconverted to the original one to five risk categories. The percentages given to each section were determined by review of case studies and assignment of section scores to these case studies from Mehl and Peterson's (1985) work. Although this method does not provide a truly accurate measure of percentile, it provided a numerical baseline for development of the tool until empirical testing can determine whether these percentile assignments are appropriate. After human testing has provided specific scores in each section, the percentiles can be redetermined in order to define the

most predictive relationship for that particular group of women. Then retesting could take place to validate if the revised scoring could accurately predict for another group of women.

Beck (1984) described the fourth step in criterion-referenced test development as assessment of content validity. Beck's fifth step was a careful revision of the test, and step number 6 involved administration. Thus the long-term goals of study for the HPSR are to continue to revise and finally to move to human testing.

The validity evaluation was sent to the panel of expert judges with only a brief explanation of the tool and what each judge should do to complete the forms. Beck (1982) described test bias as something that distorts the meaning of test results. The domain which the judges were asked to correlate questions with was that of birth outcome risk. The one through five scoring system for birth outcome was included, but no special instructions or research results relating any given section of the tool to birth risk were included. Since the perceptions of the judges based on their own clinical knowledge were being evaluated, the researcher felt that information as to the relevance of items or scoring might distort the results. A description of the intuitive nature of the tool was a potential area for the introduction of bias into the test results.

Data Transformation and Analysis

The data from the forms was recorded on grids marking each response and whether the response was from a nurse-midwife, nurse practitioner, or physician. All scores were recorded and the mean and mode for each section in relation to outcome, scoring, and usefulness were recorded (Beck, 1984). This was done for each of the three divisions of health care providers as well as for the panel as a whole. The comments and suggestions of each judge were also recorded and described in relation to similar comments made by two or more judges. The text will include relevant proportions in relationship to percentage of judges recording a given answer.

CHAPTER IV

RESULTS

The data collected from the forms completed by the panel of expert judges were analyzed using descriptive statistics. The ratings for each section and for the overall tool were recorded in table form. Each table outlined the varying responses of nurse midwives, nurse practitioners, and physicians, as well as ratings for the complete panel of judges. The results of the Likert Scale were recorded. There was also a need to include a column for "no reply." Some of the returned forms contained one or more sections that were not rated. In most cases the lack of rating appeared to be random in nature and the result of an inadvertent omission. One physician consistently did not rate the scoring section. His comment on the form indicated he did not have enough information to rate this section. For purposes of recording, these were placed under the category of "no reply" and were not considered when calculating the mean.

Since the Likert scale was consistent throughout the questionnaire, it was not included in each table. The panel of expert judges graded outcome on a scale of 1 (no relation to birth outcome) to 5 (very valid relationship to birth outcome). Scoring was graded on a scale from 1 (scoring has major flaws which make this section invalid) to 5 (scoring is very valid). The usefulness of each

section was scored on a scale of 1 (clinically unuseable) to 5 (clinically useable in most situations).

The answers were reviewed first by section and then in relation to the overall tool. Comments, suggestions, and additions were recorded along with the ratings in each section. The sections were reviewed in the order that they appeared on the Panel of Experts Form (Appendix C).

Medical History Form

Table 3 illustrates the total response to the Likert scale for the Medical History Form (Appendix B). Relationship to outcome obtained a mean rating of 4.5 based on the input of all 34 experts. Scoring received a mean rating of 4.3 and usefulness produced a mean of 4.5. All three areas showed the mode to be 5. These results were consistent with the standard nature of this part of the tool. The physicians rated this section somewhat higher than the nurses with mean ratings of 4.7 on outcome, 4.8 on scoring and 4.7 on usefulness. This is in contrast to the nurse practitioners who judged the usefulness of this section with a mean rating of 4.1. There was, however, consistency among the three groups, with all groups showing a mean of greater than four. The one exception was a mean of 3.7 on the scoring as judged by the nurse practitioners.

Twenty members of the panel commented on this section. Five of the comments related to a typographical error in

Table 3. Judges Ratings Medical History Form

	No Reply	1	Likert Scale				Mean	Mode	
			2	3	4	5			
CNMs	Outcome	0	0	0	3	4	10	4.4	5
	Scoring	0	0	0	2	6	9	4.4	5
	Usefulness	0	0	1	1	2	13	4.6	5
NPs	Outcome	0	0	0	1	4	4	4.3	4/5
	Scoring	0	1	0	1	5	2	3.7	4
	Usefulness	0	1	0	0	4	4	4.1	4/5
MDs	Outcome	0	0	0	1	0	7	4.7	5
	Scoring	1	0	0	0	1	6	4.8	5
	Usefulness	0	0	0	1	0	7	4.7	5
All Judges	Outcome	0	0	0	5	8	21	4.5	5
	Scoring	1	1	0	3	12	17	4.3	5
	Usefulness	0	1	1	2	6	24	4.5	5

question number 50. Two judges suggested deletion of the risk criteria based on an age of over 35 or 40. Four judges commented specifically on the family history of cancer and diabetes. Two thought cancer was weighed too heavily. One thought diabetes should be higher risk than cancer, and one felt that both should be weighed as less important. Suggestions for additions and changes included: 1) addition to the question on preterm infants a request for number of preterm births; 2) addition of a question about fear of needles; 3) addition of AIDS to the sexually transmitted disease question; and (4) addition of a question about which body parts usually are affected when under stress. One physician suggested deletion of the bodily injury question and was concerned that the "body changes" question was unclear. Two individuals commented on the fact that the score for risk was reversed when based on more traditional scoring. A score of 1 is high risk while 5 is low risk. These individuals found this a barrier to accepting the tool. Sample comments on this section included:

"Is the tool filled out or elicited? If filled out - are terms understandable?"

"Form is a reasonable guide to collecting medical data. Scoring somewhat open to interpretation."

"Needs to be alphabetized for quick reference."

"I think of medical history as objective information and the last two questions seem subjective."

"Difficult to have all information on scoring at the end."

"These categories seem not to offer an adequate number of variations - education, for example, is not included in all categories. An individual score on these separate factors which combined lead to a final score would be more accurate."

Nutrition History Form

The judges' content validity ratings of the Nutrition History Form (Appendix B) are illustrated in Table 4. The outcome mean rating was 4.4 for all judges. Scoring received a mean of 4.0 based on the total judges ratings, and usefulness was given a mean of 4.4. The certified nurse midwives rated outcome and usefulness somewhat higher on this section than the physicians, with the mean for CNMs on these items being 4.6 while physicians rated these with a mean of 4.1. The scoring of this section received a somewhat lower rating with CNMs having a mean rating of 3.4 and MDs having a mean rating of 4.3.

Twenty judges commented on the nutrition section. Many of these comments were suggestions for additions. Three judges suggested adding a question about street drugs. Two judges suggested the addition of a question about chewing tobacco and snuff. One suggested adding liquids to the twenty-four hour recall. One judge suggested adding a question on how many years the individual has smoked. Three judges wanted to add more specific questions about caffeine while one judge felt that caffeine was not a negative factor. Three of the physicians questioned whether cigarette smoking and alcohol consumption were nutrition information, while one physician commented that these areas were of particular importance. One nurse practitioner suggested adding questions about who prepares the food in the home and whether

Table 4. Judges Ratings Nutrition History Form

		No Reply	Likert Scale					Mean	Mode
			1	2	3	4	5		
CNMs	Outcome	0	0	0	0	6	11	4.6	5
	Scoring	0	0	2	0	5	9	4.0	5
	Usefulness	0	0	0	0	6	11	4.6	5
NPs	Outcome	0	0	1	2	1	5	4.1	5
	Scoring	0	0	2	2	4	1	3.4	4
	Usefulness	0	1	0	0	2	6	4.3	5
MDs	Outcome	0	0	0	3	1	4	4.1	5
	Scoring	1	0	1	1	0	5	4.3	5
	Usefulness	0	0	1	2	0	5	4.1	5
All Judges	Outcome	0	0	1	5	8	20	4.4	5
	Scoring	1	0	5	3	10	15	4.0	5
	Usefulness	0	1	1	2	8	22	4.4	5

the meals were "home-prepared" or "fast-food." One physician mentioned the need to assess food additive consumption. The general nature of the comments was in favor of making this section more detailed. Sample comments from this section included:

"Could be more detailed."

"Add an assessment on tea and specify cola drinks."

"Might want to assess basic knowledge of nutrition."

"How do you score when one part of the behavior fits one category and part another?"

"Excellent. Under scoring on smoking should have 10-20 cigarettes/day equals 2, not 3-10 per day equals 2."

"Important things to inquire about - tobacco, alcohol, drug use."

"We stress this aspect."

The mean ratings on this section were greater than 4 on all three scores. The mode for each aspect was 5. Addition of more detail might supply the information necessary to improve the scoring system rating.

Social History Form

Table 5 illustrates the tabulation of ratings on the social history scoring. The judges as a group judged outcome with a mean rating of 4.2, scoring with a mean of 3.5, and usefulness with a mean of 4.5. Nurse practitioners rated this particular section lower with all aspects rating a mean of less than 4. Certified nurse midwives rated outcome and usefulness higher, but reached only a mean of 3.9 on the scoring.

Eighteen judges commented on this section. Two specific questions were the focus of comments. Four judges

Table 5. Judges Ratings Social History Form

		No Reply	Likert Scale					Mean	Mode
		1	2	3	4	5			
CNMs	Outcome	1	0	0	4	1	11	4.4	5
	Scoring	1	3	1	2	1	9	3.9	5
	Usefulness	0	0	0	3	3	11	4.5	5
NPs	Outcome	0	0	0	3	4	2	3.9	4
	Scoring	0	1	0	4	4	0	3.2	3/4
	Usefulness	0	0	0	5	2	2	3.7	3
MDs	Outcome	0	0	0	3	2	3	4.0	3/5
	Scoring	1	0	2	2	1	2	3.4	2/3/5
	Usefulness	0	0	0	3	2	3	4	3/5
All Judges	Outcome	1	0	0	10	7	16	4.2	5
	Scoring	2	4	3	8	6	11	3.5	5
	Usefulness	0	0	0	11	7	16	4.5	5

suggested that the spiritual belief question be deleted.

Four judges commented that the question about personal growth activities was unclear. Suggestions for additions were questions concerning work environment, questions about how others in the household feel about the pregnancy, and specific questions about rape and spouse/family abuse. Four judges commented on the importance of a social support system and suggested that this should be given more importance in scoring. One judge suggested that the question about relationship with parents should be stated as "Describe your relationship . . ." Three judges commented on the scoring system and all three suggested some sort of check list scoring system. Sample comments included:

"Scoring is too laborious in form - information is fine but no one has time to read this each time - better to put in form like medical history - check list and count off checks."

"Scoring underestimates the importance of supportive and loving husband/partner."

"Might ask how others in household feel about pregnancy."

"The categories are hard to distinguish."

"To whom do you turn for support question is good."

"Wording could be more simple."

Since both outcome and usefulness rated a mean of greater than four based on the total judges' ratings, the scoring is the portion which the results indicate to be less acceptable to the judges with a mean rating of 3.8.

Obstetrical History Form

Table 6 illustrates the judges' ratings on the Obstetrical History Form (Appendix B). Outcome received a score

Table 6. Judges Ratings Obstetrical History Form

		No Reply	Likert Scale					Mean	Mode
			1	2	3	4	5		
CNMs	Outcome	0	0	0	2	3	12	4.6	5
	Scoring	0	2	2	3	3	7	3.6	5
	Usefulness	0	0	1	3	4	9	4.2	5
NPs	Outcome	0	0	0	1	4	4	3.9	4/5
	Scoring	0	0	2	0	2	5	4.1	5
	Usefulness	0	0	0	2	1	6	4.1	5
MDs	Outcome	0	0	0	1	2	5	4.5	5
	Scoring	1	0	0	3	2	2	3.9	3
	Usefulness	0	0	0	1	4	3	4.3	4
All Judges	Outcome	0	0	0	4	9	21	4.5	5
	Scoring	1	2	4	6	7	14	3.8	5
	Usefulness	0	0	1	6	9	18	4.3	5

relationship mean of 4.5 based on the answers of all 34 judges. The scoring system received a mean rating of 3.8. The usefulness of the tool received a mean rating of 4.3.

Nineteen judges commented on this section. Six of these suggestions were for an increase in detail in this section. Three suggested addition of more specific outcome questions related to previous pregnancies. One judge suggested the addition of a "meditation" form with "I want," "I don't want," "I fear," "I need" on the form with space to write after each. Four judges commented that inclusion of the partner in this form was important. Three judges suggested adding further instructions to the portion concerning mother's and sisters' birth experience. One judge suggested adding a specific question about the woman's own birth. Four judges found the scoring overlapping in nature and wanted clearer instruction. Sample comments included:

"Could be even more detailed. Include father's history and experience with pregnancy."

"Need more space and instructions under the mother-sister-other form."

"Description of birth should include specifically own birth."

"This is a good form."

"Scoring of the primigravida puts much emphasis on family history - wonder about the validity of this."

"Good emphasis on feelings about birth as well as actual experience. Exploring family history helpful, especially with primigravidas."

