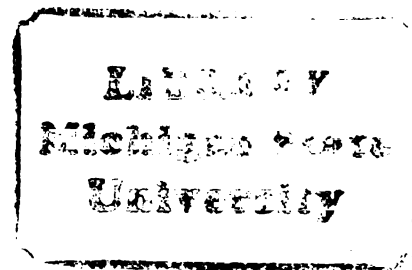




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LOCUS OF CONTROL SCALE

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DEVELOPMENT OF THE FAMILY PLANNING

LOCUS OF CONTROL SCALE

By

Mary Lagerwey Voorman

A THESIS

Submitted to  
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## ABSTRACT

### DEVELOPMENT OF THE FAMILY PLANNING LOCUS OF CONTROL SCALE

By

Mary Lagerwey Voorman

The primary purpose of the study was to construct and test for internal consistency the Family Planning Locus of Control Scale. A secondary purpose was to describe the subjects' responses to the Family Planning Locus of Control Scale.

The study subjects were 77 married women at primary care sites between the ages of 18 and 35 who were not surgically sterilized and whose husbands were not surgically sterilized.

The Family Planning Locus of Control Scale is a six-point Likert type scale which tapped internal, chance, and powerful others family planning locus of control orientations. After factor analysis there were 28 items on the scale.

The major study findings were as follows:

1. A Family Planning Locus of Control Scale was constructed with three subscales, each reliable at the  $r = .6$  level. Correlations between the subscales were negligible.
2. Because of the complexities involved in administering and analyzing the Family Planning Locus of Control Scale, this scale may need revision and shortening before being used in the clinical setting.

To Richard, with all my love

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## CHAPTER I

### THE PROBLEM

#### Overview

According to the 1978 Vital Statistics, 12.0% or 8,124,000 of all live births to women in the United States between the ages of 15 and 45 in 1976 were reported as not wanted or probably not wanted. From 1960 to 1976 there was a decrease in the proportion of births to married women reported as unplanned, but the proportion remains significant. The percentage of planned births to married women has increased from 45% in the early 1960s to 69% in 1975 and 1976. The percentage of mistimed births, wanted later than they occurred, has decreased from 31% to 23%, and the percentage of unwanted births has decreased from 24% to 9% during the same time period (Anderson, 1981).

The significant numbers and percentages of unwanted pregnancies still occurring in the United States suggests that in spite of substantial advances in birth control in the past two decades there are many women who do not practice effective family planning.

It has been documented that large numbers of births in a family and short birth intervals often negatively affect the emotional and physical health of the entire family unit

(Garcia & Rosenfeld, 1977; Manisoff, 1973). Family planning effects marital stability, financial status, childhood mortality and morbidity, intellect, and the emotional health of all family members. It is therefore important for health care workers such as nurses who have contact with and responsibility for clients in their childbearing years to be able to assess needs for, counsel, and teach these individuals regarding family planning.

#### Definition of Problem

The overall objective of family planning nursing care is to help clients set and implement goals for the numbers and spacing of any children they wish to have. Since the major long-term responsibility for family planning rests with the client, it is crucial for nurses to be able to assess how their clients perceive this aspect of their health care, especially their roles and expectations. Clients' success in family planning and their learning needs may be influenced by attitudinal factors. These factors could include the amount of success they believe is possible in family planning, the degree of responsibility they take in obtaining information and in practicing contraception. External factors such as the influence of significant others in their family planning attitudes and decisions, and their tendencies towards or away from "obeying" health care providers may also influence chances for success and learning needs.

The literature on family planning indicates that there are numerous factors which increase the likelihood of unwanted pregnancy. There may be difficulties with availability, accessibility, or acceptability of family planning methods (Mandetta, 1977). Availability implies ease in obtaining services. Accessibility includes availability, and encompasses aspects of the health care system such as cost of services and contraceptives, geographic distance from service sites (Manisoff, 1973), scarcity of family planning services in rural areas (Nye & Berado, 1973), and times in which services are available (Mandetta, 1973). Acceptability encompasses attitudes about family planning services and methods. It may be influenced by personal, cultural, or situational variables such as the dignity with which clients are treated, fear or dislike of certain family planning methods, and religious beliefs about the morality of using "unnatural" contraceptives (Barnett, 1976; Handel, 1973; Manisoff, 1973; Nye & Berardo, 1973). Barnett (1976) believes that acceptability and availability are the main influences on contraceptive use. Socio-economic status indirectly effects contraceptive use: as it increases, age of marriage increases, birth rate decreases, and approval of more family planning methods increases (Barnett, 1976). High levels of misinformation or lack of information have also been noted among various populations of women of childbearing age (Presser, 1977; Snow, Johnson, & Mayhew, 1978). There is little

consensus on why these factors are major obstacles to successful family planning for some women, while others take a more active and effective role in information-seeking and problem-solving to ensure more successful family planning.

### Locus of Control

The concept of locus of control (LOC) was developed by Rotter in 1966 and was originally measured by a 29 item forced choice scale. This scale tapped perceptions and expectancies regarding the ability of people to influence or control outcomes in their lives (Wierenga, 1979), and the extent to which events are perceived as consequences of personal action, and thus under personal control (Lefcourt, 1966). This scale distinguished between those who think that people are in control of and responsible for events and circumstances in their lives, and those who think that chance, fate, or powerful others control people's lives. Rotter (1966) labeled these two groups internals (ILOC) and externals (ELOC) respectively.

Locus of control may effect how one makes decisions and the responsibility one takes for the decision-making process and its outcomes. Locus of control may also influence whether one tends to be an active or passive decision-maker actively seeking information and making a conscious choice or letting circumstances and others make one's choices.

Since Rotter first introduced the concept of locus of control as part of his social learning theory in 1966, there

have been countless studies in which researchers have attempted to describe and predict human behavior based on measures of this characteristic. There have also been numerous attempts to correlate locus of control with various behaviors and attitudes such as family planning. A variety of adaptations of Rotter's original scale have evolved. Previous studies on various aspects of family planning, using an array of locus of control measures, have produced inconsistent and inconclusive results. This may be due to the non-specificity of the scales used. Rotter (1975) recognized this difficulty and recommended the development and use of more specific locus of control measures when one wants to use this concept for practical application or prediction.

If the major limitation of previous studies of locus of control and family planning has been the non-specificity of the measures used, one might be able to construct a more specific measure and make predictions about characteristics of respondents with various family planning locus of control orientations. These predictions could be based on the literature describing more generalized characteristics expected or found in people with these orientations, and on what the literature says about factors which may influence family planning decisions and outcomes. These predictions are discussed in greater detail in Chapter III.

### Purpose of This Study

The lack of a specific and reliable measure of locus of control for family planning has provided the impetus for this study. The primary purpose of this study was to construct and test for internal consistency the Family Planning Locus of Control Scale. A secondary purpose was to describe the subjects' responses to the Family Planning Locus of Control (FPLC) Scale. None of the existing locus of control scales seemed applicable to family planning: one could not use scores from one of these general scales to predict or describe family planning behavior or outcomes, or as a basis for planning and conducting client education and counseling. However, the general attitudes and behaviors which have been found to correlate with certain scores on previous locus of control scales may be relevant to family planning. This could be determined only by using an appropriate, specific, and reliable measure of family planning locus of control.

This study was primarily a methodological one, a first step in the development of a locus of control measure specific to family planning.

### Problem Statement

To construct a reliable Family Planning Locus of Control (FPLC) Scale.



In this study the researcher designed and tested for reliability an adaptation of Wallston, Wallston, and DeVellis' (1978) Multidimensional Health Locus of Control (MHLC) Scale specific to family planning. The Family Planning Locus of Control (FPLC) Scale developed by the researcher was administered to a sample of 77 married women between the ages of 18 and 35. The Family Planning Locus of Control Scale was a Likert type scale with subscales of Internal, Chance, and Powerful Others. Subjects have been described by use of frequency distribution tables and correlations and cross tabulations between internal, chance, and powerful others subscale scores and descriptive categories.

### Definition of Terms

#### Reliable

A reliable scale is one which is internally consistent as determined by the alpha coefficient method. Each of the subscales, Internal, Chance, and Powerful Others, must have had an alpha coefficient of at least  $r = .6$  to have been considered reliable in this study. A scale which is internally consistent is homogeneous, measuring only one characteristic (Polit & Hungler, 1978).

#### Family Planning

Family Planning means decisions and actions to prevent unwanted pregnancies, those wanted later or never. Consistent with the Planned Parenthood Federation of America's

definition of family planning, abortion was not included as a method of family planning in this study (Sutters, 1973). This definition of family planning was written in the instructions to the instrument to ensure that subjects understood this researcher's meaning for the term.

In its broadest sense family planning involves both avoiding unwanted pregnancies and having the desired number and timing of children (Corsa, 1969; Whelpton, Campbell, & Patterson, 1966). For the purposes of this study family planning was defined as the prevention of pregnancies which subjects said were or would be unwanted at the time of conception. The instrument had specific questions to assess whether subjects' pregnancies were planned.

#### Locus of Control

Locus of control is an indicator of the degree of control people perceive they have over events in their lives and their destinies (Rotter, 1966). It is a self-appraisal of the tendency to believe in personal, chance, fate, or powerful others control or causality (Lefcourt, 1976). In this study, locus of control has been measured only as it applied to family planning as described above. In contrast to Rotter's (1966) definition of locus of control as a belief about events and people in general, this researcher used locus of control to depict beliefs about a specific aspect of life and relative to individual subjects' lives only.

### Family Planning Locus of Control (FPLC) Scale

This scale was a Likert type scale developed by the researchers as an adaptation of the Multidimensional Health Locus of Control (MHLC) Scale (Wallston, Wallston, & DeVellis, 1978). It was specific to family planning as defined above, and consisted of three statistically independent but randomly mixed subscales. The subscales were Internal (IFPLC), Chance (CEPLC), and Powerful Others (PEPLC). Based on Levenson's (1973) definitions of internal, chance, and powerful others, the subscales measured belief in personal control over family planning, a fatalistic attitude about family planning, and belief that powerful people or forces determine or strongly influence their family planning behavior and its results. In these definitions the researcher has followed Levenson's (1973) precedence of measuring beliefs about personal control, not beliefs about control of people in general as Rotter (1966) had done.

### Assumptions

In this study several assumptions were made. They were:

1. Subjects' responses to the questionnaire were real and honest.
2. Those administering the questionnaire have followed the printed instructions.
3. Internal, chance, and powerful others FPLC orientations were characterized by attitudes consistent

with those of subjects with internal, chance, and powerful others orientations on the Multidimensional Health Locus of Control Scale.

4. Respondents did not confer with others when responding to the questionnaire.
5. The questionnaire was sensitive enough to measure and identify differences among respondents on the three subscales of chance, internal, and powerful others family planning locus of control orientations.
6. Respondents have indicated in writing any items on the questionnaire which they have found unclear.
7. Questionnaire items could be written which tapped the family planning locus of control dimensions of internal, chance, and powerful others.
8. Family planning is engaged in to some degree by all who have sexual intercourse. Active or passive decisions must be made about whether to use any family planning measures, and if so, what type and when.
9. Subjects' responses to the questionnaire reflected their personal thoughts and feelings, and not the thoughts and feelings of their sexual partner(s).

#### Limitations

Several limitations of this study were identified by the researcher. They were:

1. In this study the researcher did not include a measurement or accounting of the value subjects placed on successful family planning. Although value judgments may be inferred from question 8 on the Family Planning Locus of Control Scale, "Having an unplanned pregnancy would not upset my life that much," the value of success in family planning was not systematically measured. According to social learning theory the value placed on a reinforcement by an individual greatly influences the possibility of the reinforced behavior occurring (Slosnerick, 1975; Wierenga, 1979). "Locus of control beliefs are essentially irrelevant predictors of the behavior of individuals who do not value the outcomes to which the behavior is expected to lead" (Wallston & Wallston, 1978, p. 3). Thus the Family Planning Locus of Control Scale was of limited usefulness in predicting family planning behavior and outcomes, scores may not have corresponded exactly as expected with family planning behaviors and outcomes for women who did not highly value control over their fertility.
2. The subjects who agreed to participate in the study may have been different from those who refused. Therefore the study's results may be biased.
3. The researcher did not test the instrument for validity.

4. The only type of reliability for which the instrument was tested in this study was internal consistency.
5. The results of this study are applicable only to married, non-separated women between 18 and 35 years of age who can read English, are not surgically sterilized, and whose husbands are not surgically sterilized.
6. Only those women who visited the chosen primary care sites during the time when the study was conducted were included as subjects. It is not known whether they differ from other women. Thus generalizability of the findings is limited.
7. Because of the small sample size, this study must be considered a preliminary study, not fully adequate for determining scale reliability.
8. The researcher did not measure or examine the family planning attitudes, behaviors, or locus of control of husbands.
9. Since locus of control, and presumably family planning locus of control, is influenced by experience (Lefcourt, 1976) and may also influence behavior, it was difficult to determine which variable was independent, and which dependent. It was beyond the scope of this study to examine the issue of independent and dependent variable distinctions in looking at relationships between family planning locus of control and family planning behaviors and outcomes.

10. The instrument was administered in waiting rooms of clinic or physicians' offices. Thus subjects may have differed in the amount of time they had to complete it, and the degree of outside interference. This has been partially accounted for by asking subjects to indicate the amount of time they took to complete the instrument and whether they had enough time.
11. The researcher did not assess the stage of pregnancy for those subjects who were pregnant when they completed the questionnaire. Thus one could not assess any influence stage of pregnancy may have had on family planning locus of control.
12. Social desirability of the Family Planning Locus of Control Scale items was not assessed. Thus subjects may have responded in a manner which they believed the researcher or health care providers desired.

This study is presented in six chapters. Chapter I consists of the introduction, statement of the problem, operational definitions, assumptions, and limitations of the study. In Chapter II the researcher includes the conceptual framework of nursing theory relative to family planning and locus of control. In Chapter III the literature relative to the problem is reviewed and discussed. In Chapter IV the researcher provides a description of the research design and methodology. Chapter VI consists of a discussion of research findings,

conclusions, and recommendations, as well as nursing implications for practice and further research.



## CHAPTER II

### CONCEPTUAL FRAMEWORK

#### Overview

In this chapter the relationship between nursing theory, family planning and locus of control are discussed. The nursing theory of Orem (1971 & 1980) provided the basis for this conceptual framework. The researcher also presents a model showing how nursing intervention in family planning could be carried out based on an assessment using the Family Planning Locus of Control Scale. Nursing interventions and implications are presented in greater detail in Chapter VI.

Although the exact number of unplanned pregnancies in the United States can only be estimated, the large numbers of known unplanned births and legal abortions in this country points to a need for nurses to be able to better assist their clients in preventing unplanned pregnancies. It is hoped this study will provide a tool for the assessment of family planning attitudes and perceptions. The results of this assessment could then be used in designing appropriate family planning teaching methods.

Successful family planning depends on numerous factors. Successful family planning is based on an adequate knowledge

base from which to form opinions and make decisions, active choices about desired number and spacing of children, motivation, and proper use of a reliable method of family planning.

As discussed in Chapter I there are also numerous external influences on family planning. Although it was beyond the scope of this study to address these factors in depth, it is important to recognize the complexity of family planning decisions and outcomes, and thus the limitations of a study such as this which can look at only one aspect of family planning in detail. There is still much misinformation and lack of knowledge regarding family planning (Presser, 1977); and the availability, accessibility, and acceptability of various family planning methods will continue to be barriers for many regardless of their level of knowledge (Mandetta, 1977). The nurse can assist his or her clients in identifying these environmental influences and their impact on their family planning, and help them problem-solve on how to overcome these barriers.

#### Family Planning Locus of Control

The concept of locus of control (LOC) was developed by Rotter in 1966, and was originally measured by this 29 item forced choice scale. This Internal-External Locus of Control Scale (I-E Scale) tapped perceptions and expectancies regarding the ability of people to influence or control their lives (Wieringa, 1979), and the extent to which events are perceived as consequences of personal action, and thus under personal

control (Lefcourt, 1966). The I-E Scale distinguished between those who think that people are in control of and responsible for events and circumstances in their lives, and those who think that chance, fate or powerful others control peoples' lives. Rotter (1966) labeled these two groups internals (ILOC) and externals (ELOC) respectively.

Locus of control may effect how one makes decisions and the responsibility one takes for the decision making process and its outcomes. It may also influence whether one tends to be an active or passive decision maker; actively seeking information and making a conscious choice or letting circumstances and others make one's choices.

Since Rotter first introduced the concept of locus of control as part of his social learning theory in 1966, there have been countless studies in which researchers have attempted to describe and predict human behavior based on measures of this characteristic. There have also been numerous attempts to correlate locus of control with various behaviors and attitudes such as family planning. A variety of adaptations of Rotter's (1966) original scale have evolved over the past 14 years. Previous studies on various aspects of family planning, using an array of locus of control measures, have produced inconsistent and inconclusive results. This may be due to the non-specificity of the scales used. Rotter (1975) recognized this difficulty and recommended the development and use of more specific locus of control measures when one

wants to use this concept for practical application or prediction.

If the major limitation of previous studies of locus of control and family planning was the non-specificity of the measures used, one might be able to construct a more specific measure and make predictions about characteristics of respondents with chance, internal and powerful others' orientations on family planning. These predictions could first be based on the literature describing more generalized characteristics expected in people with these orientations, and then researched for their applicability to family planning.

One would expect individuals with internal locus of control to believe that they have power to influence what happens to them (Weirenga, 1979), and to be independent in seeking out information and using their judgment in active decision making in coping with their environments (Phares, 1976). Thus a woman with an internal family planning locus of control perspective might be expected to rely primarily on herself in obtaining family planning information, and in determining the usefulness of this information. The woman may use her health care and social systems primarily as consultants, taking major personal responsibility for proper use of a reliable method of family planning and the outcomes of her family planning. This woman may have unplanned pregnancies due to method failure, but one could expect her to be generally successful in family planning because of her active and informed role.

If an appropriate and specific scale for family planning was developed, one could study and research these factors to see whether these expectations were valid.

The classifications chance and powerful others were originally one classification, external locus of control. Externality implies a perception of events as unrelated to personal behavior, beyond one's control, with rewards controlled by outside forces (Lefcourt, 1966; Rotter, 1966). Predictions about women with chance and powerful others family planning locus of control perspectives would be based on the characteristics of people with external locus of control as well as on the characteristics found in people with chance and powerful others orientations.

A woman with a chance orientation would believe that no one has the power to influence her life, that events occur randomly and without underlying direction or purpose. She would be apathetic and fatalistic (Levenson, 1974). Thus one would predict that a woman with a chance family planning locus of control orientation may believe that there is little she or others can do to satisfactorily control her fertility. She could be an inconsistent or unreliable user of family planning measures, or a non-user. Yet she may wish to have some control over if and when she becomes pregnant. Because of her passive approach to family planning, one would expect her to have minimal family planning information, seldom incorporating the information she does have into her self-care, and having the most unplanned pregnancies.

People with a powerful others locus of control tend to follow the suggestions of influential people in their lives (Wierenga, 1979). These powerful others have considerable influence over their attitudes, decisions and actions (Wienerga, 1979). It is reasonable to assume that powerful others may also include aspects of society such as religious, ethnic, social, and economic values and norms. Thus, since women with a powerful others family planning locus of control orientation are likely to follow instructions from powerful others, they may be successful family planners if they obtain accurate and consistent information and support from what they see as reliable and important sources. It is also possible that they will feel confused if their powerful others offer differing or conflicting opinions or dictates.

It was beyond the scope of this study to attempt to predict family planning behavior or outcomes based on responses to the Family Planning Locus of Control Scale. According to social learning theory, the conceptual basis for locus of control, accurate prediction of behavior must be based on an assessment of the psychological structure of the situation, the reinforcement value of the outcome, and the expectancy that the outcome or reinforcement will occur (Phares, 1976). This fact, as well as the complexity of family planning, may account for some of the inconsistencies found in studies of the relationship between family planning and locus of control as discussed in greater detail in Chapter III.

### Nursing Use of Locus of Control

Although it may be interesting to try to predict family planning outcomes based on an appropriate family planning locus of control scale, such an exercise would have little direct applicability or usefulness for the nurse in clinical practice. The clinical nurse is more likely to be interested in being able to assess her clients in areas which could affect his or her nursing intervention. Therefore one of the primary purposes of this study was to help the nurse in clinical practice assess clients' perspectives on family planning so that he or she can use this assessment in the planning and implementation phases of the nursing process. Based on Orem's model (1971 & 1980) much of this intervention in family planning will be in the form of client education and support.

Although it is beyond the scope of this study to examine the effects of applying various interventions in working with women with differing family planning locus of control orientations, one can use what is known about locus of control to make recommendations for client education and support. Although little research has been done regarding the use of locus of control scale results for client education, it has been shown that group therapeutic approaches consistent with locus of control orientation yield more positive results than group approaches in which locus of control is not considered. Groups in which the therapeutic approach is congruent with the clients' locus of control and in which clients are grouped

according to their locus of control orientation are more likely to meet their goals (Arakelian, 1980; Saltzer, 1978). Thus one can postulate that a nursing approach in which the nurse is cognizant of his or her clients' family planning locus of control, and plans his or her education and support accordingly, would assist clients in meeting their family planning goals.

Nurses can use locus of control assessments for health education in at least three ways: to evaluate health education programs in terms of their impact on locus of control, to teach clients a more internal locus of control, and to match one's educational approach to the locus of control orientation of one's clients (Wallston & Wallston, 1979). One might wish to try to teach clients a more internal locus of control because internality is often associated with positive health behaviors. The implications for practice presented in this study and discussed later in conjunction with Figures 1 and 2 focus on the third use stated, that is, planning a nursing approach congruent with clients' locus of control. For example, the nursing approach for a client with a chance FPLC orientation would not begin with provision of information, but with helping the client see more cause and effect between her behavior and family planning outcomes. This researcher has not attempted to study the effectiveness of various nursing approaches in family planning, but has attempted to provide a tool for family planning locus of control assessment from which approaches can be planned. A



more thorough discussion of possible nursing approaches based on the literature and personal experience is presented later in this chapter and Chapter VI.

### Nursing Theory

The practice of nursing is ideally suited for family planning intervention. Nursing practice is concerned with "maintaining and promoting health of the whole person as a unity" (Rogers, 1970, p. vii) and "designing, providing, and managing systems of therapeutic self-care for individuals within their environments of daily living" (Orem, 1971, p. 41). Later Orem stated that "nursing is required whenever the maintenance of continuous self-care requires the use of special techniques and the application of scientific knowledge in providing care or in designing it" (1980, p. 7). It would not be inconsistent to expand Orem's concept of nursing to encompass activities which enhance self-care capabilities.

Since nursing's primary interest and goal is health, one must understand the concept of health to understand the goal of any nursing intervention. In 1971 Orem defined health as "the state of wholeness or integrity of the individual human being, his parts, and his modes of functioning" (p. 42). In her discussion of self-care, she implied that health means the ability to perform the self-care activities of daily living or to overcome obstacles to this self-care. Although Orem's 1971 definition of health encompassed all spheres of a person's functioning on a daily basis, a more complete definition

of health must also indicate that the individual is functioning at more than a sustenance level, and is reaching some of his or her potential. Orem's 1980 definition of health is broader, incorporating the concepts of soundness and wholeness which "in regard to health, signify human functional and structural integrity, absence of genetic defects, and progressive integrated development of a human being as an individual unity moving toward higher and higher levels of integration" (p. 121). Health has physical, psychic and intellectual aspects and is placed in a developmental context. This researcher has defined health as a dynamic state of integrity in all spheres of an individual's life so that he or she can use his or her resources to function at the highest possible level on a daily basis.

Family planning is part of the social, emotional and physical health of individuals and families. Successful family planning requires effective use of health resources, personal and family responsibility for health, deliberate action, and health goals that go beyond absence of illness, merely adequate levels of functioning, and primarily physical well-being.