"Unsure of significance of mother, sister, others."

"Good tool - well thought out and organized."

"# 1 in scoring is unclear."

"Useful mainly in knowing more in order to be more supportive."

Both outcome and usefulness received mean ratings of greater than four. The mean rating on the scoring section was 3.8. This lower rating was also reflected in the comments provided by the judges.

Life-Change and Environmental Stress Evaluation

Table 7 illustrates the results of the panel's scores on the Life-Change and Environmental Stress Form. Outcome, scoring, and usefulness all received a mean rating of greater than 4, based on the judgement of all 34 experts. Only the nurse practitioners rated the form lower with a mean rating on outcome and usefulness of 3.9.

Only ten judges commented on this section and most of the comments were very brief. Three of the comments were a suggestion that a time frame should be added to the scale. The other comments were general in nature and commented on the acceptable nature of the tool and its use in assessing how to be supportive of the patient. One CNM commented that this was redundant in relation to other sections of the assessment. Sample comments in this section included:

"No period of time during which these changes occur is specified."

"Not often reviewed in a traditional setting; as a CNM I am very tuned in to recognizing stressors and providing counseling, usually with positive outcomes."

"Gives a good idea what is going on with client."

"Somewhat redundant of other tools."

"How long a time frame?"

Table 7. Judges Ratings Life Change Form

		No Reply	Likert Scale					Mean	Mode
			1	2	3	4	5		
CNMs	Outcome	0	0	0	2	7	8	4.4	5
	Scoring	0	1	1	3	4	8	3.8	5
	Usefulness	0	0	1	2	7	7	4.2	4/5
NPs	Outcome	0	0	0	3	4	2	3.9	4
	Scoring	0	0	1	0	5	3	4.1	4
	Usefulness	0	1	0	2	2	4	3.9	5
MDs	Outcome	0	0	1	1	1	5	4.3	5
	Scoring	1	0	0	1	2	4	4.4	5
	Usefulness	0	0	2	0	1	5	4.1	5
All Judges	Outcome	0	0	1	6	12	15	4.2	5
	Scoring	1	1	2	4	11	15	4.1	5
	Usefulness	0	1	3	4	10	16	4.1	5

Health Locus of Control Scale

Table 8 illustrates the scores for the Health Locus of Control Scale (Appendix B). The mean rating in all three categories was 3.8 based on the answers of all thirty-four judges. The CNMs also received a mean rating of 3.8 in all three categories. This was consistent with the mean rating of nurse practitioners which differed only in the usefulness category which received a mean rating of 3.0. The physicians ranked the scoring more valid with a mean rating of 4.2. However, physicians graded this section lower in its relation to outcome and usefulness, perhaps due to lack of familiarity with the concept. Although one physician commented that it was a very good tool, one requested a description of locus of control. This section also ranked highest on number of replies omitted. One physician failed to rate the entire section.

Ten judges made written comments about the health locus of control scale. The four nurse practitioners who commented were divided on their evaluation. One stated she did not understand locus of control. Two commented that the scoring was confusing, and one commented positively on the acceptability and usefulness of the form. Three nurse-midwives commented positively on this section, and one stated that it was interesting but not useful. A physician suggested reducing this section to 4 or 5 questions. The comments on this section were:

Table 8. Judges Ratings Health Locus of Control Scale

		No Reply	Likert Scale					Mean	Mode
			1	2	3	4	5		
CNMs	Outcome	0	0	2	3	5	7	3.8	5
	Scoring	0	1	2	3	5	6	3.8	5
	Usefulness	0	1	1	4	5	6	3.8	5
NPs	Outcome	0	0	2	1	3	3	3.8	3/4
	Scoring	0	1	1	1	2	4	3.8	5
	Usefulness	0	0	2	1	2	4	3.9	5
MDs	Outcome	1	0	3	0	1	3	3.6	2/5
	Scoring	2	0	0	2	1	3	4.2	5
	Usefulness	1	0	3	0	2	2	3.4	2
All Judges	Outcome	1	0	7	4	9	13	3.8	5
	Scoring	2	2	3	6	8	13	3.8	5
	Usefulness	1	1	6	5	9	12	3.8	5

"Great questions."
 "Don't really understand locus of control."
 "I have seen this form used and it is well accepted."
 "Very good - could it be reduced to 4 or 5 questions?"
 "Helps women to consider responsibility for her own
 well being."
 "Good idea of what's going on with client."
 "Don't understand scoring."
 "Scoring confusing."
 "Interesting but not useful clinically."
 "Could not find a description for this."

Based on the lower overall scores and the negative comments, this section appears to be less acceptable to the panel. Revision of the section or further explanation might make the locus of control a more meaningful concept to the clinicians.

Birth Counselor Interview

The scores on the Birth Counselor Interview (Appendix B) are summarized in Table 9. The outcome relationship mean rating on this section was 3.8 based on the ratings of all judges. The scoring of the section received a mean rating of 3.6, and a mean of 3.7 was obtained on the clinical usefulness. The nurse practitioners rated this section the lowest with mean rating from 3.1 on outcome to 3.3 on usefulness. The nurse-midwives rated this section higher, especially in relation to outcome with a mean of 4.2 on outcome and a mean of 3.9 on usefulness. Scoring was given the lowest mean rating with the nurse-midwives ranking scoring at 3.7. The mode for this section, however, was 5 for all three categories as rated by the nurse midwives, with over

Table 9. Judges Ratings Birth Counselor Interview

		No Reply	Likert Scale					Mean	Mode
			1	2	3	4	5		
CNMs	Outcome	0	0	2	2	4	9	4.2	5
	Scoring	0	0	4	3	4	6	3.7	5
	Usefulness	0	0	2	4	5	6	3.9	5
NPs	Outcome	0	1	1	3	4	0	3.1	4
	Scoring	0	0	2	3	4	0	3.2	4
	Usefulness	0	0	2	3	3	1	3.3	3/4
MDs	Outcome	0	0	0	4	2	2	3.8	3
	Scoring	1	0	0	3	3	1	3.7	3/4
	Usefulness	0	0	2	1	2	3	3.8	5
All Judges	Outcome	0	1	3	9	10	11	3.8	5
	Scoring	1	0	6	9	11	7	3.6	4
	Usefulness	0	0	6	8	10	10	3.7	4/5

half of the nurse midwives rating relation to outcome as a 5. The physicians' mean rating fell between the nurse practitioners' rating and the nurse midwives' rating with means of 3.7 for scoring and 3.8 for usefulness.

Eighteen judges commented on this section. Three comments were made in relation to the necessary skill level required to conduct the interview. Three comments were made in regard to the appropriate and interesting selection of questions. One nurse practitioner felt that twelve questions was inadequate, while one nurse midwife felt that the section was already too long. A question was raised regarding the order of the questions in relation to the scoring variables.

Several specific suggestions were made in relation to specific variables or questions. A physician suggested a change in the sexuality question to read: "How satisfactory is your love life?" A nurse practitioner suggested changing the word "husband" to "partner" in question seven. This is very appropriate for consistency within the tool. A nurse practitioner also suggested entitling variable number six merely "self-esteem as a woman" rather than "high self-esteem." Sample comments on this section included:

"Good, but numbers don't correlate with questions on preceding page."

"Can help clear up some relationship problems before birth - interesting choice of questions."

"Would be hard to judge the emotional and psychological

adjustment on just 12 questions asked."

"Somewhat redundant with social history."

"Good information - scoring should be done by the person attending delivery."

"This interview would take a long time and frequently CNM's have many patients to see - not enough time for tool."

"Because of the subjective questions and certain skill to obtain the necessary information - are there qualifications to become an interviewer such as counselor/nurse/female versus male (intuition). Good questions."

"Birth counselor interview scoring confusing."

Although the mean ratings on each category were less than 4 on this section, several interesting rating trends were present. Nurse practitioners rated this section lower than either nurse-midwives or physicians. The nurse midwives also rated all three categories higher than either other group and the mode for each category was 5 for the nurse-midwives. Since these particular items were specifically correlated to outcome (Mehl & Peterson, 1985), this section seems a necessary part of holistic assessment. Since the research is so recent, there is a possibility that clinicians were unfamiliar with its relevance.

Overall Tool

Table 10 illustrates the judges ratings on the overall tool. The results of the entire panel of judges shows a mean of 4.4 on relation to outcome, a mean of 4.0 on scoring and a mean of 4.4 on usefulness. The mode for all three categories was 5 with nineteen out of thirty-four rating outcome relationship as a 5 and 18 out of 34 rating usefulness

Table 10. Judges Scoring Overall Tool

		No Reply	Likert Scale					Mean	Mode
			1	2	3	4	5		
CNMs	Outcome	1	0	0	2	3	11	4.6	5
	Scoring	1	0	0	4	3	9	4.3	5
	Usefulness	1	0	0	3	3	10	4.4	5
NPs	Outcome	0	0	0	2	4	3	4.1	4
	Scoring	0	0	1	3	4	1	3.5	4
	Usefulness	0	0	0	1	5	3	4.2	4
MDs	Outcome	0	0	0	1	2	5	4.5	5
	Scoring	2	0	0	2	2	2	4.0	3/4/5
	Usefulness	0	0	0	1	2	5	4.5	5

Table 10 (continued)

All Judges	Outcome	1	0	0	5	9	19	4.4	5
	Scoring	3	0	1	9	9	12	4.0	5
	Usefulness	1	0	0	5	10	18	4.4	5

as a 5. Twelve out of thirty-four rated the scoring validity as a 5. The responses of physicians and nurse midwives were very similar in mean rating. Nurse midwives ranked the highest in mean with a 4.6 in outcome relationship. The nurse practitioners rated the overall tool somewhat lower with a mean of 4.1 on outcome and 4.2 on usefulness. The nurse practitioner mean of 3.5 on scoring was the lowest and fell .5 below the mean rating of all judges.

Twenty-one judges commented on the overall tool. These comments were categorized and identified in relation to similar content. Four judges commented that they were familiar with Mehl and Peterson's work. One judge stated that she had attempted but failed in using their tool in practice. Four individuals commented that they did not like the extensive use of numbers for scoring. One judge suggested the use of more numerical and checklist approach. Six judges felt that the tool should be shortened even further. Two of the four judges who commented on the scoring felt it was confusing. One judge felt that a description of the scoring in the beginning would have been helpful. One judge commented on the reversed order of the risk categories with a score of one being high risk and five being low risk.

There were also several suggestions in regard to changing the weight of sections in the overall score. Two judges suggested increasing the weight of the nutrition section. Two judges wanted to change the weight of the medical history,

one wishing to increase it and the other wishing to decrease it. One judge wished to increase the weight of the social history, another the birth counselor interview, and a third the obstetrical history. Six judges commented on the well-organized, innovative nature of the tool. Comments on the overall tool included:

"Medical history should be weighted somewhat less. Nutrition and beliefs should be rated more heavily."

"This could be a workable tool with changes in two sections - social history form and birth counselor interview. Would need to spend several hours with patient to complete form."

"Scoring confusing."

"Form is laborious and needs to be shortened. There is much useful information but needs to be shortened - condensed. Multi-complicated forms fill me with fear that numbers will categorize and humans will be forgotten."

"Very innovative approach to a difficult problem."

"Would have been helpful to explore in more detail, in the beginning the overall scoring system - found this confusing until the end. Suggest using the tool not all at once but to introduce gradually. Overall it's a great tool."

"Good idea. Don't like the idea of a total score. Individual tools helpful."

"Scoring system is reversed."

"I don't know how you arrived at multiplication subscore. Medical and obstetric history - what is the difference? This is a most impressive research tool."

"Based on what I see here, scoring is the weakest part. The Health Locus of Control and Life Change tools have been validated already in a variety of ways, but I am concerned about the groupings of criteria in the categories for the other area unless you have some validation of these from Mehl and Peterson's work."

"Static nature. I believe most important factor may be how system responds to intervention during the pregnancy. Good beginning."

"Should be pared down even further for clinic."

"It could be very useful. A nice compilation. Needs clinical validation."

"How many MDs or NPs would be willing to take the time to complete this? Agree that this information would be valuable to a practice."

The overall tool received a mean rating of greater than 4 in all three categories and the mode for all three categories was 5. Fifty-seven per cent of the ratings in relationship to outcome were a 5. Thirty-nine per cent of the scores in relation to scoring validity were 5. Fifty-five per cent of the ratings in evaluating usefulness were rated 5. The preponderance of comments by the panel of judges related to shortening the tool further and to revising the scoring system.

CHAPTER V

CONCLUSIONS

Summary of Findings

This study revealed that a panel of expert judges rated the HPSR 4.4 on a 5-point scale in validity to outcome, the scoring validity to be 4.0 on a 5-point scale, and the usefulness to be 4.4 on a 5-point scale. The highest mean ratings on a specific section were obtained on the Medical History Form (Appendix B). The lowest mean ratings on any section were obtained by the Health Locus of Control Form (Appendix B) and the Birth Counselor Interview (Appendix B). Although the Health Locus of Control Scale received consistently lower ratings from all three groups of clinicians, the Birth Counselor Interview received higher ratings from nurse midwives and lower ratings from nurse practitioners. The social history form received a higher mean rating on outcome and usefulness than on scoring which received a mean of 3.5. The Nutrition History Form (Appendix B) rated a mean of greater than 4 on all three categories. The Obstetrical History Form (Appendix B) rated higher on outcome and usefulness than on scoring. The Life-Change and Environmental Stress Form (Appendix B) received consistent ratings of greater than 4 in all three categories.

The judges' comments revealed a pattern of suggestions that would shorten the tool even further. The judges felt

that certain aspects of the scoring were unclear and further explanations of the scoring would have been beneficial.

The results of this study illustrated the desire and interest by these specific health care providers to attempt a more holistic look at risk assessment in pregnancy. The lower overall evaluation of the scoring was reflective of two differing perspectives. Certain judges desired a more regimented or numerical system while others felt the numbers were restrictive.

One interesting aspect was the similarity between the mean ratings of the nurse-midwives and the physicians. The similarity existed not only on the overall tool, but on the sections relating to the Birth Counselor Interview (Appendix B), the Social History Form (Appendix B), and the Obstetrical History Form (Appendix B). This may have been the result of the self-selected nature of the respondents. The physicians who returned the study form may be a specific group who view items differently from other physicians. The results may have also been a result of the fact that nurse-practitioners are limited in their care to the prenatal and postpartum period while physicians and nurse midwives also attend deliveries.

Limitations of Study

One of the limitations of the study was generalizability. Because the panel of judges were selected by a

network approach, they are not necessarily representative of all health care providers. They may, however, be representative of health care providers who would choose to use a holistic assessment tool. The small number involved also made the results less generalizable.

Comments from the judges revealed that many felt a further explanation of the scoring system was needed. Such an explanation may have influenced the ratings given by the judges and confusion in this regard might present an intervening variable to correct rating.

The use of a more detailed description of the purpose and conceptual framework of the tool might have assisted the judges in understanding the domain which the tool was attempting to measure. Another influencing factor may have been the order in which the forms were sent to the judges. It might have been more appropriate to put the scoring section of the tool and the categories of risk subsequent to the credentials form. This might have helped the judges understand how each section of the tool would be applied to the ultimate physical birth risk score.

An obvious limitation of the tool scoring system is the lack of empirical evidence to substantiate its predictive value. This can only be obtained through human testing and should then be adjusted in order to obtain the best prediction. The limited data available on holistic risk

assessment in pregnancy made truly accurate and verifiable scoring of the tool a challenging problem which can only be solved through further research.

Implications for Further Research

The results of this study suggest many areas for possible revision of the tool. Since the Mehl and Peterson Assessment (1985) had not been submitted to a panel of judges for evaluating content validity, wording of certain questions might be now changed based on this evaluation of the HPSR.

Subsequent to change of the HPSR based on these results, a pilot project could test this tool's usability in a clinical setting. After pilot testing a prospective human study should be conducted to ascertain if the use of this tool could accurately predict pregnancy outcome and if different weighting of sections might prove more predictive.

Implications for Nursing Practice

The study revealed the desire and interest among this group of physicians and nurses in holistic assessment as a tool for risk prediction in pregnancy. Accurate risk prediction could assist nurses in identifying those clients who need specialized care in order to intervene and improve birth outcome. Holistic assessment can help to meet the nurses' need to assess the whole person. (Bellack & Bamford,

1984). Through a view of the interacting aspects of a woman's life, the nurse can move out of the realm of biomedicine and into a true nursing perspective.

A systematic holistic assessment can be used for research purposes in an effort to verify nursing theory. The HPSR is only one step in the direction of development of holistic tools which are both accurate in prediction and acceptable to clinicians.

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APPENDICES

APPENDIX A

MEHL AND PETERSON

HOLISTIC PRENATAL ASSESSMENT

Client History Form

I. Past Medical History

List any significant infections (viral, bacterial, other):

List any body injuries:

List surgeries (date, reason, place):

List hospitalizations (date, reason, place):

List any X-rays (date, reason, place, type):

List your past and current diagnosed medical illnesses:

List the childhood diseases you have had (German measles, mumps, chicken pox, rheumatic fever, etc.)

Have you noticed any major body changes in the last two years?

List current medications you are taking:

Have you ever taken or used:

Date last used:

Pep pills, Speed:

Barbiturates (downers):

Benzedrine (bennies):

LSD:

Marijuana or hashish:

Cocaine:

Heroin:

Any other drug:

Allergies:

Do you have any known allergies?

What symptoms do you have?

Have you ever had an unusual reaction to a drug?

What drugs?

What reactions?

What specific problems do you have that you would like us to help you with?

What do you think are the best ways that we could help you with these problems?

Source: reprinted with permission from Mehl, L.E. & Peterson, G. H. (1985). Pregnancy as Healing (Vol. 2). Berkeley, California: Mindbody Press.

Review of Systems

Please enter a number corresponding to the degree of severity of any of the following symptoms. The ones to choose from are:

- Blank or 0 = Not a problem
- 1 = Minimal problem
- 2 = Mild problem
- 3 = Moderate problem
- 4 = Moderately severe problem
- 5 = Severe problem
- 6 = Life-threatening problem

Describe them here:

Staff comments:

- ☐ EYE PROBLEMS, including:
 - ☐ Double vision
 - ☐ Poor vision
 - ☐ Cataracts
 - ☐ Glaucoma
 - ☐ Burning, watery eyes
 - ☐ Blurred vision
- ☐ EAR PROBLEMS, including:
 - ☐ Drainage or discharge
 - ☐ Poor hearing
 - ☐ Perforated drum
 - ☐ Ringing
- ☐ MOUTH, NOSE, AND THROAT PROBLEMS, including:
 - ☐ Gum problems
 - ☐ Tongue problems
 - ☐ Teeth problems
 - ☐ Nose bleeds
 - ☐ Painful swallowing
 - ☐ Persistent hoarseness
 - ☐ Persistent sore throats
 - ☐ Cold sores (herpes)
 - ☐ Congestion
 - ☐ Frequent colds
- ☐ BLOOD PROBLEMS, including:
 - ☐ Anemia
 - ☐ Reaction to transfusions
 - ☐ Bleeding problems
 - ☐ Easy bruising
- ☐ ANY KNOWN CANCERS
- ☐ THYROID PROBLEMS

- ___ ENDOCRINE (HORMONE) PROBLEMS
- ___ SKIN PROBLEMS, including:
 - ___ Dry skin
 - ___ Acne
 - ___ Boils
 - ___ Moles
 - ___ Rashes
 - ___ Itching
- ___ BREATHING PROBLEMS, including:
 - ___ Positive TB test
 - ___ Shortness of breath (at rest)
 - ___ Shortness of breath with activity
 - ___ Coughing
 - ___ Wheezing
 - ___ Coughing up blood
 - ___ Chest pain with activity
 - ___ Awakening at night with chest pain
- ___ HEART PROBLEMS, including:
 - ___ Abnormal cardiogram
 - ___ Have to sit up to breathe easily
 - ___ Awakening at night short of breath
 - ___ Palpitations or irregular beats
 - ___ Cold hands or feet
 - ___ Leg swelling
- ___ DIGESTIVE (GASTROINTESTINAL) SYMPTOMS, including:
 - ___ Abdominal discomfort
 - ___ Indigestion
 - ___ "Gas"
 - ___ Nausea
 - ___ Vomiting
 - ___ Diarrhea
 - ___ Constipation
 - ___ Pain
 - ___ Cramping
 - ___ Hemorrhoids
 - ___ Blood in the stool
 - ___ Use laxatives
 - ___ Vomiting blood
- ___ URINARY PROBLEMS, including:
 - ___ Kidney problems
 - ___ Bladder problems
 - ___ Frequent urination
 - ___ Burning with urination

- ___ Blood in the urine
- ___ Urinating at night
- ___ Difficulty starting to urinate
- ___ Unable to empty bladder
- ___ MALE GENITAL PROBLEMS, including:
- ___ Fertility problems
- ___ Difficulty getting an erection
- ___ Premature ejaculation
- ___ Inability to ejaculate
- ___ Discharge
- ___ Sores or herpes
- ___ Swollen testicles
- ___ Hernias
- ___ Prostate trouble
- ___ Pain with ejaculation
- ___ FEMALE GENITAL PROBLEMS, including:
- ___ Age when periods started: _____
- ___ Time from first day of bleeding
to next period _____
- ___ Days of flow:
- ___ Amount of flow:
- ___ Discomfort
- ___ Age when periods stopped: _____
- ___ Current or latest birth control
method: _____
- ___ Birth control pills
- ___ DES exposure or mother who took DES
- ___ Morning after pill
- ___ Breast masses
- ___ Breast tenderness
- ___ Cysts on ovaries
- ___ Vaginal infections
- ___ Unusual Pap smears
- ___ Pelvic infections
- ___ Gonorrhea
- ___ Syphilis
- ___ Sores on labia or herpes
- ___ Number of pregnancies _____
- ___ Number of births _____
- ___ Number of abortions _____
- ___ Number of miscarriages _____
- ___ Excessive bleeding
- ___ Bleeding between periods
- ___ Difficulty having an orgasm

- ___ Trouble getting pregnant
- ___ Lack of sexual desire
- ___ JOINT, MUSCLE OR BONE PROBLEMS,
 including:
 - ___ Painful joints
 - ___ Swollen joints
 - ___ Muscle cramps
 - ___ Back pain
 - ___ Stiff joints
 - ___ Morning stiffness
 - ___ Deformities
- ___ NEUROLOGICAL (HEAD) PROBLEMS,
 including:
 - ___ Difficulty walking
 - ___ Loss of balance
 - ___ Lightheadedness
 - ___ Slurred speech
 - ___ Dizziness
 - ___ Confusion
 - ___ Seizures
 - ___ Fainting
- ___ Headaches that are a problem
 - Frequency:
 - Location:
 - Severity:
 - What relieves it:
 - What seems to set it off:
- ___ METABOLIC PROBLEMS, including:
 - ___ Weight loss or gain
 - ___ Night sweats
 - ___ Fever
 - ___ Chills
 - ___ Tiredness
 - ___ Lethargy
 - ___ Poor appetite

II. Nutrition History

A. Dietary restrictions:

Current vitamins or supplements:

How much hard liquor do you drink daily? _____

Weekly? _____

How much wine do you drink daily? _____

Weekly? _____

How many packs of cigarettes do you smoke daily? _____

Do you smoke cigars? _____ Pipes? _____

Do you snack between meals?

What do you eat when you snack?

How much coffee do you drink daily?

How many soft drinks do you drink daily?

How much beer do you drink daily? _____

Weekly? _____

Do you overeat or undereat when:

tense _____ nervous _____ depressed _____ unhappy _____
worried _____

B. 24 Hour Diet Recall

Date: _____

Food

Amount

III. Family Medical History

Mother's side (include all children, siblings, parents, their siblings and grandparents):

Disease	Family member	Other information
Diabetes		
High Blood pressure		
Heart disease		
Cancer		
Congenital birth defects or illnesses		
Thyroid problems		
Overweight		
Epilepsy		
Kidney problems		
Stroke		
Gout		
Allergies		
Emotional problems		
Gall bladder problems		
Tuberculosis		
Migraine headaches		
Other:		

Father's side: (include all children, siblings, parents, their siblings and grandparents):

Disease	Family member	Other information
Diabetes		
High Blood pressure		
Heart disease		
Cancer		
Congenital birth defects or illnesses		
Thyroid problems		
Overweight		
Epilepsy		
Kidney problems		
Stroke		
Gout		
Allergies		
Emotional problems		
Gall bladder problems		

Tuberculosis
Migraine headaches
Other:

IV. Social History Form

Marital status: _____
How long? _____
Years of education _____ Highest degree _____
Religious preference:
Occupation(s):
Place of birth:
Who else lives in your house?
What are your spiritual beliefs and how do they affect your life?
What type of physical activity are you getting?
How much exercise do you get per week?
What do you think makes people healthy and what makes them sick?
What are your special interests?
List the places you have received health care in the past five years?

Emotions

Please describe your current emotional status (How are you feeling?)
To whom do you turn for support?
How was your relationship with your parents when you were growing up?
Have you ever had psychotherapy? Taken psychotherapeutic drugs? What kinds? How long? Did it help?
Are you involved in personal growth activities?

Supplemental Obstetrical History

Prior the the Birth Counselor Interview, parents answered questions about the birth experiences of their mother, sisters, and other significant people in their lives. This pulled for past acculturation.

	Mother	Sisters	Others
Feelings about pregnancy and birth.			
Number of pregnancies.			
Number of live births.			
Any complications or unusual circumstances.			
Breast or bottle feeding?			
Place of birth:			
Hospital?			
Home?			
Other?			
Any medications?			

Describe your past pregnancy experiences. Include pregnancies, births, abortions, and miscarriages:

Year	Experience	Comments
------	------------	----------

What are your concerns or worries about this pregnancy and the experience of childbearing?