Orem's framework (1971 & 1980) which formed the basis for this study has a unique concept of self-care as its cornerstone. Because Orem's definition of self-care differs significantly from many found in the literature, one must delineate her use of the concept before attempting to apply it.

Levin's (1978) definition of self-care was typical and contrasted with Orem's: "a process by which a layperson can function on his own behalf in health promotion and prevention and in disease detection and treatment at the level of the primary health resource in the health care system" (p. 17). From this perspective individuals perform self-care within a system whose center is the established health care structure. They provide health care for themselves which one might expect the health care system to traditionally provide in a western society. Levin's definition of self-care was similar to the current lay self-care movement's use of the term, and presupposed a knowledgeable client who was self-motivated and who selectively and assertively used the health care system.

In contrast, Orem defined self-care as part of everyone's health related activities of daily living. Self-care activities have an impact on one's health, but need not be performed specifically or purposefully to enhance one's health. Orem defined self-care as "the practice of activities that individuals personally initiate and perform on their own behalf in maintaining life, health and well-being" (1980, p. 35). Instead of clients' actions substituting for those of the health care system, the clients' self-care in the norm, and health care providers substitute for and enhance clients' self-care as needed. Clients need nursing care for support and education, and to compensate for deficiencies in their ability to perform self-care. One can expand on this to also

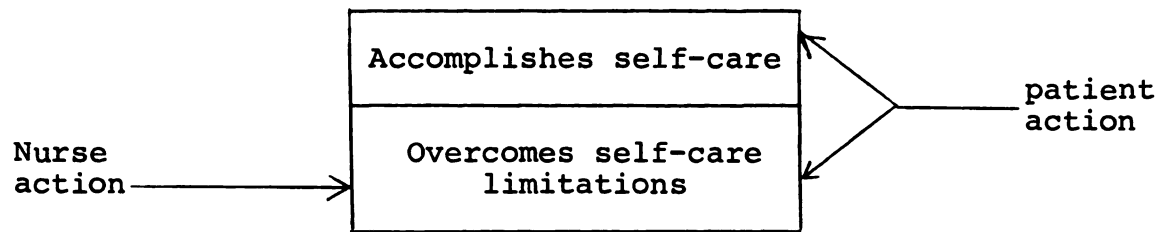
see a need for nursing care when there is potential for disruption in self-care ability. Part of nursing care is the assessment of actual and potential disruptions and deficiencies in self-care capabilities. Nursing can also offer care which enhances the ability of clients to adequately perform self-care.

In 1971 Orem distinguished between two kinds of self-care, universal and health-deviation. Universal self-care is focused on basic daily human needs such as physical hygiene and emotional requirements. Health-deviation self-care is action to seek and participate in health care from an external source. It is needed when one must depend on others for the execution of one's universal self-care needs or for life itself. In the case of health-deviation self-care, health care providers play a compensatory role.

In Orem's second edition (1980) developmental self-care needs were distinguished from universal self-care needs. Developmental self-care needs can be categorized as those that support life processes and promote development, and those that prevent, mitigate or overcome negative effects of developmental changes, crises or conditions affecting development. Health care providers play a supportive-educative role in meeting universal and developmental self-care needs. Family planning is a developmental self-care need, as it supports and promotes health development in all spheres of life for individuals and their families.

Nursing intervention in family planning is primarily supportive and educative (see Figure 1, "Nursing Systems in Family Planning"). In almost all cases the client and her partner are responsible for seeking out and practicing family planning, performing most of the decision making and direct action aspects of this self-care. Even in instances of sterilization in which there is little long-term responsibility for the client, it is the client's responsibility to make the decision for this form of family planning, and to obtain this health care. The supportive and educative nursing system involves helping the client make informed decisions about family planning and carry out these decisions with knowledge and skill. There may be guidance, support, teaching, and periodic consultation by the nurse (Orem, 1980). The support and education offered the client is based on an assessment of the client's needs, and is placed in the context of the client's life-style, beliefs and values. Nurses may assist clients using the supportive-educative nursing system of family planning health care by guiding, supporting, and sustaining self-care efforts, providing an environment conducive to meeting self-care needs, and by teaching (1980, p. 101).

Since some methods of family planning such as oral contraceptives necessitate an examination and prescription from a health care provider, the partly compensatory nursing system is also used in family planning as the nurse may provide care



### SUPPORTIVE-EDUCATIVE SYSTEM

(from Orem, 1971, p. 78)

Assisting techniques in the supportive-educative nursing system:

support  
guidance  
provision of a developmental environment  
teaching  
consultation

(Orem, 1971, p. 79; 1980, p. 98)

Figure 1. Nursing System in Family Planning.

for the client which she cannot provide for herself. Although this researcher recognizes that family planning nursing interventions are broader than the supportive-educative nursing system, her focus was solely on the supportive-educative form of nursing intervention.

In both the supportive-educative and compensatory nursing systems the nurse functions on intellectual and action levels with the client to identify needs for nursing care, to design and plan this care, and to initiate and conduct action towards mutual goals (Orem, 1980, pp. 101-103). The nurse and client approach the health care situation with their individual perceptions, make judgments and act throughout and beyond the immediate nursing situation. A transaction occurs in which each actively participates to assess and define needs and goals (King, 1981). In this model, both the nurse and the client take initiative in decision making regarding the means and ends of health care. Orem's and King's frameworks are frequently used as models for nurses to use in understanding clients' perceptions and goals. Part of any nursing assessment must be to assess these perceptions, goals, and the role the client is able and willing to take in his or her self-care.

#### Usefulness of the FPLC Scale in Planning Nursing Interventions

The Family Planning Locus of Control Scale was intended to aid the nurse in his or her assessment of clients'

perceptions regarding family planning. It was an attempt to measure an aspect of women's perceptions regarding family planning self-care. It was not an attempt to measure capabilities for any self-care as defined by Orem (1971 & 1980). This researcher assumed that any client who comes to the health care system for family planning care perceives that she needs this care, and that therefore it is appropriate for the nurse to intervene here. He or she can use the FPLC Scale results as part of a data base from which to make an assessment and plan care.

By looking at the flow diagram model, one can see that nursing interventions leading to successful family planning may vary depending on the assessed family planning locus of control orientation. This model was by necessity simplistic. It did not show that clients may have tendencies towards more than one family planning locus of control orientation at a given time and/or may change orientation over time. This change could presumably be secondary to nursing intervention.

Another limitation of this model is that it did not demonstrate the numerous major or incidental influences on family planning such as attitudes of significant others or finances which may imping on family planning decisions and outcomes irrespective of clients' family planning locus of control and nursing interventions.

Although the model showed several nursing interventions being repeated until the desired outcome is achieved, one must assume and hope that the nurse would vary the specifics



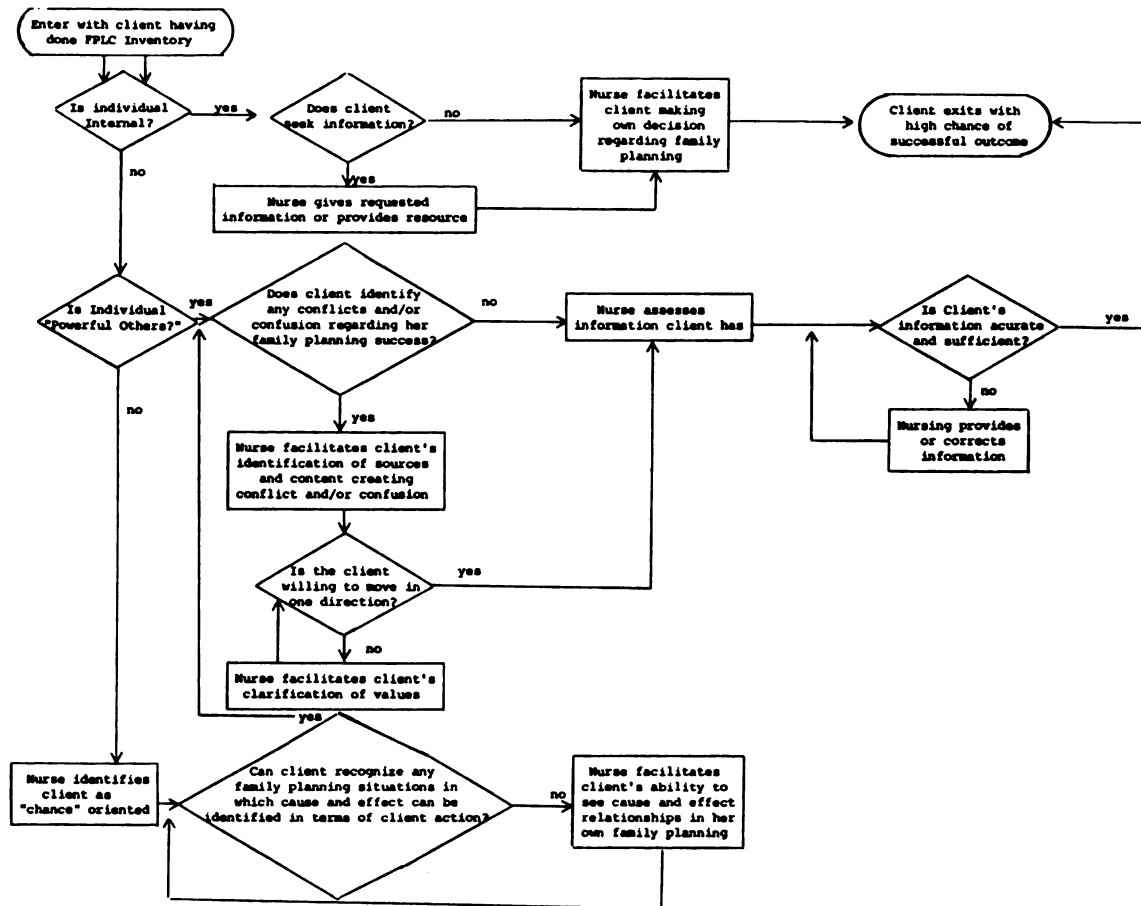


Figure 2. Nursing Intervention Based on FFLC Inventory.

of his or her approach with subsequent interventions.

Although this varying of specifics in repeated attempts to attain a single desired outcome was beyond the scope of this model and this discussion, one needs to consider this assumption in any attempt to apply the model in clinical practice.

According to the diagram if the client had an internal family planning locus of control orientation, the nurse would first ask whether the client is seeking information from which to make a family planning decision. If so, the nurse could provide the information or suggest a resource from which the client could obtain the information. Once the client had the information the nurse could facilitate the client's decision making, for example, by helping the client list advantages and disadvantages of the choices he or she had.

If the client had a powerful others family planning locus of control orientation, the nurse would first assess whether there were any conflicts or confusion regarding the client's family planning which might influence her choices or chances of successful family planning. Since a powerful others type of person relies heavily on others for guidance and decisions (Wierenga, 1979), he or she may be most susceptible to confusion and conflicts from differing messages from various powerful others. If this is the case, the nurse could facilitate the family planning client's identification of sources and content of the conflict and/or confusion, and assess whether the client is willing to choose a direction

in which to move. If the client was unable or unwilling to choose a single direction, the nurse could then facilitate a clarification of the client's values until the client could and did choose to act congruently with the values she chose as most important. At this point or if there were no identified conflicts or confusions regarding family planning the nurse could assess the client's information for accuracy and sufficiency, and provide or correct information as needed.

In working with a client with a predominantly chance family planning locus of control orientation the nursing interventions could be based on the assumption that this client may have difficulty recognizing cause and effect in her family planning behavior and outcomes. This can be assessed, for example, by asking how the client has or has not been able to control her fertility in the past. This history could be used to reinforce the control the client does have in family planning as the nurse facilitates the client in identifying the results of prior family planning decisions and actions. Recognizing again that this model is simplistic, this researcher assumed that clients eventually achieve successful family planning given time and appropriate nursing interventions. Once the client recognized that she was able to significantly influence outcomes in her family planning, the nurse could assess whether the client was willing and able to make a decision to move in a single direction with her family planning choices and actions. From this point the nurse would intervene as she would with a powerful others type of client.

The goal of the nursing assessment and subsequent interventions is successful family planning as defined by the client. In this model the nurse does not define for the client what successful family planning is, but assists the client in obtaining information, clarifying values and acting consistently to achieve her goals.