The following form was just for the woman's partner:

Partner's Form

What memories do you have of your mother's or other relatives' experiences of birth?

If you have had other children, what was your experience of their birth(s)? With parenting?

Do you have any particular concerns about pregnancy, birth, and/or parenting?

At this time what are your plans for this birth? Why?

How do you want to be involved in the birth?

How can we help you to accomplish this?

LIFE CHANGE AND ENVIRONMENTAL STRESS EVALUATION
 Berkeley Family Health Center

After studying the recent histories of people with medical problems, Holmes and Holmes (1970) have concluded that any number of illnesses and not just the commonly recognized psychophysiological disorders, can be precipitated by the stress accompanying changes in one's life. To measure the impact of different kinds of changes, Holmes and Rahe (1967) have developed the Social Readjustment Rating Scale, which rates each kind of potentially stressful event in terms of "life change units" (LCUs). Please circle the number in the LCU column if this has happened to you.

LIFE EVENT	LCUs
Death of spouse	100
Divorce	73
Marital separation	65
Jail term	63
Death of a close family member	63
Personal injury or illness	53
Marriage	50
Fired at work	47
Marital reconciliation	45
Retirement	45
Change in health of family member	44
Pregnancy	40
Sex difficulties	38
Gain of new family member	38
Business readjustment	38
Change in financial state	38
Death of a close friend	37
Change to different line of work	36
Change in number of arguments with spouse	35
Mortgage over \$10,000	31
Foreclosure of mortgage or loan	30
Changes in responsibilities at work	29
Son or daughter leaving home	29
Trouble with in-laws	29
Outstanding personal achievement	28
Wife begins or stops work	28
Begin or end school	26
Change in living conditions	25
Revision of personal habits	24
Trouble with boss	23
Change in work hours or conditions	20
Change in residence	20
Change in schools	20
Change in recreation	19
Change in church activities	19
Change in social activities	18
Mortgage or loan less than \$10,000	17
Change in sleeping habits	16
Change in number of family get-togethers	15
Change in eating habits	15
Vacation	13
Christmas	12
Minor violations of the law	11
TOTAL LCUs	

Source: reprinted with permission from Mehl, L.E. & Peterson, G. H. (1979). The Berkeley Health Center: A existential approach to holistic health care. In D. Stewart & L. Stewart (eds.), Compulsory hospitalization: Freedom of choice in childbirth (Vol. 2). Marble Hill, Missouri: Napsac Reproductions.

SCORING TEST FOR GAUGING STRESS AND TENSION LEVELS*			
Berkeley Family Health Center			
	Often	A few times a week	Rarely
1. I feel tense, anxious or irritable.	2	1	0
2. People at work/home arouse my tension.	2	1	0
3. I have tension or migraine headaches, or pain in the neck or shoulders, or insomnia.	2	1	0
4. I eat/drink/smoke in response to tension.	2	1	0
5. I feel depressed/frustrated at home/work.	2	1	0
6. I can't turn off my thoughts at night or on weekends long enough to feel relaxed or refreshed the next day.	2	1	0
7. I take tranquilizers (or other drugs) to relax.	2	1	0
8. I have a difficult time finding enough time to relax.	2	1	0
9. Once I find the time, it is hard for me to relax.	2	1	0
10. My workday is made up of many deadlines.		yes 1	no 0
11. I find it difficult to concentrate on what I'm doing because of worrying about other things.	2	1	0
12. In conversation, I find myself finishing what the other person is about to say or interrupting.	2	1	0
13. Annoyances tend to build up during the day and become noticeable	2	1	0
14. I find it difficult to sleep.	2	1	0
15. I clench my hands or they perspire during ordinary conversation.	2	1	0
TOTAL SCORE			
ZONE	SCORE	TENSION LEVEL	
A	14-18	Considerably above average	
B	10-13	Above average	
C	6-9	Average	
D	3-5	Below average	
E	0-2	Considerably below average	
All individuals but those in Zone E have something to learn about stress management.			

*NOTE: This test was adapted in part from the simplified self-scoring test for gauging stress and tension levels of Carl Thorenson of Stanford University

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HOW WELL CAN YOU RELAX? Berkeley Family Health Center			
The following will help us understand if the stress you are under (see previous sheet) can be handled effectively with tools you already have.			
	Always	Sometimes	Seldom
1. Are you able to shut out your worries when you go to bed at night?			
2. Are you able to take a nap during the day and awaken refreshed?			
3. Is your clothing well fitting and comfortable?			
4. Are you able to concentrate on one problem at a time?			
5. Do you plan your day's activities?			
6. Do you find time to relax and stretch during the day?			
7. Do you take time to relieve held positions required in your work to prevent a feeling of tenseness?			
8. When you feel yourself becoming tense because of sustained positions do you know how to relax by doing simple movements?			
9. Do you check yourself frequently for habitual tension habits, such as scowling, clenched fists, tight jaws, hunched shoulders, or pursed lips?			
10. Do you relax these evidences of tension at will when you find them?			
11. Do you find it easy to relax so that you sleep easily and deeply?			
12. Do you know how to release tensions through simple movements so that you can sleep well?			
13. Do you play with such interest that you become completely absorbed in what you are doing?			
14. Do you plan your life to have a change of people, scenery, and thoughts?			
Total Number Marked Always ☐ Sometimes ☐ Seldom ☐ Rating Always - 3 points Score: 33-42 points - high ability to relax Sometimes - 2 points 24-32 points - average ability to relax Seldom - 1 point 15-23 points - low ability to relax			

*NOTE: Sections of the above were adapted from Janet Wessel. Movement Fundamentals. New York: Prentice-Hall, Inc., 1957, page 55.

Source: reprinted with permission from Mehl, L.E. & Peterson, G. H. (1979). The Berkeley Health Center: A existential approach to holistic health care. In D. Stewart & L. Stewart (eds.), Compulsory hospitalization: Freedom of choice in childbirth (Vol. 2). Marble Hill, Missouri: Napsac Reproductions.

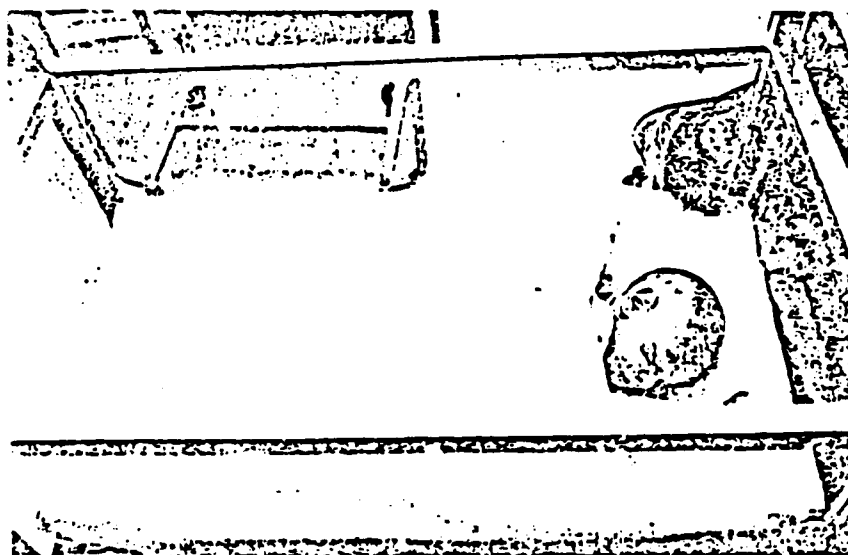
Prenatal TAT



Please look at the picture carefully, then write a story on the back about what the people in the picture are thinking and feeling, what they are doing, what events have led up to this and what will happen next. How will the story end?

Source: reprinted with permission from Mehl, L.E. & Peterson, G. H. (1985). Pregnancy as Healing (Vol. 2). Berkeley, California: Mindbody Press.













PSYCHOLOGICAL ASPECT VARIABLES

Variable Names and Definitions

To better understand our approach — both clinical and research — definitions of the categories used for assessment are important. We have endeavored to humanize our categories and assessments, eliminating the judgmental attitudes frequently found in research. We will have inevitably fallen short in some areas. The reader can rest assured that we are continuing to address the need to elevate research methodology and language to a level inconsonant with blame and judgmentality. Such an approach continues to pursue a goal we learned during college in the late 1960s, of bringing "Research to the People."

Disconfirmation of emotion (or affect) was rated as present (1) or absent (0) if such a coping style seemed to be a major response of the woman to stress. *Somatic expression of stress* was rated as present or absent as a coping style during stress — meaning, under stress, does the woman tend to experience physical symptoms?

Non-awareness of emotion was rated as present or absent as a major coping style during stress or crisis, or as a habitual way of interacting. Disconfirmation of affect differed from non-awareness in being a more intellectual process of experiencing a feeling and then convincing oneself or being convinced it was not valid or did not pertain. During a state of non-awareness, the feeling has never been recognized by consciousness. *Externalization of affect* was rated as present or absent if the woman tended to attribute her feelings to others in her environment as a coping strategy during stress or crisis.

Left brain over-reliance was defined as a pattern of excessive reliance upon logic and analysis during stress without utilizing helpful right brain capabilities of intuition and/or imagination. In such over-reliance, emotion was not being disconfirmed, refuted, or ignored by consciousness, but shunted toward logical left brain processes. In this coping style, feelings were represented more analytically with problems being solved on that level (not necessarily successfully). A rating of (1) indicated that *left brain over-utilization* was a predominant coping style, and a (0) indicated it was not. An *oppositional response pattern* was defined as a pattern of responding to stress or crisis through behaving in a manner opposite (naively speaking) to logically expected behavior dictated

Source: reprinted with permission from Mehl, L.E. & Peterson, G. H. (1985). Pregnancy as Healing (Vol. 2). Berkeley, California: Mindbody Press.

by the stress. In other words, a paradoxical response would occur. A woman terrified of birth might cope with that fear in such an oppositional response pattern by reading every birth book ever published. A woman scared of snakes might express a desire to study herpetology. Another woman might disagree with whatever her midwife said. This response set was rated as present (1) or absent (0). *Isolation* was defined as a behavioral pattern of tending to withdraw from social contact during stress or under other conditions. It was rated as present or absent. An *action orientation* was rated as present when the person showed patterns of acting impulsively without considering the consequences of the action. An extra-marital affair might occur to "get back" at a spouse. Without such an impulsive, action-oriented behavioral pattern, the partner might have confronted the spouse with his or her thoughts and feelings, hurts and resentments.

Hemispheric dominance was assessed on a three point scale:

- (1) Largely right brain functioning to solve problems or cope with stress.
- (2) Bicameral functioning.
- (3) Largely left brain, logic and reasoning to solve problems.

Faced with the stress of discovering an unplanned pregnancy, does the woman react entirely emotionally without attempting to analyze her situation, does she intellectually analyze the situation without regard to her emotions or does she respond with both feelings and intellect?

The *stress reactive level* refers to the usual mode and speed of reaction to stress used by the woman in day-to-day life.

- A. *Philosophical* meant that the woman maintained a philosophical or reflective perspective, not taking day-to-day stresses overly seriously. Many of these women described themselves as having a "cosmic perspective" in which day-to-day stresses were not so important when related to the whole or the "larger picture." These women would tend to agree with such perspectives as those of Ken Keyes¹²² or Don Juan.¹⁰⁹
- B. *Ruminative* meant that the woman thought over and over upon the stresses and events of the day, often magnifying their seriousness.
- C. *"Easy going"* meant that the woman tended to "go with the flow" and not particularly ruminate or contemplate about her life or the events of the day, but to accept what happened.

- D. *Practical* meant that the woman showed "common sense" in her thinking and tended to be a good, practical problem-solver. She may or may not have difficulty moving toward a contemplative stance.
- E. *Critical* meant that the woman tended to criticize others in the daily events of her life. Such women were often described by others as obnoxious, irritating or bothersome. This thinking pattern did not represent problem-solving, but a kind of victim-like complaining aimed at directing others to find personal answers.

Hostility referred to how much hostility the woman showed in her everyday interaction with clinic staff and others. It was measured on a five point scale from very much hostility (1), to moderate hostility (3), to very little hostility (5). A very hostile person might angrily, verbally attack the medical practitioner on the first appointment without seeming provocation.

Impulsive meant doing sudden and spontaneous behaviors without premeditation. *Unaware of emotions* was rated as present when clear consensus from observing and hearing about the woman's behavior indicated that the woman was experiencing emotions (through facial expressions or bodily language¹ of which she would deny conscious awareness. *Tender and affectionate* referred to interpersonal behavior.

Adapted meant that the woman knew her social role and conformed well to it. A highly adapted woman in an upper-middle class suburb would engage in as stereotypically predictable behavior as would an adapted Hari-Krishna devotee. The essential ingredient in defining a woman as highly adapted would be a seeming exact conformance to the dictates of a particular cultural group without the presence of individual variations unique to her. *Anxiety* referred to expressed anxiety, either behaviorally or verbally. The above variables were rated on a five point scale with a woman rated as (1) if she predominantly exhibited the behavior associated with the variable, to (3) if her behavior was between the extremes, to (5) if she rarely displayed the variable in her interpersonal interactions.

Creative fantasy life was a bimodal scale referring to constricted fantasy production and creativity on the one hand (rated "1") to excessive fantasy living on the other (rated "5"). For purposes of analysis, constricted or no fantasy (1) was combined with excessive fantasy living (5) and spontaneous but not especially creative (2) was combined with tendency toward fantasy living (4), with rating (3) (spontaneous, creative) retained as the high point

variable. In other analyses, we plan to separate these factors to determine if there is a difference between those who do not fantasize and those who live in fantasy. The initial reason for this was to try to compare "normal" versus "dysfunctional" living patterns with respect to fantasy and creativity.

Concern for appearance was a bimodal variable handled similarly to creative fantasy life with similar concerns and reservations. Inappropriate neglect for appearance (1) was combined with excessive preoccupation with physical care and appearance (5), as were the (2) and (4) ratings, leaving the middle rating of (3), appropriate concern with physical care and appearance, as the high point. Judgment was required by the rater. "Appropriate" was defined as clean, concerned about personal appearance in a way in which an inordinate amount of psychic energy was not consumed by grooming. Different cultural styles of dressing were taken into account.

Gratification in female sexuality was by report of the woman during the birth counselor interview and ranged from no enjoyment or actual distaste (1), to moderate enjoyment (3), to marked enjoyment (5). *Responsiveness to mate* referred to how the woman responded to the expressed needs of her partner. She could have been ungiving, meaning never attempting to meet his needs or actually working to do the opposite of his stated needs (1), to moderately giving (3) (referring to a give-and take relationship in which some needs were met and others not), to fully giving (5) (meaning that the woman attempted to meet every need of her partner). *Responsiveness to others* was rated similarly, with reference to friends and others with whom the woman came in contact. It would be conceivable for a woman to be rated as ungiving to her partner but highly generous and very giving to others or *vice versa*.

Flexibility referred to how easily the woman changed her plans or defined goals and needs when required. A highly inflexible person (1) would maintain the same plans and goals regardless of the work of maintaining those goals, as continuing to work at pre-pregnancy levels despite conflicting physical needs for rest during pregnancy. One woman editor continued to work twelve to fourteen hour days despite worsening health status related by her physician to lack of rest and overwork. She was not flexible in redefining her plans and goals for herself during pregnancy. A rating of (3) meant that after an initial period of trying to stay the same, the person would accommodate and make needed changes to be more consonant with the current situation. A rating of (5) indicated an ability to "roll with the punches" and

maintain high levels of flexibility with easy accommodation to change. *Sense of humor* was rated from little or none (1), to moderately good (3), to keen (5). A woman with a keen sense of humor might have everyone laughing at least once during the prenatal interview and would be able to laugh at herself readily and without loss of self-esteem. A woman with a moderately good sense of humor might not laugh at herself so readily but would exhibit some humor during the interview. A woman with no sense of humor might be "deadpan" throughout the interview with a heightened level of seriousness bordering on uncomfortability.

Overt dependency behavior referred to observed behavior in relationship in depending upon partner or others. The "1" rating referred to a clinging to dependency status — meaning playing the role of little girl and working to put the partner or others into the role of parent/caretaker. The middle-rating of "3" referred to an emancipated, adult, give-and-take pattern of taking care of herself, being able to be cared for by others, yet not overly relying on that care. The woman rated as "5" (markedly independent) behaved as though never suspecting anyone would care for her or allow her to be dependent upon them. She would miss opportunities for being dependent in relation to a seeming non-openness to dependency.

Covert, underlying dependency patterns were rated on clinical impressions based upon statements made by the woman during interviews and their consonance with her observed behavior. This rating referred to the discrepancy between expressed fantasy (sometimes disguised in linguistics) and actual behavior. *Ability to meet needs, including pleasure* referred to the woman's ability to take care of herself, including having a good time. A woman rated as poor (1) could not take care of her own needs. A woman rated as average (3), could, more or less, but perhaps not pleasure and perhaps not all the time. A woman rated as (5) had an excellent ability to care for her own needs and to enjoy herself without the need for another. This did not preclude her being able to rely on another person to meet her needs or give her pleasure. *Passive-aggressive pattern* referred to a certain style of getting needs met. A passive woman ("1") would wait for someone else to come help her meet her needs or solve a problem. A woman rated as "3" would actively engage in problem-solving activity, but not particularly aggressively. While a woman rated as aggressive ("5") would go "all out" with "no holds barred" to get her needs met.

Moral consistency referred to the consistency with which a person made ethical decisions. A weak rating ("1") meant relaxed

moral standards in the sense of not behaving according to the woman's own expressed values and beliefs, perhaps not doing so in the interests of preserving effort. A woman rated as "3" would have consistent moral values and behavior, but could yield, meaning that she could allow herself the right to make a mistake without being overly critical or feeling high levels of guilt or self-reproach. A woman rated as "5" would have stringent or rigidly unyielding self-criticism when judged not perfect compared to the ideal she wished (or demanded) of herself. When faced with the discrepancy between self and ideal, guilt would arise in plenitude.

Insight into self referred to the understanding brought to bear upon interpreting personal behavior and inner processes. Ratings ranged from no insight ("1") to very insightful ("5"). *Acceptance of personal identity* referred to overall personal acceptance, ranging from a strong sense of rejection ("1") in which the woman did not like virtually any part of herself to ambivalence ("3") in which the woman liked perhaps half of herself, to positive attitudes of self-acceptance ("5"), in which the woman felt that the parts of herself were working well together and that she was a valuable and worthwhile person despite faults and imperfections. *High self-esteem as a woman* referred to the woman's view of herself and her self-esteem in relation to her belief about what it meant to be a woman. This is a complex variable since it refers to the woman's own belief system, which by definition had to include some aspect of pregnancy and motherhood as part of what it meant to be a woman. A woman with low self-esteem ("1") might believe that the role of women was to change the world for other women and that she was unsuccessful because she was having babies like her own mother. A woman who evaluated herself as fairly adequate ("3") might believe that the purpose or role of being a woman was to be able to juggle a career and be a mother and might feel that she was doing a reasonable but not outstanding job on all fronts. A woman with high self-esteem ("5") could have felt that she was doing an excellent job of handling a career, relationship, and children. Alternatively, a woman with this rating might feel the role of women was to raise children and might not have a career, yet feel outstanding as a woman and mother. This rating tied very heavily into the woman's own beliefs, since it referred to her evaluation of herself. *Self-esteem as a wife/mother* referred solely to those elements of the woman's personal belief systems in which she evaluated herself a wife and/or mother.

Achievement of an adult role referred to the raters' evaluation of the woman's behavior and feelings about functioning in the

world as an adult. If the woman behaved like a child, she was rated as childish ("1"). Ambivalence as to adult status ("3") indicated that the woman behaved more or less adult-like (meaning responsible for herself, able to meet her needs, etc.), but, from statements and attitudes, seemed resentful that she should have to do so or felt that "wouldn't it be nicer to stay a child and not have to take care of all these details all the time," which one woman said. Distinctly mature and clear as to adult status ("5") referred to those women who were clearly enjoying being an adult, making their own choices, taking care of their own needs, and did not resent having to grow up or give up being taken care of as a child.

Capacity for closeness referred to the ability of the woman to make and tolerate close, intimate relationships, evaluated by history, observation and experience of the rater, ranging from shallow and distant ("1") to fairly close ("3"), to intense and meaningful ("5"). *Ability to take help* referred to the woman's ability to accept the help offered by friends and staff when help was needed and to consciously acknowledge that need. This rating ranged from no acceptance ("1"), to optimal acceptance ("3"), to extreme dependence ("5"). *Need to control* referred to how much the woman seemed to need to feel power over what others were doing around her and about the events in her life. Rigidly controlling ("1") meant that she seemed to need absolute control over others around her with a sense of no surprises. Neither submissive nor controlling ("3") referred to being able to allow for surprises and accepting others whose behavior cannot be controlled. Submits easily ("5") referred to someone whose behavior could easily be controlled by a person who needed rigid control.

Overall evaluation of adaptive behavior referred to a rating of the woman's coping styles and how well these coping styles seemed to create a smooth living environment for her. For women whose coping styles were inadequate to deal with needs ("1"), there was a constant overwhelming effect of feelings, emotions, and stress. On the other hand, women whose coping styles were highly adequate ("5") experienced smooth living situations without undue stress.

The mate's dependency behavior was rated similarly to the woman's. The mate was also rated as to levels of perceived

* There were two lesbian couples in our sample, so it was necessary to develop other terms to refer to the woman's partner than husband, especially since not all couples were married.

empathy. The mate could have been rated as seemingly insensitive to the woman's expressed needs ("1"), aware of her varying moods or needs as she expressed them ("3"), or sensitive and aware of those moods and needs even before the woman necessarily expressed them ("5"). This last rating referred to an ability to anticipate the woman's needs from a correct reading of subtle and minimal behavioral cues.

Quality of communication referred to the couple's ability and lack of inhibitions to discuss their deeper feelings with each other and with others. This ranged from very inhibited about talking ("1") to uninhibited and free ("5").

Affection referred to the positive feelings of love that could be seen communicated between the couple, verbally or physically, ranging from minimal to intense. *Mate's hostility* was rated similarly as for the woman. *Sexual adjustment* referred to the couple's description of their sexual relationship, rated from restricted and unsatisfying ("1") to highly satisfying ("5"). *Decision process* referred to how the couple arrived at a decision from initially opposing views. The range was from "1," marginal resolution with serious threat to the relation, to "3," resolution achieved after some conflict with no serious threat to the relationship, with "5" referring to a flexibility in arriving at joint decisions, easily moving from agreement to disagreement, compromising and agreeing without threat to self or relationship.

The mate was rated as to *reaction to pregnancy*, ranging from dejected ("1") to enthusiastic ("5"). *Reaction to baby-to-be*, was rated similarly from dejected ("1") to enthusiastic ("5"). Ratings of *readiness to allow dependency* of the woman during the pregnancy ranged from an impatient, hostile attitude towards dependency ("1") to a full response to her needs for support ("5"). The mate was also rated as to ability to *foster the woman's self-confidence* as a mother. This rating ranged from expressing attitudes and actions generally belittling and destructive ("1") to fully sustaining the woman's belief in her capability to be a good mother ("5"). The mate was rated as to *feelings about sharing* the woman with a baby, ranging from acting clearly impatient and jealous of that perceived future sharing ("1"), to awareness of potential conflict with willingness to work it through ("3"), to seeming more interested in the baby than the mother ("5").

The pregnancy was rated as to its *congruence with the current lifestyle* of the couple, from disruptive and incongruent ("1") to highly consonant ("5"). The *congruence of the pregnancy with the couple's long-term plans* was rated similarly. The *identity of the couple*

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was rated from each being completely individualistic as if a relationship did not exist ("1"), to having an identity as a couple with each retaining their individuality ("3"), to little differentiation of the couple with its acting as a symbiotic unit ("5"). *Adaptation to each other* was rated in the sense of how well each had accommodated to individual differences of the other on a scale from very poor ("1") to excellent ("5"). *Current life stresses* were noted. These included anxiety about financial security, food and management problems, illness or recent death in the extended family, illness of woman or mate, problems with relatives, problems from a previous relationship of one of the members, problems with friends, job dissatisfaction for the woman, job dissatisfaction for the mate, and other stresses. The *woman's response to the discussion of pain of during labor* initiated by the birth counselor was rated along with her mate's. This ranged from a complete refusal to accept the idea that labor could be painful or that active coping would be required ("1"), to an excellent response leading to planning for needed coping styles ("5").

Belief Coding

When the primary focus of the research shifted to beliefs and behavioral patterns of the subjects we needed an improved coding schedule. Variables used were Behavior Patterns, Systems Effects, Beliefs, and an interactive variable combining these three. Sub-variables developed were Beliefs about Birth, Major Coping Styles, Fears, Husband, Daily Coping, Beliefs about Self, Help, Relationship Patterns, Locus of Control, Psychosomatic Patterns, Somatopsychic Patterns, Beliefs about Health and Dependency Patterns for a total of thirteen sub-variables. Values were placed on all of the variables ranging from negative three (-3) to positive three (+3). Each of the subject's responses were assessed with the value weighted on each variable to develop a profile of her attitude related to her "place in the world." Values were derived through consensual rating of the research team based upon our clinical experience. The team did not know who held specific beliefs, just the list.

Source: reprinted with permission from Mehl, L.E. & Peterson, G. H. (1985). Pregnancy as Healing (Vol. 2). Berkeley, California: Mindbody Press.