It has been recognized that this model was limited by this researcher's operational definition of family planning which excluded actions to promote fertility. Thus success in family planning must be placed in the context of avoidance or delay of any pregnancies which a woman wishes to prevent or postpone, not in the context of success in having the exact number and timing of children desired. It was hoped that this study will help nurses gain information to assist their female clients in preventing or postponing unwanted pregnancies and thus in achieving more successful family planning.

## CHAPTER III

### LITERATURE REVIEW

#### Overview

In this chapter, literature relevant to the major areas of study is reviewed. These areas are trends in and influences on family planning and locus of control. Self-care as related to locus of control is also included. A major focus of the review of family planning literature is on married women in the United States, but relevant studies on single women have also been included. It is beyond the scope of this study to examine or review all of the research that has been done on locus of control. Therefore the researcher is limiting this review of locus of control literature to that research most relevant to this study: the history and development of the concept and the development and use of locus of control scales relevant to the study of family planning behavior, attitudes, and outcomes. Contributions from nursing literature are integrated into this chapter to demonstrate the relationship between self-care and locus of control. In this way the researcher has demonstrated and established the interrelationship of the study variables, the rationale for the development of the Family Planning Locus of Control Scale,

the purpose, usefulness, and limits of locus of control measures, and the need for this study.

### Family Planning: Trends

In this section the researcher presents studies which illustrate current trends in the planning status of pregnancies in the United States.

Although there have been substantial advances in birth control technology and availability in the past two decades (Jones, et al., 1980), the literature clearly shows that there are still major interferences with successful family planning for many women. There are significant numbers and percentages of unplanned births and pregnancies, and the numbers of legal abortions has continued to rise since 1973 (Henshaw, et al., 1981). In this section the researcher presents statistics on family planning outcomes in the United States and reviews studies which show some of the factors which influence family planning behavior and outcomes.

According to the 1978 Vital Statistics, 12.0% or 8,124,000 of all live births to women in the United States between the ages of 15 and 45 in 1976 were reported by their mothers as being not wanted or probably not wanted. The Vital Statistics do not specify whether the classification of "not wanted or probably not wanted" includes mistimed births, that is, those that were wanted later than they occurred.

Anderson (1981) reported that from 1960 to 1976 the percentage of births to married women reported as unplanned has

decreased, but remains significant. This conclusion was based on the 1976 National Center For Health Statistics of the United States Department of Health and Human Services. The sample consisted of 15-44 year old married women, and focused on live births which had occurred in the 12 months proceeding the interview. The percentage of planned marital births has increased from 45% in the early 1960s to 69% in 1975-1976. During the same time period the percentage of mistimed births has decreased from 31% to 23%, and the percentage of unwanted births has decreased 24% to 9%. Anderson (1981) stated that without unwanted fertility the 1975 and 1976 marital fertility rates would have been 1.72 births per woman instead of 1.91.

The number of legal abortions, most of which presumably were for unwanted pregnancies (Tietze, 1979), has grown since 1973 when the Supreme Court ruled that abortions were legal. There were 774,000 legal abortions in 1973, 1,270,000 in 1977 (Tietze, 1979), 1,400,000 in 1978, and an estimated 1,500,000 in 1979 (Henshaw, et al., 1981).

Since almost all married couples in the United States use some method of family planning to control or limit family size at some time during their marriage (Manisoff, 1973; Tanis, 1977), one might assume that unintentional pregnancies are the result of failure or improper use of a chosen method of family planning. However, 3.4% of "preventers" and 9.7%

of "delayers" abandon use of any method of family planning within one year of initiating usage (Vaughan, et al., 1977). Furthermore, for unintentional births in the United States from 1970-1972 "three-fifths were conceived while no contraception was being used" (Tietze, 1979, p. 186). Clearly, if contraceptives are not being used by many who do not wish to conceive, something besides failure or improper usage of a method of family planning or lack of motivation accounts for many unintentional pregnancies and births. The influences of plans for future pregnancies, misinformation, lack of information, and sociological factors are presented in the following section.

### Factors Influencing Family Planning

#### Introduction

Because family planning is a complex and personal topic, there is potential for numerous confounding variables. Specific and general factors which may influence family planning are referred to in the literature. For example, Mandetta (1977) stated that contraceptive use is influenced by the three As of availability, accessibility, and acceptability. Availability implies ease in obtaining services. Accessibility includes availability and encompasses aspects of the health care system such as cost of services and contraceptives, geographic distance from service sites (Manisoff, 1973), scarcity of family planning services in rural areas (Nye &



Berardo, 1973), and times in which services are available (Mandetta, 1973). Acceptability encompasses attitudes about family planning services and methods of contraception. It may be influenced by personal, cultural, or situational variables such as the dignity with which clients are treated by health care providers, fear or dislike of certain family planning methods, and religious beliefs about the morality of using "unnatural" contraceptives (Barnett, 1976; Handel, 1973; Manisoff, 1973; Nye & Berardo, 1973). Barnett (1976) believed that acceptability and availability are the main influences on contraceptive use. Additional factors could include a history of previous induced or spontaneous abortions, one's physical and emotional health, and the health of one's family (Barnett, 1976). In the following sections, the influence of plans for future pregnancies, misinformation, lack of information, and sociological factors are presented.

#### Influence of Plans for Future Pregnancy

Many descriptive studies have shown that plans for future pregnancies have a significant influence on one's success in family planning. As observed by Vaughan et al. (1977), intentions to delay versus intentions to prevent pregnancy seem to influence discontinuation of contraceptive usage. Rates for unintentional pregnancies, those defined by the mother as wanted either later or not at all, vary for those who wish to delay versus prevent pregnancy. Seven percent of married

"delayers" and 4% of married "preventers" in the United States became pregnant each year from 1970 to 1973 (Vaughan, et al., 1977). Jones, et al. (1980) found that white married women under 25 years of age who wished to delay a pregnancy had a .11 probability of pregnancy within a year. In contrast, white "preventers" had a .07 probability of pregnancy in one year. Among white married women of greater than 25 years of age, "delayers" had a .12 probability of pregnancy within a year, and "preventers" a .02 probability. Thus "delayers" may be less consistent in their use of family planning methods. The value of avoiding a pregnancy may have predictive value regarding the chance of an unplanned pregnancy.

#### Influence of Misinformation and Lack of Information

Misinformation or a lack of knowledge may interfere with successful family planning. In interviewing a random stratified sample of 358 black and white first-time mothers ages 15-29 in an urban community, Presser (1977) found that only 30% gave correct answers in two successive interviews to a question regarding pregnancy risks. "Women were asked when they thought they were most likely to become pregnant: (a) Right before her period, (b) During her period, (c) Right after her period begins, (d) About two weeks after her period begins, (e) Anytime during the month, (f) Don't know" (p. 112). Percentages of women with correct responses were higher among women who were white, older, or more highly educated, and were

highest for women who had used oral contraceptives or an IUD before motherhood but were currently using less effective methods of contraception. Percentages of correct responses were lowest among women who had used no method before motherhood and were currently using oral contraceptives or an IUD. Presser concluded that "women currently using less effective methods are more knowledgeable about pregnancy risks, perhaps because they have a greater need to know" (1977, p. 115). He also suggested that increased family planning knowledge before motherhood could result in a lower percentage of unplanned pregnancies.

Miller (1975) listed reasons for unplanned pregnancies given by 642 women who had obtained abortions in California. A majority of the reasons checked on a list written by the researcher related to misinformation or a lack of information regarding the menstrual cycle, risk of pregnancy, proper use of their method and side effects. Since the questions were not open-ended, one might conclude that researcher bias may have had an impact on responses. Again, lack of knowledge or misinformation may have contributed to unplanned pregnancy.

Zelnik and Kantner (1979) studied sexually active women aged 15-19 using data from two national probability household sample surveys (1971 & 1976). Although they only studied adolescents, their results were consistent with Presser's (1977) findings. They found significant misunderstanding about what time of the month one was most likely to become

pregnant, and whether young age or infrequent intercourse prevented pregnancy. These adolescents were thus at a high risk for unplanned pregnancies.

Misinformation may also result in false objections to various methods, such as the belief that the use of any contraceptive will interfere with sexual enjoyment or cause sterility (Manisoff, 1973). Ineffective "folk methods" of family planning such as coitus interruptus, post-coital douching, prolonged lactation, and use of feminine hygiene products are also relied on to prevent unwanted pregnancies (Clancy & Brown, 1979).

The literature consistently points to the importance of correct and adequate family planning knowledge for successful family planning. The researcher has incorporated items assessing subjects' attitudes towards obtaining and evaluating family planning information in the Family Planning Locus of Control Scale. Adequacy and accuracy of this information was not assessed.

In the following section, studies showing the relationship between various sociological factors and family planning are reviewed.

### Sociological Factors

Various sociological factors have been shown to influence family planning. These include educational levels, religious affiliation, race, and socio-economic status.

Sixty-seven percent of the births to women with a high school diploma are planned, while 77% are planned among women with more than a high school diploma. There are 100 births per 1,000 women per year among women with less than a high school diploma versus 94 births per 1,000 women per year among women who have more than a high school diploma (Anderson, 1981).

Roman Catholics both desire and have larger families than non-Catholics (Anderson, 1981; Barnett, 1976; Coombs, 1978; Handel, 1973). Hispanics also desire and have larger families than non-Hispanics. Blacks have but do not desire larger families than do whites. A greater percentage of births to blacks are unplanned (Anderson, 1981).

As will be discussed later in this chapter, race may also effect the relationship between locus of control and family planning outcomes.

Barnett (1976) noted the impact of sociological factors on contraception. He stated that with increased socio-economic status, age of marriage increased and birth rate decreased. Education indirectly resulted in increased approval of family planning. Anderson et al. (1977) studied 2,059 women ages 14-44 of all marital statuses, using a household probability sample. They found that fertility increased with decreased socio-economic status, secondary to an increased number of unplanned births, especially among the young and unmarried.

Social class apparently correlates with actual family size, but not with desired family size (Anderson, 1981; Nye & Berardo, 1973). Women from all social classes in the United

States report the same number of desired births per woman (1.9), but those in lower social classes are more likely to exceed the desired number. Desired family size has been correlated negatively with effective use of contraceptives, and varies with religious beliefs, race, and social class (Barnett, 1976; Combs, 1978; Handel, 1973).

Income seems to have an impact on birth rate. There are 193 births per 1,000 women per year among women at less than 100% poverty, and 66 births per 1,000 women per year at 200% poverty (Anderson, 1981).

Because sociologic factors may significantly effect several aspects of family planning, they must be assessed in any attempt to measure family planning attitudes, behavior, or outcomes. Educational levels, religious affiliation, race, and income have been assessed in this study and correlated with family planning behavior and outcomes as well as with family planning locus of control orientation.

### Summary

As has been shown in the studies discussed above, the literature on family planning indicates that there are numerous factors which may increase the likelihood of an unwanted pregnancy or birth. However the literature is less clear-cut in indicating why many of these factors are major obstacles to successful family planning for some women, while other women take a more active and effective role in information-seeking and problem-solving to ensure more successful family

planning. This study was an attempt to show how women vary in their approaches to family planning, and how the health care provider could assess these differences to minimize obstacles to his or her clients' successful family planning.

In an attempt to discover why these factors create more family planning difficulties for some women than for others, some researchers such as Nye and Berardo (1973) have discussed the possible effect of a passive fatalistic attitude towards life on success in family planning. They suggested that a fatalistic, passive attitude regarding sexual intercourse, its outcomes, and one's overall ability to control and plan one's life, ambivalence about becoming pregnant, and difficulties in communication with and cooperation from one's sexual partner regarding prevention of pregnancies may hinder successful family planning.

Rainwater (1977) also noted that the fatalistic world view of the poor may contribute to their ineffective family planning behavior. In the next section the researcher will discuss locus of control as one measure of general attitudes such as fatalism, passivity, and control over outcomes.

### Locus of Control

#### Development of the Concept and Original Scale

The concept of locus of control (LOC) was introduced by Rotter (1954). Locus of control is an indication of the degree of control people believe they have over their lives

(Levenson, 1974). It is based on Rotter's (1954) conceptualization of social learning theory. According to this social learning theory, goal-directed behavior is a function of the value placed on specific available reinforcers, beliefs about whether one's actions in a certain situation will produce desired reinforcers, and the meaning of the situation to the individual (Phares, 1976, p. 14).

Individuals have a choice in how they behave. They consider both the degree of preference for a particular reinforcement (Wierenga, 1979), and the perceived likelihood or probability of the outcome occurring in deciding on what course of action or inaction to follow. These two factors are also known as reinforcement value and expectancy respectively. An individual's consistent beliefs and perceptions which influence his or her behavior in a wide variety of situations are called generalized expectancies (Rotter, 1966). Locus of control, as defined by Rotter (1954), is a learned generalized expectancy, based on past experiences (Phares, 1976). A generalized expectancy is relatively stable over time and place. This is in contrast to situational expectancies which are relative to specific events.

Although locus of control is a generalized expectancy, behavioral decision are partially based on the situational variables of a specific reinforcement, and the expectancy of an outcome in a particular situation (Rotter, 1966; Hjelle, 1971). Thus one would anticipate that locus of control would be of limited value in attempts to find a simple factor which



can be assessed to predict behavior. For this reason the researcher has chosen to focus the application of this study on how the nurse can use FPLC scores in planning his or her family planning interventions, rather than on attempting to predict family planning behavior or outcomes based on this scale.

Rotter (1966) developed a 29 item forced choice scale to tap perceptions and expectancies regarding the ability of people to influence or control outcomes in their lives (Wierenga, 1979), and the extent to which events are perceived as consequences of personal action and therefore under personal control (Lefcourt, 1966). This scale separates, along a continuum, those who think that people or personal factors are in control of and responsible for events and circumstances in their lives, and those who think that environmental factors of chance, fate, or "powerful others" control people's lives. Rotter (1966) labeled the ends of the continuum "internals" (ILOC) and "externals" (ELOC) respectively. Possible scores range from 0-23, so that a more external person will have a higher score. Rotter and others often used the terms as if there were two separate and distinct groups, not a continuum of internal and external locus of control. Rotter did not attempt to measure individuals' beliefs about their control over events. Instead he measured the broader belief about the degree of control all people in general have over events in their lives.

The concept of locus of control has received extensive and broad study. The Internal-External Locus of Control Scale has been analyzed, adapted, and applied in various attempts to describe and predict human behavior. The Internal-External Locus of Control Scale is referred to as the I-E scale in most of the literature, and will also be here.

In the following section studies examining the reliability and validity of the Internal-External Scale are reviewed.

#### Reliability and Validity

The reliability and validity of the I-E Scale has been studied and debated. Hersch and Schiebe (1967) found that among Connecticut Service Corps members' performance on the I-E Scale was consistent with measures of maladjustment and self-descriptions suggesting validity of the scale. Internal individuals are likely to describe themselves as active, striving, achieving, powerful, independent, and effective.

Externals occasionally described themselves in a similar manner, but usually described themselves in somewhat opposite terms. "The data in this report supported the conclusion that internality is consistently associated with indexes of social adjustment and personal achievement" (1967, p. 613). This demonstrated criterion-related validity of the I-E Scale, and implied correlation with another valid measure or criterion of the same concept.

Different measures of the internal consistency of the I-E Scale vary from 69% to 79%. This indicates that this scale is reliable, with each subject's answers usually consistent (Arakelian, 1980, p. 28). The I-E Scale may lack discriminant validity as shown by correlations with measures of social desirability (Arakelian, 1980). Individuals scoring high on measures of social desirability have traits of conformity to external pressure, other-directedness, responsiveness to perceived situational demands, and susceptibility to effects of social reinforcers. They will tend to do and say what they perceive as socially appropriate in order to obtain social approval. They expect failure regarding goal-achievement, have difficulty assuming independence, and are often unable to recognize and deal with hostility (Windwer, 1977, p. 97). Some researchers have explored a possible relationship between measures of locus of control and the response set of social desirability. Studies examining this relationship are reviewed in the following section.

### Social Desirability

Several researchers have examined the relationship between social desirability and locus of control. Rotter (1966) recognized the potential impact of social desirability as a confounding variable, and thus removed from his Internal-External Scale all items which he found to have a high correlation with the Marlowe-Crowne Social Desirability Scale (1964). The Marlowe-Crowne Social Desirability Scale "was

designed to assess the need to gain approval from others by describing oneself in a socially favorable light" (Hjelle, 1971, p. 808). Thus if one believed that it was more socially desirable to be an internal one might agree with internally worded statements regardless of whether one agreed with their content. "The obtained correlations between these two scales range from  $-.07$  to  $-.35$ , with a median value of  $-.22$ " (Hjelle, 1971, p. 808).

Although Hjelle (1971) admitted that there is support for Rotter's (1966) claim that he adequately minimized the effect of social desirability on the I-E Scale, he argued that the evidence is far from conclusive. He noted that "Bernhardson (1968) found that those I-E items which subjects perceived to be most socially desirable tended to be the same items which were endorsed under standard instructions" (1971, pp. 808-809).

In three studies of students at Roman Catholic colleges ( $N=100$ , 77, and 99) Hjelle (1971) administered the Marlowe-Crowne Social Desirability Scale and Rotter's Internal-External (I-E) scale, establishing the social desirability value (SDSV) for each item on the I-E Scale and the correlations between the two scales. The Pearson product-moment correlations between the two scales was  $r = -.22$ , and the "correlation between the SDSVs and the probability of item endorsement values . . . was  $r = .43$  ( $df = 44$ ,  $p, <.01$ )" (p. 815). Although Hjelle concluded that "there is not decisive evidence in the present study to suggest that the tendency to describe oneself in socially desirable terms is related to the total spectrum of

I-E scale scores or to circumscribed groups of extreme I and E Ss" (p. 812), he also suggested that the I-E scale may have greater influence on responses to the I-E scale than Rotter realized. "The social desirability factor may obscure systematic individual differences in perceived locus of control" (p. 815). For example internals tended to agree with more socially desirable items than externals did. These findings cast doubt on the significance and meaning of this measure of locus of control, and imply that the I-E scale may be so affected by the confounding variable of social desirability that it does not measure the construct it intends to measure.

Cone (1971) also examined the relationship between locus of control as measured by the I-E scale and social desirability. He used a different measure of social desirability, the Edward's Social Desirability Scale (SD), and his conclusions contrasted with those of Hjelle. He studied five groups of Army personnel, correlating their scores on the I-E scale with their scores on the SD scale. The five groups consisted of "Army mental health clinic outpatients (N=102); two groups of Army stockade prisoners (N=110 and 98); Veterans Administration Hospital alcoholic in-patients (N=99); and a group of new careers participants (N=48)" (1971, p. 449). Data from these studies showed that correlations between the two scales were negative ( $r = -.70$ ,  $r = -.47$ ,  $r = -.46$ ,  $r = -.32$ , and  $r = -.29$ ) and significant at the  $p < .025$  level of greater for all five samples. Thus individuals with strong traits of social desirability also tended to be internals on Rotter's I-E scale.

Cone (1971) strongly cautioned against using this data to conclude as Hjelle did that social desirability is the same construct as, or a confounding variable in, measures of locus of control. Instead Cone suggested that internals may score higher in social desirability because they may believe that they can influence others to provide reinforcers by "behaving in socially desirable ways" (p. 449). This conclusion was supported by other studies which have shown that internals were more likely to perceive their environment accurately and behave accordingly than did externals (Segal & DuCette, 1973).

The conclusions drawn from these studies are inconclusive, but they do indicate that the I-E scale and possibly other locus of control scales may lack discriminatory validity, and results must be interpreted with caution. This researcher has not attempted to correlate the Family Planning Locus of Control Scale with social desirability, but cautions the reader to consider the potential influence of this factor in interpreting and using the scale. Studies which explore the various dimensions which may be present within locus of control are presented in the following section.

#### Dimensions Within the I-E Locus of Control Scale

There have been many questions regarding the unidimensionality of the I-E scale. Hersch and Schiebe (1967) studied measures of maladjustment and self-descriptions of the 1965

and 1966 Connecticut Service Corps, and found that internals were much more homogeneous than externals. Thus they argued that there may be sub-groups of externals such as those with beliefs in luck or fate, feelings of persecution, optimism, pessimism, inferiority, or weakness, or those in highly competitive social situations where the success of their efforts may be greatly influenced by others' actions (1967).

Factor analysis of the I-E scale has shown a second factor of control ideology regarding people in general (Arakelian, 1980). Collins (1974) noted four factors in addition to the one given by Rotter: a just world, a predictable world, a difficult world, and a politically responsible world. Guren et al. (1969) delineated factors of personal control, control ideology, system modification, and race ideology. Hochreich (1974) distinguished between a true or congruent ELOC with characteristics of less trusting, more striving, decreased expectancies for success, and an external front to protect against failure or negative feedback. He concluded that the externals as measured on the I-E scale are multidimensional. Although many authors argue for the multidimensionality of the I-E scale, there are currently two approaches taken on this issue: that Rotter's I-E scale is the best measure of locus of control because it is a generalized measure; and that more specificity is needed to explain for unexpected results often found in using the I-E scale (Arakelian, 1980).

Levenson (1972 & 1974) took the observed lack of internal consistency among externals one step further, and hypothesized that externals could be divided into those who believe that the world is ordered, but that powerful others and not themselves are in control; and those who believe that the world is not ordered and that no one is in control: events are the result of chance or fate. She constructed three new scales (Internal, Powerful Others, and Chance) with six items each to measure the three dimensions she hypothesized were present within locus of control. Levenson also hypothesized that one would expect different behaviors and cognitive thinking from internal, powerful others, and chance oriented individuals. Data on three sets of subjects (N=165 consecutive admissions to a state mental hospital, 1972; N=96 with 62 involved with an anti-pollution group and 31 controls, 1974; and N=329 male undergraduate students, 1974) showed that a low score on internality did not correlate with a high chance score. She concluded that internality and chance are not merely opposite attitudes on one dimension, but that locus of control is a multidimensional concept. In the study of the anti-pollution group (1974) internality was found to correlate with involvement in the group for males only. Levenson suggested that females may be conditioned to be more passive in our culture, finding fate or chance for reassuring. If this is true, there may be implications for interpretation of the FPLC scale since it has been administered to females only.



The subscales of Internal, Chance, and Powerful Others consisted of Likert 6-point scales, and pertained to subjects themselves, not to people in general. They were found to be statistically independent. In the study of the anti-pollution group, the powerful others scale correlated with the chance scale ( $r = .59$ ,  $p < .01$ ) and "both were negatively related to the I scale ( $r_s = -.14$ ,  $-.17$ , ns). Such a finding is not surprising since both the powerful others and chance scales reflect a belief in a nonpersonal locus of control" (1974, p. 379). The reinforcement value of pollution control or activity in the group was not assessed.

Using a varimax rotation in analyzing data from the 329 undergraduate male students (1974) and from the 165 psychiatric patients (1972) Levenson found no overlap between the Internal, Chance, and Powerful Others scales. In the study of the psychiatric patients construct validity was supported, but there was low test-retests reliability for the Internal scale. "The test-retest reliabilities for the powerful others and chance scales compared favorably with those obtained for a normal college student sample ( $r = .74$  and  $r = .78$ ); the internal scale correlation was extremely low ( $r = .08$ )" (1972, p. 400). She interpreted this by speculating that for maladjusted persons, chance and powerful others control dimensions may "reflect rather stable, meaningful orientations . . . (while the internal scale may . . .) reflect day-to-day fluctuations in a person's judged competency" (1972, p. 403). Since this researcher's subjects were assumed not to be

maladjusted, Levenson's conclusions may not be applicable to this study. The Family Planning Locus of Control Scale has been tested for overlap between the three subscales, but not for test-retest reliability.