Beliefs About Birth:

Childbirth is unhappy	-2
Childbirth is scary	-2
I'm not sure I'm able to have a natural birth	-2
My body has the same problems during birth that my mother did	-2
Mate believes baby pops out like piece of toast	-1
I'm capable of handling labor and delivery	+1
Parents made happy through natural childbirth	+1
Baby made happy through natural childbirth	+1
Birth will cause loss of my husband	-2
Pain in labor is bad	-3
Birth is difficult, painful, dangerous	-3
Birth is traumatic for the baby	-3
Birth is fearful & frightening for the baby	-3
Birth represents separation	-2
Birth is a natural process	+1
Doctors make birth cruel and unnatural	-1
Bonding with father at birth is important	+1
Labor = being out of control	-1
Having a baby is a challenge	+1
My body does not function properly for babies	-1
Midwives help makes birth good	-1
Being tense affects the body	+1

Major Coping Styles:

Intellectualize way out	-1
Obsessive-compulsive work in response to fear of the unknown	-2
Worries about husband, etc.	-1
Denies problems	-2
Passivity (let others do it)	-2
Adjusts well to be stress free	+2
Somaticization	-2
Repress undesirable or bad thoughts	-2
Wanting to die when things get too bad	-3
White-washing	-2
Get taken care of like little girl	-1
Overwork	-2

Fears: (created as a separate category)

Of rejection	-1
Of a deformed baby	-3
Of the baby passing through birth canal	-2
About giving birth to twins	-1

About inadequacy as mother	-1
Of the baby dying	-2
Of failure	-1
Anxiety about self-worth	-1
Anxiety about security	-1
Of dying	-2
Of loss of love	-1
About health	-1
About whether or not she can have a natural birth	-2
Of losing control	-3
Anxiety about competition with mother-in-law about successful birth	-2
Performance anxiety about birth	-2
Of birth causing loss of husband	-2
Of pain	-3
Of humiliation	-1
Of exhaustion	-1
Of becoming violent	-2
Of becoming schizophrenic like her brother	-2
Of hospitals	-2

Husband:

Somatic methods necessary to engage husband's attention/participation (Relationship Pattern; Somatopsychic Pattern)	-2
Somatic methods needed to avoid sex (Somatopsychic Pattern)	-2
Natural childbirth makes husband happy	-1
Fighting for control over mate (Relationship Pattern)	-1
Fears loss of love of mate (Fears)	-1
Stays invested in ex-husband & feels unfree	-1
Ex-husband dies during divorce proceedings	-1
Tries to pretend ex-husband cares for son	-1
Turns to husband for support	+1
Mate believes baby pops out like piece of toast	-1
Worried that birth will cause loss of husband	-2
Wants mate to take care of her like father's good little girl	-1
Takes care of husband to own physiological expense	-1
Won't make demands that husband deal with her on marital issues	-1

Coping:

Removes self from situation rather than dealing	-2
Leaves body	-3
Deals with own life	+2
Get rid of parts of me I don't like	-2
Active in church	+1
Live to your fullest potential	+2
Wants to die when things get too bad	-2
Looks for ways to make things look more beautiful	-1
Uses pretend to imagine relationships	-1
Arrange to be father's good little girl	-1
Arranges to be the caretaker	-1
Tries to achieve understanding	+1
Asks others to do things for her	-1
Where there's a will, there's a way	+2
You get what you want through focus on personal awareness and responsibility	+2
Get what you want by taking responsibility for health	+2
All things can be transformed by thought	+1

Beliefs about Self:

I am a person who can easily fail in the things I attempt	-2
I'm not sure that I'm a very worthwhile person	-1
I am responsible for my actions	+2
I am responsible for dealing with my life	+2
I should get rid of bad & paranoid thoughts	-1
It's bad to lose control	-2
I am weak and powerless	-1
If I become powerful, I will be violent	-2
I have no power over my body or my life	-1
I'm too old to have a baby	-3
My life has no meaning at this time	-1
I have no right to play	-1
I have to be conscientious and hardworking	-1
I should be perfect	-2
My body does not function properly for babies	-2
I don't deserve love	-1
I have no right to happiness	-1

Beliefs about Help:

I'm helped best by being hassled	-1
Exercise helps my spine pain	+1
Herb and nutritional counseling helps me	+1
I can be helped best by understanding causes, not treating symptoms	+2
Help me to be perfect mother	-1
Help me with biofeedback	-1
Help me with kinesiology	-1
Help me with sexuality	+1
Exercise helps me to relax	+1
Midwives help makes good birth	-1
Good nutrition helps weight control	+1
Give me information to alleviate my vaginal infection	+1
Help me prevent PID recurrence	+1
Give me more medical knowledge	+1

Relationship Patterns:

Frustrated when questions not answered	-1
Parents are inadequate people	-1
Endure punishment to be taken care of	-3
Poor communication leads to anger	-1
Depend on others	-1
Fighting for control in relationships	-1
Physical problems gotten rid of in relationship with another	+2
Fears loss of love	-1
Stays invested in ex-relationships	-1
Finds ways to feel trapped by staying invested in exhusband	-2
Pretend relationships interfere with real relationships	-1
Finds support in relationship	+2
Symbiotic tendency in relationships	-1
Needs to be needed in relationships	-1
Deprives self and others of joy in relationship	-1
Gets rejected in relationship	-1
Avoids deep relationships	-1
Get taken care of in relationship like father's good little girl	-1
Cares for others at personal expense	-2
Avoid pain in relationships	-2
Feels weak and powerless in relationship	-1
Uncomfortable with power in relationship	-1

Doesn't make demands for own need	-1
Love relationships don't work out	-1
Is best helped when hassled	-1
Likes to be hassled in relationship	-1
Relies on others to make things good for her	-1
Locus Of Control:	
External	-1
Husband	-1
Natural childbirth	-1
Pregnancy	-1
Baby	-1
Others also	-1
Fighting for control	-1
Self	+1
Hospitals	-1
Disease	-1
Midwife	-1
Psychosomatic Patterns:	
Asthma response to feeling smothered	-2
Body tension in response to stress	-1
Breech is related to effective method of engaging husbands participation	-2
Somatization to avoid sex	-2
Thought of pregnancy ---> thought of TAB ---> thought of baby dying	-1
Life stress ---> somatic reaction	-2
Disgust ---> nausea	-1
Relationship stress affects birth physiology	-3
Excessive caring for others ---> personal symptoms	-2
Tiredness ---> lowered resistance ---> infections	-2
Depression ---> lowered resistance ---> infections	-2
Somatopsychic Patterns:	
Anger/guilt about previous C-section	-1
Shame and guilt around sexual experience	-2
Identification with mother after C-section	-1
Worry about giving birth to twins	-1
Fear in response to image of baby passing through birth canal	-2
Pregnancy leads to feelings of inadequacy	-1
Death thoughts trigger fear of loss of love	-1
Feelings of abortion lead to woman wanting to die	-2

Herpes is related to death	-1
Birth causes loss of husband	-2
Disease ---> fear	-1
Confusion and low self-esteem	-1

Health:

Good health comes from exercise	+ 1
Good health comes from self-care	+ 1
Good health comes from positive mental attitude	+ 2
I can do what I need to avoid the effects of stress	+ 2
Physical problems have causes	+ 1
Physical problems can be gotten rid of	+ 1
I'm worried about whether or not I can stay healthy	-1
Nutrition helps alleviate my allergies	+ 1
Good health comes from good diet; bad health from bad diet	+ 1
Vitamin therapy helps alleviate my allergies	-1
Back pain is part of emotional repression	+ 1
Illness is caused by mental attitudes	+ 1
Illness is caused by lifestyle	+ 1
Sickness comes when I get tired, making my resistance drop	-1
Sickness comes when I get depressed, making my resistance drop	-1
There is a psychic component to illness	+ 1
You should stay away from regular doctors	+ 1
Use therapies from other cultures for disease	-1
Hospitals are for the sick and injured	+ 1
Hospitals are scary, out of control places	-1
Disease is outside force which cannot be controlled	-1
Disease is a beneficial alarm for unhealthy habits	+ 1
Herbs treat illness	-1
Treat illness with nutrition	-1
Biofeedback good treatment for allergy	-1
Kinesiology good treatment for allergies	-1
Good nutrition controls weight	+ 1

Dependency Patterns:

Relies on inappropriate people to assume control and responsibility	-1
Relies on husband for instructions on how to deal	-1
Ambivalence in dependence/independence	-2
Endure punishment to be taken care of	-3
Depends on others	-1
Needs to be needed	-1
Wants to continue as father's good little girl	-1
Needs to be the one who's taking care of everyone else	-2
I am weak and powerless	-1
Careful not to make any demands on others	-2
Depends on others to give her a good experience	-1

Readers with questions about our valuations are encouraged to try their own scaling systems. These values were based on clinical judgment of Bay Area women, 1977-1984, and may not function or generalize to other cultures or milieus.

APPENDIX B

HOLISTIC PRENATAL

SURETY RISK SCREENING TOOL

Holistic Prenatal Surety-Risk Screening Tool

Medical History
To be combined with a Comprehensive Physical Exam

MEDICAL HISTORY		Patient	Family	MODERATE RISK	
No Significant Problem 0	Significant Problem X				
1. High blood pressure				38. Age under 19 or 35-39	
2. Heart problems				39. Less than 8th grade education	
3. Rheumatic fever				40. Cardiac disease—Class I or II	
4. Pulmonary disorders/TB				41. Tuberculosis	
5. GI problems (N&V, Di., Const.)				42. Pulmonary disease, chronic	
6. Kidney disease				43. Thrombophlebitis	
7. Urinary tract infection				44. Endocrinopathy	
8. Genitourinary abnormalities				45. Epilepsy (uses medication)	
9. Birth defects				46. Fertility problem, treated	
10. Infectious Diseases/Torch				47. 2 abortions (spont/induced)	
11. Multiple births				48. Greater than or equal to 7 deliveries	
12. Diabetes/gestational diab.				49. Previous preterm/SGA infants	
13. Thyroid/hormone problems				50. Inf. less than or equal to 4000 gms or less than or equal to 9 lbs.	
14. Cancer				51. Isoimmunization (ABO, etc.)	
15. Blood dyscrasias				52. Hemorrhage during previous pregnancy	
16. Anemia				53. Previous preeclampsia	
17. Sickle cell/hemoglobinopathy				54. Surgically scarred uterus	
18. Phlebitis, varicosities				55. Underweight by greater than or equal to 15% Stand. Wt.	
19. Abnormal vaginal bleeding				56. Overweight by greater than or equal to 20% Stand. Wt.	
20. Fertility problems				57. Radiation	
21. STD (Herpes, GC, Syph., etc.)				58. Other	
22. Psychiatric disorders/Depression					
23. Convulsions/Epilepsy				HIGH RISK	
24. Operations/Accidents				59. Age greater than or equal to 40	
25. Blood transfusions				60. Diabetes mellitus	
26. Other hospitalizations				61. Hypertension	
27. Dental disorders				62. Cardiac disease—Class III or IV	
28. Migraine/Severe HA				63. Chronic renal disease	
29. Drug usage (any)				64. Congenital/chromosomal anomalies	
30. Smoking/alcohol				65. Hemoglobinopathies	
31. DES Exposure				66. Isoimmunization (Rh)	
32. Douching				67. Drug addiction/alcoholism	
33. Pica				68. Habitual abortions (3 or more)	
34. No TD visit 10 years				69. Incompetent cervix	
35. Occupational hazards				70. Previous fetal or neonatal death	
36. Potential for toxoplasmosis				71. Prior CNS damaged infant	
37. Allergic/drug reactions					

DETAIL POSITIVE FINDINGS

List any bodily injuries.

List any significant infections.

Source: Adapted from a form used by the Tennessee Department of Public Health

Have you noticed any major body changes in the last two years?

List current medications you are taking.

ALLERGIES:

Do you have any known allergies?
 What symptoms do you have?
 Have you ever had an unusual reaction to a drug?
 What drugs?
 What reactions?

What specific problems do you have that you would like us to help you with?
 What do you think are the best ways that we could help you with these problems?

Scoring of Medical History Section

Any two high risk factors - - - - -	1
Any one high risk factor - - - - -	2
Any two moderate risk factors - - - - -	2
Any one moderate risk factor - - - - -	3
No moderate or high risk factors but history of GI problems and/or infections and/or allergies -	4
No significant problems - - - - -	5

Scoring Family History Section

Strong family history of birth defects and cancer or heart disease - -	1
Strong family history of insulin dependent diabetes or birth defects or heart disease or cancer - - - - -	2
Family history of high blood pressure, stroke, lung disorders, epilepsy - - - - -	3
Family history allergies, migraines - - - - -	4
No significant family health problems - - - - -	5

Nutrition History

Dietary restrictions:

Current vitamins or supplements:

How much hard liquor do you drink daily? _____
Weekly? _____How much wine do you drink daily? _____
Weekly? _____How many packs of cigarettes do you smoke daily? _____
Do you smoke cigars? _____ Pipes? _____

Do you snack between meals?

What do you eat when you snack?

How much coffee do you drink daily?

How many soft drinks do you drink daily?