Other authors have described the characteristics of people who are internals and externals on the I-E scale. Internals have been found to seek information more actively, choosing information relevant to present and future problems, utilizing their information better in problem-solving, and knowing more about conditions effecting them (Arakelian, 1980; Davis & Phares, 1969; Phares, 1968; Seeman & Evans, 1962). Internals are also more likely to trust strangers, approach, use, and benefit from assistance from authority figures and accept public pronouncements supported by evidence such as the Surgeon General's report on smoking, are better liked, more persuasive and more able to influence health care givers' decisions. Internals are more self-reliant and willing to remedy self, accept feedback, acknowledge shortcomings, and seek expert help when one feels incompetent (Arakelian, 1980).

Some of these findings have been used in determining content of the Family Planning Locus of Control Scale. The researcher has included assessments of subjects' information seeking and utilization, opinion and information sources, and relationships to health care providers in items of the Family Planning Locus of Control Scale. Studies which explore the relationship between various locus of control measures and aspects of health are reviewed in the following section.

### Locus of Control and Health

The researcher will now discuss studies relevant to the relationship between measures of locus of control and health-related attitudes, behaviors, and outcomes. The researcher will incorporate into this discussion a review of attempts to construct and use a more health-specific measure of locus of control.

Because health-related behavior is so complex, locus of control seems to be a mediating factor, not one which can independently predict or account for health behavior or outcomes (Arakelian, 1980). The lack of control and the use of unequal convenience samples has contributed to the difficulties in correlating locus of control with specific health behaviors or outcomes. According to social learning theory, if one is attempting to predict behavior one must account for not only expectancies for success such as locus of control but also the reinforcement value of the behavior and the psychological situation (Phares, 1976). Therefore, it is questionable whether any locus of control scale should be used alone as a predictive tool. This researcher has not attempted to predict family planning behavior on the basis of Family Planning Locus of Control.

By 1980, at least 16 different locus of control scales had been developed (Arakelian, 1980). Some are merely variations of the I-E scale, and others were attempts to measure situation-specific correlations between locus of control and certain behavior. Some of these scales were specific for health.

Arakelian (1980) noted that Rotter (1966) was correct in stressing the impact of both generalized expectancies and reinforcement value in determining behavior. Internals have been shown to be initially more likely to master health information. This was especially true among subjects who placed high value on health and in programs where information presented was consistent with their control and independence preferences. Internals were also better able to extract relevant information and situational cues to use in problem-solving.

Wallston, Maides, and Wallston (1976) criticized past locus of control studies regarding information seeking in health situations for assuming that subjects placed a high value on eliminating a threat such as illness. Instead, they hypothesized that internals will seek information only when given a high value placed on health.

One can distinguish between an expectational construct such as motivation and an expectancy construct such as locus of control (Wallston, Maides, & Wallston, 1976). Dabbs and Kirsch (1971) found that internals took more influenza immunizations than motivated subjects, implying that motivation and locus of control are distinct concepts, with unequal ability to predict health behavior in a given situation.

Saltzer (1978) developed a locus of control scale specific for expectancies for control over body weight. She also assessed the value of weight control of her subjects. Among

those who valued weight control, different reinforcements were found for internals and externals, with internals placing more importance on personal attitudes, and externals placing more value on societal norms. Her findings were not replicated when she measured locus of control with the Health Locus of Control (HLOC) scale. This points to the value and increased sensitivity of situation-specific measures of locus of control such as the FPLC scale.

Wallston, Wallston, Kaplan, and Maides (1976) developed a Health Locus of Control Scale to measure a mixture of personal and general control ideology. Of the external items, all but one pointed to a chance rather than a powerful others orientation. The scale yielded a single score, much like the I-E Scale, so that the higher the score, the more external the subject was labeled. However, in contrast to the I-E Scale with its forced choice format, this scale was a Likert-type. There were 11 items on the scale. There was a deliberate attempt to balance internal and external items, of which five were internal. Internal consistency reported by the authors as an alpha reliability of  $r = .72$  for the first sample, with a decrease to  $r = .40$  to  $r = .54$  with later samples. The authors later stated that the low alpha reliability may have been the result of combining the internal and external statements into the same measure as an unidimensional scale (MacDonald, 1973). The Health Locus of Control Scale had a  $r = .33$  correlation with Rotter's I-E Scale, implying that the two scales

measured the same belief system, but each had its own discriminant validity (Wallston & Wallston, 1978).

Wallston, Maides, and Wallston (1970) used the Health Locus of Control Scale in studying college students to discover the relative impact of reinforcement value and Locus of Control. In their first study they asked 44 male and 44 female college students to take the Health Locus of Control Scale, and to rank order 10 terminal values, including health, to determine the value they placed on health. They also measured their experience and knowledge about hypertension, and subsequent information-seeking behavior as measured by the number of pamphlets on hypertension they chose. They found that internals with high values placed on health chose the most pamphlets (mean of 10.96 out of a possible 16), and externals with a low value placed on health chose the fewest (mean of 9.86). Locus of control seemed more important than reinforcement value as internals with a low value on health chose more pamphlets than did externals with a high value on health (9.05 versus 8.96).

In a second study with 43 male and 45 female undergraduate students, similar results were found. Perceived adequacy of knowledge was not related to information-seeking in either study.

Based on Levenson's (1973) Multidimensional Locus of Control Scale, Wallston, Wallston, and DeVellis (1978) adapted the Health Locus of Control Scale to include the dimensions

of chance, powerful others, and internality. In contrast with the Health Locus of Control, it included personally worded items only, and not a mixture of personal and general items. They gave subjects at a public airport a booklet containing an item pool of 25 internally-worded items, 30 powerful others-worded items, 26 chance-worded items, Levenson's Multidimensional Locus of Control Scale, a 10 item version of the Marlowe-Crowne Social Desirability Scale, 2 questions regarding general health, and 4 demographic questions regarding age, sex, education, and residence.

From the pool of internal, chance and powerful others items, Wallston, Wallston, and DeVellis developed two (A and B) Multidimensional Health Locus of Control Scales with six items measuring each dimension of chance, powerful others, and internality. Item selection was performed according to the criteria of: an item mean of about 3.5, wide distribution of response alternatives on the item, a significant item-to-a prior scale correlation, a low correlation with the measure of social desirability, and clarity of wording. The alpha reliabilities of the scales ranged from  $r = .67$  to  $.76$  for individual scales, or  $r = .83$  to  $.35$  if the A and B forms are combined. In testing for correlations between the Internal, Chance, and Powerful Others scales, Wallston, Wallston, and DeVellis found that Internal and Chance were statistically independent, Powerful Others and Chance were positively correlated, the Internal and Chance were negatively correlated,

the Internal Health Locus of Control was positively correlated with the Internal Locus of Control, the Powerful Others Health Locus of Control was positively correlated with the Powerful Others and the Chance, and the Chance Health Locus of Control was positively correlated with the Chance and Powerful Others, and negatively correlated with the Internal. Thus there seems to be some overlap between the subscales, but no two are identical or exact opposites. In the following section studies are reviewed which focus on one aspect of health, family planning, and locus of control.

#### Locus of Control and Family Planning

In this section the researcher presents findings from various studies on family planning and locus of control. These studies serve to demonstrate both the usefulness of applying the locus of control concept to family planning and the difficulties encountered when one tries to portray or predict family planning behavior or outcomes in terms of a single isolated factor or concept such as locus of control.

In their review of locus of control literature, Wallston and Wallston (1978) pointed out that the results of attempts to correlate locus of control with use of contraceptives and success in family planning have been inconsistent and inconclusive. However there seems to be some evidence for a positive relationship between internal locus of control and success in family planning. For example, Steinlauf (1977) found locus of control predictive of contraceptive effectiveness,



defined as lack of unplanned pregnancy in a woman's history, if used in conjunction with means-ends problem-solving ability. The number of unplanned pregnancies was significantly and negatively related to internal control, and significantly and positively related to belief in chance control. Women seeking abortions at a clinic were contrasted with women seeking annual examinations at a Planned Parenthood clinic.

Hall (1978) administered the Internal-External Scale to 183 women attending a family planning clinic because they thought they might have an unplanned pregnancy. He found that externals had taken significantly higher contraceptive risks at the time of suspected conception.

Blignault and Brown (1979) studied 100 British women at antenatal clinics and found a positive relationship between internal locus of control as measured on Rotter's Internal-External Scale and contraceptive attitudes. However, no positive relationship was found between locus of control and contraceptive knowledge or practice. MacDonald (1970) also found a relationship between the family planning and locus of control. He reported that the use of some method of family planning was 62% among internals in contrast to 37% among externals.

Seeley (1976) was critical of MacDonald and stated that scores on the Internal-External Scale are not related to success at family planning (or any other) goal implementation. Seely gave two reasons for this: (1) the Internal-External

Scale measured beliefs and therefore correlation with past or intended behavior is not necessarily automatic and (2) the Internal-External score was susceptible to distortion as subjects may try to please or comply with what they perceive as expected or socially desirable.

Seeley's data indicated that success at implementing family planning goals may not be related to Internal-External Locus of Control. Among 71 women, success in family planning was instead related to ability to respond to internalized structure versus external cues on the Embedded-Figures Test. The Embedded-Figures Test measures field dependence and independence. Seeley concluded that locus of control is related to fertility if measured by the proper instrument, that is the Embedded-Figure Test.

Although no locus of control scale specific to family planning has been developed, Peel and Carr (1975) included statements similar to some on the researcher's Family Planning Locus of Control Scale as part of an interview on attitudes about fertility control. Their sample consisted of 1,678 women, who were asked to indicate on a Likert-type scale agreement with the following statements:

"Some unwanted pregnancies can only be described as bad luck."

"There are some things that just can't be planned perfectly and having babies is one of them."

"Any normal couple can have exactly the number of children they want and no more."

"One important reason why some women have larger families is that they become pregnant more easily."

"Any intelligent couple can plan their sex lives so as never to have an unwanted pregnancy."

"Some people are so strongly sexed that family planning does not work for them." (p. 128)

All of the statements were about people in general, not about the subjects themselves. They found no patterns that distinguished age-at-marriage, formal education, social status, religious groups, or history of success or failure in family planning. The authors also found many internal inconsistencies in how subjects responded to the statements. The authors did not pursue this investigation further, and the reasons for the results are not clear. The small number of items on the scale may have contributed to the inconclusive results. Results of studies such as this point to the complexity of family planning and the obstacles to prediction of family planning success or failure.

In the following two sections studies of locus of control and family planning among single and unmarried women are reviewed. The value of examining both types of studies is illustrated.

#### Locus of Control and Family Planning Among Unmarried Women

Much of the literature addressing the relationship between locus of control and family planning focused on contraceptive practices and outcomes among unmarried women, particularly college students. These studies are of value in that they show how complex family planning is, and how family planning outcomes cannot be predicted by a single isolated scale, measure or concept. Thus, when used in isolation, the Family

Planning Locus of Control Scale may be of limited value in predicting contraceptive behavior or outcomes.

Several studies have shown a relationship between locus of control and family planning factors among unmarried women. Some of these studies pointed to the need to assess factors besides locus of control.

According to Wallston and Wallston (1978), in 1976 Harkey and King found that abortion patients and users of some method of family planning were slightly more internal than a control group, and unwed mothers were slightly more external. However, the three groups differed significantly in age and socio-economic status, making the results difficult to interpret.

Digman (1979) found that external locus of control correlated negatively with use of highly effective, low failure contraceptive methods among single college women. Lundy (1972) found that among sexually active single female college students, "contraceptors" were more internal than were "non-contraceptors."

Fox-Greer-Litton's (1977) data generally supported Digman's (1979) and Lundy's (1972). However, in this study internal locus of control was predictive of effective contraception only for those female college students with non-traditional sex role attitudes.

Meyerowitz and Malev's (1973) data also indicated that other factors besides locus of control should be assessed in predicting family planning behavior. They found locus of control to be only one of seven factors predictive of adolescent pregnancy-risking behavior.

Other studies showed no relationship between locus of control and family planning among unmarried women. For example, in studying unmarried women, Phares (1976) found no relationship between locus of control and use of contraceptives.