How much beer do you drink daily? _____
Weekly? _____

Do you overeat or undereat when:

tense _____ nervous _____ depressed _____ unhappy _____
worried _____

24 Hour Diet Recall

Date: _____

FoodAmountScoring on Nutrition History

Drinks >2 drinks/day and/or smokes >1 pack/day - - - - - 1

Drinks 1-2 drinks/day and/or smokes 3-10 cigarettes/day
and/or inadequate in 2 food groups or heavy caffeine user - 2No alcohol, 1-3 cigarettes/day, inadequate in one food group,
2-5 caffeine drinks/day - - - - - 3No alcohol, no smoking, 1-2 caffeine drinks/day,
all 4 food groups, occasional vitamins - - - - - 4No alcohol, no smoking, no caffeine, excellent diet,
daily vitamins - - - - - 5

Social History Form

Marital status: _____
How long? _____
Years of education _____ Highest degree _____
Religious preference: _____
Occupation(s): _____
Place of birth: _____
Who else lives in your house? _____

What are your spiritual beliefs and how do they affect your life?

What type of physical activity are you getting?

How much exercise do you get per week?

What do you think makes people healthy and what makes them sick?

Motions

Please describe your current emotional status (How are you feeling?)

To whom do you turn for support?

How was your relationship with your parents when you were growing up?

Have you ever had psychotherapy?

Taken psychotherapeutic drugs?

What kinds?

How long?

Did it help?

Are you involved in personal growth activities?

Scoring Social History

Possesses less than an 8th grade education. Has no long-standing, supportive relationship. Is sedentary in nature or has a job with a great deal of physical stress. Has a spiritual-belief system which is punitive in nature. Describes self as mixed-up or unhappy emotionally. Has little support system. Unresolved problems which have required psychotherapy. - - - 1

May have supportive relationship but is insecure about self. Has a job which is stressful physically but is able to rest some each day. Has a family-support system but this system has little energy for this individual. Has no personal spiritual-belief system but family-belief system is punitive in nature. - - - - - 2

Has a supportive relationship and/or a supportive network of friends and family. Possesses self-confidence and is generally positive in outlook. Does a moderate amount of activity during the day but does not plan exercise. May have an occupation which is moderately stressful or may be in the health professions or a homemaker. - - - - - 3

Has a high school education or greater. Has generalized spiritual beliefs which are not punitive in nature or has no specific beliefs. Participates in occasional physical activity of an organized nature and is not sedentary. May have a somewhat stressful job but has compensating family support. Describes emotional status as good but may have had previous problems (now resolved). - - - - - 4

Has a high school education or greater. Accepts a religion which is confirming of birth and does not serve as a punitive force in her life. Participating in a stable relationship. Participates in regular physical activity and is not sedentary in nature but does not have a job which involves heavy lifting and physical stress. Describes emotional status as well-adjusted. Can name several sources of emotional support or growth activities. - - - - - 5

Obstetrical History

Describe your past pregnancy experiences. Include pregnancies, births, abortions, and miscarriages.

<u>Year</u>	<u>Experience</u>	<u>Comments</u>
-------------	-------------------	-----------------

What are your concerns or worries about this pregnancy and the experience of childbearing?

	<u>Mother</u>	<u>Sisters</u>	<u>Others</u>
Feelings about pregnancy and birth.			
Number of pregnancies.			
Number of live births.			
Any complications or unusual circumstances.			
Breast or bottle feeding?			
Place of birth:			
Hospital?			
Home?			
Other?			
Any medications?			

Partner's Form

Do you have any particular concerns about pregnancy, birth, and/or parenting?

How do you want to be involved in the birth?

Obstetrical History Scoring

Woman has strong family and/or personal history of difficult births, stillbirths, C-sections, problems with abortions or miscarriages. Partner refuses to be present at birth and/or states concern for very dangerous nature of birth. - - - - - 1

Woman has strong family history of difficult births but no personal history of birth problems. Partner is supportive but unsure of attendance at birth. Partner may express concern with danger of birth process. No personal history of birth problems. May have unresolved problems with previous abortion or miscarriage. - - - - - 2

Woman has personal and/or family history of minor birth problems (forceps, long labors). Woman relays ambivalence about her ability to succeed at "natural childbirth." Partner agrees to attend but may be less enthusiastic than woman or may be supportive but woman unsure. - - - - - 3

Partner agrees to attend birth and offer support. Personal history of no previous Ob problems. General family history of uncomplicated births in a hospital or home setting. Woman somewhat unsure of ability to cope with birth. - - - - - 4

Partner plans to attend birth and be an active participant as support person. Woman states no concerns related to birth process specifically and expresses a positive outlook for herself as a strong, capable, birthing woman. Family history shows home births, breast-feeding, strong family ties. - - - - - 5

LIFE CHANGE AND ENVIRONMENTAL STRESS EVALUATION
Berkeley Family Health Center

After studying the recent histories of people with medical problems Holmes and Holmes (1970) have concluded that any number of illnesses can be precipitated by the stress accompanying changes in one's life. To measure the impact of different kinds of changes, Holmes and Rahe (1967) have developed the Social Readjustment Rating Scale, which rates each kind of potentially stressful event in terms of "life change units" (LCUs). Please circle the number in the LCU column if this has happened to you.

LIFE EVENT	LCUs
Death of spouse	100
Divorce	73
Marital separation	65
Jail term	63
Death of a close family member	63
Personal injury or illness	53
Marriage	50
Fired at work	47
Marital reconciliation	45
Retirement	45
Change in health of family member	44
Pregnancy	40
Sex difficulties	38
Gain of new family member	38
Business readjustment	38
Change in financial state	38
Death of a close friend	37
Change to different line of work	36
Change in number of arguments with spouse	35
Mortgage over \$10,000	31
Foreclosure of mortgage or loan	30
Change in responsibilities at work	29
Son or daughter leaving home	29
Trouble with in-laws	29
Outstanding personal achievement	28
Wife begins or stops work	28
Begin or end school	26
Change in living conditions	25
Revision of personal habits	24
Trouble with boss	23
Change in work hours or conditions	20
Change in residence	20
Change in schools	20
Change in recreation	18
Change in church activities	18
Change in social activities	18
Mortgage or loan less than \$10,000	17
Change in sleeping habits	16
Change in number of family get-togethers	15
Change in eating habits	15
Vacation	13
Christmas	12
Minor violations of the law	11
TOTAL LCUs	

Source: reprinted with permission from Mehl, L.E. & Peterson, G. H. (1979). The Berkeley Health Center: A existential approach to holistic health care. In D. Stewart & L. Stewart (eds.), Compulsory hospitalization: Freedom of choice in childbirth (Vol. 2). Marble Hill, Missouri: Napsac Reproductions.

MHLC Form A

This is a questionnaire designed to determine the way in which different people view certain important health-related issues. Each item is a belief statement with which you may agree or disagree. Beside each statement is a scale which ranges from strongly disagree (1) to strongly agree (6). For each item we would like you to circle the number that represents the extent to which you disagree or agree with the statement. The more strongly you agree with a statement, then the higher will be the number you circle. The more strongly you disagree with a statement, then the lower will be the number you circle. Please make sure that you answer every item and that you circle only one number per item. This is a measure of your personal beliefs; obviously, there are no right or wrong answers.

Please answer these items carefully, but do not spend too much time on any one item. As much as you can, try to respond to each item independently. When making your choice, do not be influenced by your previous choices. It is important that you respond according to your actual beliefs and not according to how you feel you should believe or how you think we want you to believe.

	Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree
1. If I get sick, it is my own behavior which determines how soon I get well again.	1	2	3	4	5	6
2. No matter what I do, if I am going to get sick, I will get sick.	1	2	3	4	5	6
3. Having regular contact with my physician is the best way for me to avoid illness.	1	2	3	4	5	6
4. Most things that affect my health happen to me by accident.	1	2	3	4	5	6
5. Whenever I don't feel well, I should consult a medically trained professional.	1	2	3	4	5	6
6. I am in control of my health.	1	2	3	4	5	6
7. My family has a lot to do with my becoming sick or staying healthy.	1	2	3	4	5	6
8. When I get sick, I am to blame.	1	2	3	4	5	6
9. Luck plays a big part in determining how soon I will recover from an illness.	1	2	3	4	5	6
10. Health professionals control my health.	1	2	3	4	5	6
11. My good health is largely a matter of good fortune.	1	2	3	4	5	6
12. The main thing which affects my health is what I myself do.	1	2	3	4	5	6
13. If I take care of myself, I can avoid illness.	1	2	3	4	5	6
14. When I recover from an illness, it's usually because other people (for example, doctors, nurses, family, friends) have been taking good care of me.	1	2	3	4	5	6
15. No matter what I do, I'm likely to get sick.	1	2	3	4	5	6
16. If it's meant to be, I will stay healthy.	1	2	3	4	5	6
17. If I take the right actions, I can stay healthy.	1	2	3	4	5	6
18. Regarding my health, I can only do what my doctor tells me to do.	1	2	3	4	5	6

Source: reprinted with permission from Wallston, K.A., Wallston, B.S., & DeVellis, R. F. (1978). Development of the multidimensional health locus of control (MHLC) scales. Health Education Monographs, 6(2), 160-170.

Scoring for Health Locus of Control

The score on each subscale is the sum of the values circled for each item in that subscale.

Internal Items: 1, 6, 8, 12, 13, 17

<10	-----	1
10 - 18	-----	2
18 - 25	-----	3
25 - 32	-----	4
32 - 36	-----	5

Scoring for Life Change Environmental Stress Evaluation

>300	-----	1
250 - 300	-----	2
200 - 250	-----	3
100 - 200	-----	4
<150	-----	5

The Birth Counselor Interview is an opportunity to use a semi-structured interview format to obtain information about the woman's emotional and psychological adjustment. This interview is ideally conducted by a member of the health care team who will not be the birth attendant. The answers to the following questions should be used to judge the psychological parameters listed under rating. The interviewers should use their own intuitive sense of the woman as a whole in making the rating judgements after the interview.

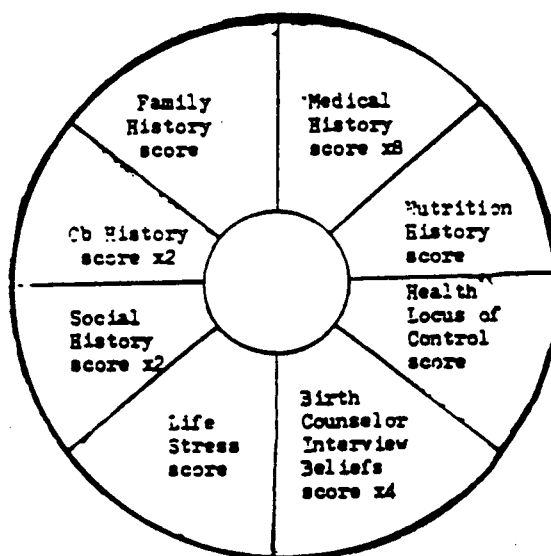
Birth Counselor Interview Questions

1. Tell me what you believe it means to be a woman and how do you fit this picture?
2. Tell me about your relationship with your parents.
Tell me about your relationship with your partner.
3. What do you and your partner fight about?
4. How do you usually resolve your differences?
5. How is your love life going? Is it still romantic? Is it still sexy?
6. Tell me about your plans for your family and for this baby.
7. How does your husband feel about that?
8. Tell me about some things that make you anxious. How do you react to these situations?
9. Suppose you fell down at home and broke your leg. What would you do? Whom would you call for help? How would they help you?
10. How would your partner react to that situation?
11. Tell me how you feel about the pain of labor.
12. How does your partner feel about your being in pain in labor?

Rating for Birth Interview

Each question rated on a 1 through 5 scale.

1. Woman's attitude toward pain during childbirth:
(1) refusal to accept idea of pain to (5) excellent response to reality of pain and planning for coping mechanisms.
 2. Anxiety - 5-point scale of expressed anxiety:
The woman rates (1) if she predominately exhibits anxiety and (5) if she rarely displays anxiety in her interpersonal interactions.
 3. Patterns of covert behavior to become dependent:
(1) large discrepancy between expressed fantasy and actual behavior
(5) expressed wishes and behavior are matched with a pattern that shows normal give-and-take.
 4. Patterns of attempting to control others in relationships:
(1) rigidly controlling (5) could easily be controlled.
 5. Hostility between couple:
(1) very hostile (5) very little hostility
 6. High self-esteem as a woman:
(1) low self-esteem (5) high self-esteem
 7. Passive vs. active style of obtaining wants:
(1) would wait for help (5) would go "all out" to get her needs met.
 8. Partner's empathy:
(1) insensitive (3) aware of expressed needs (5) aware of expressed and unexpressed needs.
 9. Partner's response to discussion of pain in childbirth graded as in item 1.
 10. Affection between couple:
(1) minimal (5) intense
 11. Patterns of taking help:
(1) no acceptance (5) accepts help easily
 12. Comfort with adult role:
(1) childish (5) clearly enjoying adult role
 13. Patterns of self-insight:
(1) no insight (5) very insightful
- Score: Average items 1 through 4; then average items 5-13. Next find the average of these two numbers, and that is the total score on the interview section.

Total Scoring of HFSPST

By placing each section's score in its own section and multiplying by the correct number one can obtain an overall score on the tool on a scale of 1 to 100:

Medical History - - - - - score x8 =
 Nutrition History - - - - - score x1 =
 Locus of Control - - - - - score x1 =
 Beliefs Based on Interview - - - - - score x4 =
 Life Stress - - - - - score x1 =
 Social History - - - - - score x2 =
 Ob History - - - - - score x2 =
 Family Medical History - - - - - score x1 =

total score: _____

The total score of 1 - 100 can be converted back to a 1 - 5 scale in the following manner:

$$85 - 100 = 5$$

$$70 - 85 = 4$$

$$50 - 70 = 3$$

$$30 - 50 = 2$$

$$20 - 30 = 1$$

Group five will be a prediction of an entirely normal delivery expected with no need for intervention. Group four is a prediction for a probable normal delivery with possible need for minor psychological and/or minor medical intervention such as an episiotomy. Group three is an expectation of an unpredictable outcome which might require more sophisticated equipment such as oxygen, but would be safely performed in an alternative birth center. Group two is a prediction of a complicated delivery which would need major medical technology only available in a hospital. Group one would predict a life-threatening circumstance for either mother or infant obviously requiring a multitude of technological and medical interventions.

APPENDIX C

ADDITIONAL DOCUMENTS

Medical Risk Factors
Not Present in This Population

High Risk Prenatal Factors

I. CARDIOVASCULAR AND RENAL

Toxemia
Hypertension
Renal disease
Heart disease

II. METABOLIC

Diabetes
Previous endocrine ablation
Thyroid disease, uncontrolled

III. PREVIOUS HISTORIES

Previous fetal exchange transfusion for Rh
Previous cesarean section

IV. ANATOMIC ABNORMALITIES

Uterine malformation
Incomplete cervix
Abnormal fetal position
Polyhydramnios

V. MISCELLANEOUS

Multiple pregnancy
Sickle cell disease
Rh sensitization only
Positive serology
Severe anemia (9 gm. Hgb)
Excessive use of drugs
Pulmonary disease, moderate to severe
Alcohol (moderate)
Active bacterial infection
Non-reactive non-stress test
Positive Oxytocin Challenge Test

Source: reprinted with permission from Peterson, G. (1983).
Birthing normally, Berkeley, California: Mindbody Press.

PANEL OF EXPERTS

Anderson, Betty, CNM, ANA - FNC, is employed at a rural health clinic in Tennessee. Her area of special interest is obstetrics.

Camp, Beverly Deane, RN, BSN, CNM, is currently practicing well woman care in Mississippi. Her areas of special interest include wholistic care and home birth.

Chapman, Linda, BA, MSN, is employed as a clinical maternal-child specialist in Tennessee. She is particularly interested in parent education and care of the neonate.

Cargill, Karyl, RN, CNM, is working in private practice with an MD in Tennessee. She provides prenatal, intrapartum, post partum and gynecological care for her patients.

Chambers, Nina, AD, CNP, is working as a nurse practitioner in family planning and prenatal clinics in rural Tennessee.

Coleman, J. Tiffany, BA, CNM, RN, Masters in Public Health, is employed as a midwife in a military hospital in Hawaii. Her areas of special interest are nutrition and exercise.

Colla, Judith, RN, MPH, CNM, is employed in a private OB/GYN practice and is a preceptor on the faculty at the University of Pennsylvania.

Davenport, Mary L., MD, FACOG, is in private practice in California and also serves as an Assistant Clinical Professor at the University of California, San Francisco. Her areas of special interest are prenatal and perinatal psychology.

Diez d'Aux, Robert C., BA, MS, MD, is working in family practice in rural Tennessee. His areas of special interest include childbirth and child care.

Gehrke, Roberta F., RN, CNM, SCN, in England and Wales, works in family services in California. She is interested in the full scope of midwifery care

Goans, Ronald E., BS, MS, PhD, MD, is practicing obstetrics and gynecology in Washington, D. C. His special areas of professional interests are ultrasound, radiation physics and medical instrumentation, and he has published 22 articles in medicine, radiation/health physics and ultrasound.

Graf, Linda A., RNC, CNM, MSN, runs an independent home birth practice in Illinois which includes family planning and well-woman gynecology. She is particularly interested in prenatal risk screening as it relates to home birth clients.

Panel of experts continued

Haynes, Ginger Breedlow, BSN, CNM, has a home birth practice in Kansas as well as working in a freestanding alternative birth center. Her primary interest is in advocating freedom of choice based on a knowledge of alternatives.

Henry, Kathleen, BA, MSN, FNP, is employed as an RN on a medical-surgical floor of a hospital in Tennessee. She is especially interested in family-centered prenatal care and midwifery.

Huerta, Lisa Ross, State Certified Midwife in England and Wales, CNM, BSN, is particularly interested in low-risk, woman-centered maternity care. She is currently director of clinical services at a freestanding birth center in Tennessee.

Jessup, Debby, BS, MS, MA, CNM, is working as a midwife in Montana. Her special areas of interest are teenage pregnancy, maternal nutrition, and sexuality during pregnancy.

Kelsey, Mary Lou, BSN, RN, MSN, CNM, has an active private practice of midwifery in Alaska. She is primarily interested in the promotion of the nurse-midwifery profession and in seeing midwifery practice intersected within a family practice setting.

Laurence, Jennifer, BA, MD, is currently a resident in OB/GYN in a hospital in Washington D. C.

Marchesi, Wendy, BA, AAS, CNM, has a home birth practice in Maryland. She is primarily interested in holistic modes of prenatal care, labor and delivery care, and gynecological care.

Laird, John, MD, is currently in general practice in North Carolina. His areas of special interest include preventive medicine and out-of-hospital births.

Mehl, Lewis, MD, PhD, is a practicing physician and a researcher from California. He is currently involved in the practice of behavioral medicine. His publications include numerous articles and three books.

McGinnis, Doris G., BSN, RN, MSN, is an instructor at a college of nursing in Delaware. She is on the board of a birth center and is interested in legislation for protecting nurses in high-risk areas. Her masters thesis focused on sexuality during pregnancy and she has also published a module on listening for feelings.

McNutt, Nona L., RN, CNM, is working at a home birth service in Maryland. She is especially interested in maternal nutrition and has published an article on empathy in Obstetrics and Gynecology.

Moore, Louanne Faucher, BSN, MSN (FNC), is working as a faculty member in a BSN program in Tennessee and is the coordinator for primary health care nursing courses. Her areas of special interests are OB/GYN/Neonatal nursing and well children.

Nicholl, Joyce, BSN, MED, MSN, is a nurse practitioner in private practice with an MD in Tennessee. She is particularly interested in PMS, menopause, infertility, liability, and malpractice. She has published two articles concerning practicing in a rural setting in The Nurse Practitioner.

Ousley, Emily P., RN, BSN, CNM, is a nurse midwife living in North Carolina who assisted in the development of a free-standing birthing center.

Pendergrass, Linda H., BSN, Masters in Health Education, is working as a nurse clinician and co-ordinator in Tennessee. Her special areas of interests are infertility and diabetes.

Searles, Wanda K., RN, CNM, is working as a midwife in rural Tennessee. She is particularly interested in holistic health in obstretical care.

Shealy, C. Norman, MD, PhD, FACS, is the director of a pain and health rehabilitation institute in Michigan. His primary interests are pain, stress and holistic medicine and he is the author of 170 publications which includes eight books.

Shoffner, Dava, MS, MSN, PhD candidate, is an Assistant Professor at the University of Tennessee, College of Nursing. She is particularly interested in prenatal supervision, parent-child relations and labor and delivery.

Thomas, Lutrica, AAS, NP, CNM, is a family nurse practitioner from Tennessee. Her areas of special interest are legislative issues and history.

Verny, Thomas, MD, D Psych, FRCP (c), is a practicing psychiatrist in Canada. Dr. Verny is the author of two books and numerous scientific publications which have been published in seventeen countries. His area of special interest is prenatal and perinatal psychology.

Panel of experts continued

Wike, Kathy, RN, CNM, is working as a staff midwife at a birthing center in rural Tennessee.

Wolfson, Iris, BS, CNM, currently practices in Pennsylvania, has served on the clinical faculty at NYU, and has published a chapter on touch in an edited book.

Thank-you for serving as an expert judge in establishing the content validity of the Holistic Prenatal Surity Risk Screening Tool. I am grateful for your invaluable assistance in helping me complete my thesis project.

Please complete the attached Expert Judges' Credentials Form.

The purpose of my study is the development of a clinically usable holistic risk screening tool to judge potential birth risk. The attached tool was developed on the basis of work done by Lewis Mehl and Gayle Peterson. This work is outlined in their books Pregnancy as Healing, Volumes I and II.

Your contribution to this study is to serve as an expert judge to help evaluate the content validity of this revised tool. Your clinical experience and judgement can serve as a valuable resource in the development of this tool prior to human testing.

Please proceed through each section of the tool and grade each section on the attached Panel of Experts Form. Please put an (X) beside any items in the tool which you feel should be deleted and circle any items which you feel are unclear. Feel free to add any comments, any additional items, or suggestions under the comments section. Once you have completed each section please rate the entire tool and add overall comments on the form.

Place the tool, the credentials form, and the attached panel of experts' form in the enclosed stamped envelope and place in the mail. Please return this within 14 days.

Thank-you again for your assistance.

Expert Judges' Credentials

Name: _____

Nature of Current Professional Practice: _____

Academic Degrees and Credentials: (Abbreviations are acceptable.)

Publications: _____

Areas of Special Professional Interest: _____

_____ Check here if you would like a brief synopsis of the
results of this study upon its completion.

Panel of Experts Form

Outcome - please grade each section of the scale from 1 (no valid relation to birth outcome) to 5 (very valid relationship to birth outcome)

Scoring - please grade each section of the scale from 1 (scoring has major flaws which make this section invalid) to 5 (scoring is very valid)

Usefulness - please grade each section of the scale from 1 (clinically unusable) to 5 (clinically usable in most situations)

Medical History Form

Outcome	1	2	3	4	5
Scoring	1	2	3	4	5
Usefulness	1	2	3	4	5

Comments:

Nutrition History Form

Outcome	1	2	3	4	5
Scoring	1	2	3	4	5
Usefulness	1	2	3	4	5

Comments:

Social History Form

Outcome	1	2	3	4	5
Scoring	1	2	3	4	5
Usefulness	1	2	3	4	5

Comments:

Obstetrical History Form

Outcome	1	2	3	4	5
Scoring	1	2	3	4	5
Usefulness	1	2	3	4	5

Comments:Life-Change and Environmental-Stress Evaluation

Outcome	1	2	3	4	5
Scoring	1	2	3	4	5
Usefulness	1	2	3	4	5

Comments:Health Locus of Control

Outcome	1	2	3	4	5
Scoring	1	2	3	4	5
Usefulness	1	2	3	4	5

Comments:Birth Counselor Interview Questions

Outcome	1	2	3	4	5
Scoring	1	2	3	4	5
Usefulness	1	2	3	4	5

Comments:Overall Tool

Outcome	1	2	3	4	5
Scoring	1	2	3	4	5
Usefulness	1	2	3	4	5

Comments:

Please comment on any areas of the tool:

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TELEPHONE (615) 322-7311



Health Care Research Project • School of Nursing • Direct phone 322-2520

Dear Colleague:

Thank you for your interest in our Health Locus of Control Scales. Please excuse this form response, but we have so many inquiries requiring similar replies that we have found this to be an efficient means of disseminating information.

You have our permission to utilize the scales in any health related research you are doing. Our only request is that you keep us informed of any results you obtain using the scales. In that way we hope to continue to serve as a clearinghouse for information about the scales.

We recommend using the more recently developed Multidimensional Health Locus of Control Scales (Health Education Monographs, 6, Spring, 1978, pp. 160-170) over the earlier, unidimensional HLC Scale (Journal of Consulting and Clinical Psychology, 1976, 44, 580-585), since the newer measures are psychometrically superior and potentially more useful.

If you wish to be added to our mailing list or want us to send you additional material, please complete the enclosed interest questionnaire. We hope to periodically send additional material related to use of these scales as it becomes available.

If you have more specific questions, don't hesitate to contact us. Please remember to send us information on any use you make of our scales. We have included a usage questionnaire to facilitate your doing so. We look forward to hearing from you.

Sincerely,

Kenneth A. Wallston, Ph.D.
Professor of Psychology
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School of Nursing
Vanderbilt University
Nashville, TN 37240
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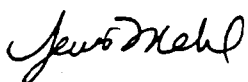
3 November 1985

Mary Jane Harlan
1900 Maplewood Drive
Knoxville, TN 37920

Dear Ms. Harlan:

You have our permission to reprint any material you need for your thesis from the publications of Mindbody Press by Lewis Mehl and Gayle Peterson.

Best wishes,



Lewis Mehl, MD, PhD

LM:MM

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VITA

Mary Jane Spence Harlan was born in Knoxville, Tennessee. She attended elementary school in Dundee, New York, and was graduated from Dundee Central School in 1966. She received a Bachelor of Science degree with a major in Zoology from the University of Tennessee Knoxville in 1970.

Subsequent to twelve years in the work force she entered the Graduate School of the University of Tennessee and received a Masters of Science in Nursing degree with a specialization in parental-child nursing in 1985.