Hegelis (1974) studied 21 consistent users of contraception and 21 unwed pregnant adolescents, matched for age and marital status. The data suggested that locus of control as measured on Rotter's Internal-External Scale and perceived heterosexual and parental relationships may not be related to consistent contraceptive practices. Instead contraceptive practices seemed more related to social maturity. The author cautioned that the essential aspects of social maturity necessary for consistent contraceptive practice remain unclear, needing more research.

Smith (1978) also addressed locus of control and contraceptive behavior among young unmarried women. Similarly to Hagelis (1974), Smith found no relationship between ego development or locus of control according to Rotter's Internal-External Scale and contraceptive behavior as classified regular, irregular, or non-use of some method. Instead contraceptive usage could be predicted 69% of the time by considering the factors of perception of necessity and dangers of contraceptive use, parents' attitudes, educational level, length of time a contraceptive had been used, physician's advice to discontinue use of a certain contraceptive, and the relationship with sexual partner(s).

In studying 191 female undergraduate students, Harvey (1976) was unable to find a relationship between locus of control as measured on Rotter's Internal-External Scale, and the "safe" use of contraceptives, that is, oral contraceptives or an IUD, or "risky" use of contraceptives, that is, foam, condoms, diaphragm, rhythm, or no method. However, there was a relationship between the type of contraceptives used and the level of striving in the present and five years into the future. Those with higher levels of striving were more likely to be "safe" contraceptors.

Herold, Goodwin, and Lero (1979) studied 13 to 20 year old single women who attended birth control centers in southern Ontario and volunteered to fill out questionnaires. Locus of control as measured by Reid and Ware's Internal-External Scale was not related to any contraceptive variable. The variables studied were positive attitudes towards contraceptive usage, low embarrassment about obtaining contraceptives, and effective and consistent contraceptive usage. However, self-esteem was related to the contraceptive variables.

Defining successful contraception as timeliness of return clinic visits, clinic retention, and lack of unwanted pregnancy, Oskamp et al. (1978) found that locus of control as measured on Rotter's Internal-External Scale was not a predictor of successful contraception among 14 to 50 year olds at Los Angeles Planned Parenthood clinics. Instead sexual knowledge, future-time perspective, and participation in the study were found to be predictors of successful contraction.

Silk (1980) found no support for the belief that externalization of responsibility as determined by the Internal-External Scale or developmental immaturity explained adolescent pregnancy. Instead socio-economic factors of occupational status of both parents, educational level of the girl's mother, source of family income, and whether her mother was married at the time of her first pregnancy significantly distinguished between two groups of adolescents, 71 pregnant and 35 non-pregnant.

The locus of control literature on unwed women demonstrated the complexity of contraceptive usage and predictions and the inconsistency between findings from previous studies. It is not known whether or how the same factors may have an impact on contraceptive usage or outcomes among married women. At this point the predictive value of the Family Planning Locus of Control is also unknown. In the present study data collected on factors which may influence family planning, but focuses on married women. The researcher now examines literature on family planning and locus of control among married women.

#### Locus of Control and Family Planning Among Married Women

Some authors have noted a different relationship between locus of control and contraceptive variables for married women than for single women. MacDonald (1970) gave percentages of a sample of sexually active female college students who

used birth control: 87% among internal marrieds, 63% among external married, 62% among internal unmarrieds, and 37% among external unmarrieds. Although the number of marrieds,  $N=23$ , was too small to show statistical significance, these percentages suggest that marrieds may be more likely to use birth control. This is consistent with social learning theory which claims that in novel situations, generalized expectancy such as locus of control may hold more predictive value than in situations in which individuals can draw on past similar experiences (Phares, 1976). It may be that family planning is more of a novel situation for single women than for married women, making locus of control of less predictive value for family planning among married women. Since the Family Planning Locus of Control Scale was less general than the Internal-External Scale its predictive value among married women may be greater. MacDonald (1970) found no difference between internals and externals in practice of premarital coitus, number of different sexual partners, or time of first coitus, before versus during college.

In comparing and contrasting married and single college students, Jabes (1974) showed that more family planning methods were acceptable to the married students. The number of methods found acceptable increased with length of marriage.

Slosnick (1976) studied 44 childless married adult couples to determine what factors were predictive of desired family size. He measured locus of control, family planning



intentions, background data, and goals for child bearing and child rearing. Externals were shown to want more children, but specific expectancies were more predictive than the more abstract generalized expectancies for reinforcement of locus of control. Success at reaching goals, and family planning behavior were not studied. Since there are few studies on family planning and locus of control among married women, it is important that studies be done to examine the relationship between these factors.

Because of the confounding influence of marital status on the relationship between locus of control and family planning practices, as well as other possible influences of marital status on family planning attitudes and behavior, this researcher has focused exclusively on married women. Other studies would be needed to test the usefulness of the Family Planning Locus of Control Scale for unmarried women, including those divorced, widowed, and never married.

Racial differences have been studied as possible influences on both family planning and locus of control. Relevant studies exploring these influences are reviewed in the following section.

#### Racial Influences on Locus of Control and Family Planning

As was discussed earlier in this chapter, race may influence desired and/or actual family size. Race may also be a factor influencing locus of control orientation. For example, blacks seem to be generally more external than white (Epstein & Komorita, 1971; Lefcourt & Ladwig, 1966; Strickland, 1972).

There may be racial differences in the relationship between locus of control and family planning factors. Segal and DuCette (1973) noted that although there was no mean difference in locus of control between a white high school and a black high school, in the white school pregnant girls were more external and non-pregnant girls more internal. In the black school pregnant girls were more internal and non-pregnant girls more external. They suggested that in both schools internally oriented girls were perceiving their environments more accurately. Economic factors may have also had an influence.

House et al. (1977) studied 1,349 junior and senior high school students in rural North Carolina, and found whites to be more internal. This finding contrasted with that of Segal and DuCette (1973), but suggested that race should be assessed and considered a possible factor in influencing locus of control studies.

Using the Norwich-Strickland locus of control scale for children which distinguish between belief in societal and self-control, Walters (1979) found socio-economic status and race better predictors of pregnancy among young girls than locus of control or purpose in life. The author cautioned that the sample of 1,197 was too small to allow for generalization.

Fisch (1975) studied 34 black women on welfare, hypothesizing that poor, effective family planners would be more

internal on Rotter's Internal-External scale. The data showed no significant difference between effective and ineffective family planners on locus of control. The subjects were generally strong externals and locus of control was not found to be related to family planning effectiveness. Instead effective family planners were characterized by being younger, from smaller families, having husbands who took a stand on the number of children they wanted, interest in a man as a life-long partner, having more discrete reasons for family planning and mentioning a mother's needs as an important reason for family planning. The author concluded that effective family planners may be responding to the societal norm for smaller families, having this reinforced by their husbands and by their families of origin.

Again, locus of control on the Internal-External Scale seemed to be a poor predictor of family planning success. The Family Planning Locus of Control Scale may be a better predictor because of its specificity, but this cannot be stated conclusively from this study.

The inconsistent and inconclusive results found in previous attempts to identify relationships between family planning factors and locus of control may be due in part to the non-specificity of the scales used. Rotter (1975) recognized this limitation of the Internal-External Scale, and recommended the development and use of more specific locus of control measures when one wants to use locus of control for practical application or prediction.

The Family Planning Locus of Control Scale (FPLC) was based on general locus of control scales, but it was intended to measure an expectancy regarding a specific set of events over time. Thus it incorporated aspects of both generalized and situational expectancies.

In the following section studies are reviewed which demonstrate the results of attempting to change locus of control orientation or to match interventions with locus of control orientation.

#### Locus of Control and Interventions With Clients

The major purpose of this study was to provide information to assist nurses in their family planning assessments and subsequent interventions. Therefore, the researcher has reviewed studies showing the results of attempting to change locus of control or to tailor interventions to clients' locus of control orientation.

Several locus of control change techniques have been described in the literature. Most of these techniques were attempts to shift to more internal orientation. In 1970 Reimanis and Schaeffer showed that a counseling technique using statements with internal questions, rewarding internal statements, and helping subjects recognize and focus on contingencies of their behavior resulted in subjects seeing themselves as having more power to cause change. This change in subjects was demonstrated by increased internality after counseling in a test-retest design (MacDonald, 1972).

Dua (1970) contrasted three groups of subjects' scores on the Internal-External Scale before and after intervention. One group was given an "action program," one a "reeducation program," and one no treatment. The "action program" in which subjects were helped in developing new specific and positive behaviors resulted in a decrease in externality from a score of 14.03 to 7.10. The "reeducation program" focused on influencing attitudes change in interpersonal relationships, and resulted a change in externality from 14.10 to 10.2. This change was not statistically significant. The control groups' externality score dropped from 13.30 to 12.70.

Smith (1970) showed that psychotherapy to help clients learn more effective coping mechanisms in resolving immediate and acute life crises resulted in a significant decrease in externality scores. The same change was not observed following therapy in non-crises situations.

The literature showed that locus of control can be changed by intervention, at least temporarily. But there has been little agreement on the best methods for achieving locus of control changes. The techniques suggested by the researcher in Chapters II and VI are most similar to those of Reimanis and Schaefer (1970).

Other researchers have looked at the effect of locus of control on treatment outcomes, and the results of matching treatment modality to locus of control orientation. Groups in which the therapeutic approach was congruent with the

clients' locus of control orientation, and in which clients were grouped according to their locus of control orientations were more likely to meet their treatment goals (Arakelian, 1980; Saltzer, 1978). Wallston, Wallston, Kaplan, and Maides (1976) showed that subjects were most successful at weight loss when working in groups of similar locus of control orientation. Externals often responded best to programs in which the intervener was in control (Best & Steffy, 1975) and in which environmental stimuli and reinforcements were designed carefully by the intervener (Manno & Marston, 1972). Thus nurses may find that clients may be most successful in their family planning when grouped according to locus of control on when interventions are matched with locus of control orientation. This concept is explored in more detail in Chapters II and VI.

In this study nursing interventions in family planning have been placed in the context of self-care as defined by Orem (1971): "The practice of activities that individuals personally initiate and perform on their own behalf in maintaining life, health and well-being" (p. 13). Self-care agency is the ability to think and act in ways necessary for self-care (Kearnen & Fleischer, 1979).

There have been no studies on the relationship between self-care, family planning, and locus of control. However there has been a study on the relationship between self-care agency and locus of control done by Kearnen and Fleischer (1979). This study is reviewed in the following section.

### Self-Care

Based on Orem's (1971 & 1980) approach to self-care as presented in Chapter II, one might conclude that optimal exercise of self-care would be facilitated by an internal locus of control. However, when Kearnen and Fleischer (1979) developed an instrument to measure self-care agency, data collected from 84 nursing students and 153 psychology students did not support this hypothesis. The authors had hypothesized that "there is a positive correlation between exercise of self-care agency and internal control as measured by Rotter's (1966) Internal-External Locus of Control Scale" (p. 28). Since the data did not support this hypothesis, the authors concluded that "the lack of support for Hypothesis I suggests that locus of control does not effect exercise of self-care agency. This indicated that the source of reinforcement, internal or external, had no bearing on the degree to which one exercises self-care agency. Thus, a person may practice self-care from self-directing motivation or from compliance to external authority figures" (1979, pp. 32-33). However, the population studied may have influenced the results. Use of a multidimensional locus of control scale, with a distinction between chance and powerful others orientations may have shown differences in self-care agency between those with chance and powerful others orientations.

The results of this study may have implications for nursing interventions based on locus of control measures.

It may not always be necessary or even desirable to attempt to change clients' locus of control orientation to reach a desired outcome. It was beyond the scope of this study to examine or test this possibility in any depth, but the researcher has included a discussion of various nursing interventions based on assessed family planning locus of control orientation in Chapter II. The researcher has diagramed possible ways to reach a desired family planning outcome both with and without changing locus of control orientation.

Another self-care agency assessment was developed by Miller (1980) for use with diabetic clients. This assessment guide has not been systematically studied, but is intended for use as a nursing assessment. Little formal research has been done on self-care measures, or on the relationship between self-care and locus of control.

### Summary

In the review of the literature the researcher has documented the complexity of family planning attitudes, behaviors and outcomes, the development of locus of control measures, and the inconclusiveness of previous attempts to establish relationships between locus of control and family planning variables.

Family planning attitudes, behavior and outcomes have been influenced by the variables of availability, accessibility, and acceptability of methods and services (Manisoff, 1973), as well as by personal, cultural, and situational factors.



Plans to prevent versus delay pregnancy were shown to have a significant impact on the probability of a pregnancy occurring (Jones et al., 1980; Vaughan et al., 1977). Lack of information and misinformation were shown to be major obstacles to successful family planning (Clancy & Brown, 1979; Miller, 1975; Presser, 1977; Zelnick & Kantner, 1979).

Studies addressing the relationships between demographic or sociological factors and family planning were reviewed. It was noted that family planning was influenced by education (Anderson, 1981), religion (Anderson, 1981; Barnett, 1976; Combs, 1978; Handle, 1973), race and socio-economic status (Anderson, 1981; Barnett, 1976; Nye & Berardo, 1973).

The researcher reviewed studies documenting the development of locus of control measures. Locus of control is based on social learning theory (Rotter, 1954) and has been measured most frequently by the Internal-External Locus of Control Scale (Rotter, 1966). This scale measures beliefs in personal control of life events versus a belief in chance. A possible relationship between locus of control and social desirability was examined (Cone, 1971; Hjelle, 1971; Rotter, 1966). The results were inconclusive.

Later studies documented the multidimensional quality of the Internal-External Scale (Gurin et al., 1969; Collins, 1974; Hersche & Schiebe, 1967; Hochreich, 1974; Levenson, 1972 & 1974). Levenson (1972) developed the Multidimensional Locus of Control Scale, with dimensions of internal, chance, and powerful

others. Several other locus of control scales have been developed, including the Multidimensional Health Locus of Control Scale (Wallston, Wallston, & DeVellis, 1978).

Locus of control has been correlated with various health-related variables. These include immunizations (Dabbs & Kirscht, 1971), weight control (Saltzer, 1978), knowledge about hypertension (Wallston, Maides, & Wallston, 1970), and family planning.

A major focus of the review of the literature was on the relationship between locus of control and family planning. The findings were inconsistent, and showed the need to consider factors besides locus of control when attempting to portray or predict family planning factors.

Among single women, a relationship between locus of control and family planning was found in several studies (Digman, 1979; Fox, Green, & Litton, 1977; Lundy, 1980; Meyerowitz & Malev, 1973). But no relationship was found between locus of control and family planning by others (Harvey, 1978; Hogelis, 1974; Herold, Goodwin, & Lero, 1979; Oskamp et al., 1978; Phares, 1979; Sils, 1980; Smith, 1978). It was noted that married women may be less influenced by locus of control than are single women (Phares, 1976). However the scarcity of studies on locus of control and family planning among married women made it difficult to draw definite conclusions.

Racial differences were shown to influence family planning and locus of control. Blacks seem to be more external than

are whites (Epstein & Kornorita, 1971; House et al., 1977; Lefcourt & Ladwig, 1965). In one study black teens with internal locus of control were found to be more likely to become pregnant, and white teens with internal locus of control were more likely not to become pregnant (Segal & DuCette, 1973). Another study found no relationship between locus of control and family planning outcomes among black women on welfare (Fisch, 1974).

Locus of control was shown to have implications for interventions with clients. Apparently locus of control orientation can be made more internal (Dua, 1970; Smith, 1970). When locus of control and treatment approach are congruent, results are generally more positive (Arakelian, 1980; Best & Steffy, 1973; Wallston, Wallston, Kaplan, & Maides, 1976).

The scarcity of studies examining the relationship between self-care and locus of control was noted. Although this relationship is not empirically researched in this study, the two concepts and their interrelationship are discussed in Chapter II as the conceptual basis for this study.

## CHAPTER IV

### METHODOLOGY

#### Overview

This methodological study was designed to develop a tool for assessing locus of control specific to family planning in married women between the ages of 18 and 35 years. The study's primary purpose was to construct and test for internal consistency the Family Planning Locus of Control (FPLC) Scale. The three subscales, Internal, Chance, and Powerful Others, were examined separately for internal consistency using the alpha coefficient method. A secondary purpose of the study was to describe the subjects' responses to the Family Planning Locus of Control Scale. After completion of the data collection and initial data analysis, the final Family Planning Locus of Control Scale was constructed. There were approximately six items on each of the final subscales.

This chapter contains the operational definitions of the research statement variables, a description of the research approach and design, a description of the subjects, the instrument construction and statistical analysis methods, the variable matrixes, a discussion of the procedures used, and an explanation of human rights protection.

Problem statement: To construct a reliable Family Planning Locus of Control Scale, the FPLC.

### Research Questions

The following research questions were examined in this study:

1. What are the relationships between the descriptive variables and scores on the Internal, Chance, and Powerful Others subscales of the Family Planning Locus of Control Scale?
2. How do the items on the Family Planning Locus of Control Scale cluster together according to factor analysis?
3. Are the Internal, Chance, and Powerful Others subscales of the Family Planning Locus of Control Scale internally consistent according to the alpha coefficient method at the level of  $r = .6$ ?
4. What are the correlations between the Internal, Chance, and Powerful Others subscales?

### Operational Definitions

#### Reliable

A reliable scale is one which is internally consistent as determined by the alpha coefficient method. Each of the subscales, Internal, Chance, and Powerful Others, was required to have an alpha coefficient of at least  $r = .6$  to be considered reliable. A scale which is internally consistent is homogeneous,

measuring only one characteristic (Polit & Hungler, 1978). Alpha coefficient was chosen as a measure of internal consistency because it allowed the researcher to compare the internal consistency of the Family Planning Locus of Control Scale with the Multidimensional Health Locus of Control Scale (Wallston, Wallston, & DeVellis, 1978) for which alpha has been determined. It indicates "an estimate of the split-half correlation for all possible ways of dividing the measure into two halves" (Polit & Hungler, 1978, p. 431).

### Family Planning

Family planning means deliberate decisions and actions to prevent unwanted pregnancies, those wanted later and never. Consistent with the Planned Parenthood Federation of America's definition of family planning, abortion was not included as a method of family planning in this study (Sutters, 1973). This definition of family planning was written in the instructions to the instrument to ensure that subjects understood this researcher's meaning for the term.

In its broadest sense family planning involves both avoiding unwanted pregnancies, and having the desired number and timing of children that one wishes (Corsa, 1969; Whelpton, Campbell, & Patterson, 1966). But for the purpose of this study, family planning only meant prevention of pregnancies which subjects said were unwanted at the time of conception. The instrument had specific questions about whether pregnancies

were wanted then, wanted later, or never wanted according to the subjects' perceptions at the time of conception.

### Locus of Control

According to Rotter (1966), the originator of this term, Locus of Control was a perception, based on one's social learning, of the amount of control people have over their destiny and events in their lives. It was a self-appraisal of the tendency to believe in personal causality versus chance, fate, or control by others (Lefcourt, 1976). In contrast to Rotter's definition of the term as a belief about events and people in general, this researcher has used Locus of Control relative to a specific aspect of life, family planning, and subjects' beliefs about their own lives only.

### Family Planning Locus of Control (FLPC) Scale

This scale was a Likert type scale developed by the researcher as an adaptation of the Multidimensional Health Locus of Control (MHLC) Scale (Wallston, Wallston, & DeVellis, 1978). It was specific to family planning as defined above, and consisted of three statistically independent but randomly mixed subscales. The subscales were Internal (IFPLC), Chance (CFPLC), and Powerful Others (PEPLC). Based on Levenson's (1973) definitions of internal, chance, and powerful others, the subscale measured belief in personal control over family planning, a fatalistic attitude about family planning, and belief that powerful people or forces determine or strongly

influence their family planning behavior and its results. In these definitions the researcher followed Levenson's (1973) precedence of measuring beliefs about personal control, not beliefs about control of or by people in general as Rotter had done (1966).

The Family Planning Locus of Control Scale was a six-point Likert type scale with a forced choice format. Responses were scored from one to six so that a cumulative score for each subscale could be computed. The higher the score, the stronger the orientation on that dimension. Items were stated positively or negatively, and scored accordingly.

Unless otherwise stated, the Family Planning Locus of Control Scale refers to the final scale constructed after the data were collected and analyzed, not the original and longer scale which was presented to the subjects. The scales are shown in Appendices C and E.

### Population

Married women between the ages of 18 and 35 at several primary care sites in the Lansing, Michigan area were asked to complete the questionnaire. Seventy-seven subjects were used. Those who had been surgically sterilized or whose husbands had been surgically sterilized were eliminated from the study because their family planning needs are different from other women. This age group was chosen as a partial control over the developmental stage of the woman and her family, and because these years are commonly childbearing years in our



culture. Califano (1978) showed that by the time the average American woman is 29 she will have had 71.3% of the births she expects; by the time she is 34, 93.1%. These are women who are making either active or passive choices about their family planning.

Marital status was also controlled. Married women were chosen for several reasons: the researcher's interest, availability of data on births to married women (Tietze, 1970), the generally increased regularity of sexual intercourse among married versus single women (Vaughan et al., 1977), and as a control for any factors which may either characterize or influence married and single women differently. Married women differ from single women by being subject to family planning influences of spouse and in-laws, as well as possible societal expectations for childbearing.

The questionnaire was constructed to screen for the above requirements. Subjects met the following criteria:

1. Sex: female.
2. Age: range 18 to 35 years.
3. Marital status: currently married, not separated.
4. Able to read English.
5. Neither self or husband surgically sterilized.
6. Visited a chosen primary care site during the time of the study.
7. Willingness to participate in the study as evidenced by signed consent.

Some of the screening for the above criteria was completed by receptionists before potential subjects were requested to participate (see Appendix B-2, Instructions to Receptionists), and the rest of the screening was done by the researcher using the signed consent form and questions 1, 2, and 4 on the Basic Data Profile.

Receptionists were asked by the researcher to help screen for subjects of appropriate age and marital status by use of charts. They were given written instructions on this selection process and requested to ask clients at the primary care sites if they would be willing to participate in a study by completing a questionnaire. Those who agreed were given a cover letter explaining the purpose of the study, confidentiality, the fact that there would be no formal follow-up or direct benefit to them, and general instructions. The researcher then asked subjects to read and sign the consent form (see Appendix B-3) and gave them the questionnaire. Subjects filled out the questionnaire at the primary care sites, and were requested not to consult with others while completing them.

No attempt was made to obtain a random sample. The sample in this study was a convenience sample and represented the community only in that subjects were obtained from several primary care sites. It was hoped that the descriptions of the respondents and their Family Planning Locus of Control Scores will help the reader in assessing the applicability of these findings to other populations and samples.

### Instrument

This study was primarily a methodological research study in which a new tool has been developed and evaluated for internal consistency. The tool is the Family Planning Locus of Control Scale which was constructed for use with married women between 18 and 35 years of age. Each subscale, Internal, Chance, and Powerful Others, was constructed in its final form after the data was collected and initial analysis was completed, and consisted of approximately six items with an alpha coefficient of internal consistency of at least  $r = .6$ . The tool was a Likert type six-point forced choice scale in which some of the items were stated negatively, and some positively, and items from the three subscales were randomly arranged. The questionnaire given to study subjects had 40 family planning locus of control items.

The subjects were questioned only once; no attempt was made to determine test-retest reliability.

The development of the instrument, pretesting, statistical analysis, scoring, and rationale for the instrument format used are presented in the following section.

### Development of the Instrument

#### Descriptive Data

The instrument was divided into two sections, each with a different purpose: the first to describe the subjects, and the second to measure their family planning locus of control.

The first section consisted of descriptive categories which the subjects have checked, and served to select appropriate subjects and describe them according to the variables' age, length of marriage, race, religion, number and planning status of pregnancies, desired family size, history of infertility, number of spontaneous and induced abortions, education, income, regularity of contraceptive usage, and current and past methods of contraception.

Several of these variables were chosen on the basis of previous research. Desired family size has been shown to be correlated negatively with effective use of contraceptives. It varies with religious beliefs, race, and social class (Handel, 1973). The influence of social class is debatable. Nye and Berardo (1973) stated that social class does not correlate with desired family size, but with actual family size. One study (Slosnerick, 1975) found that locus of control was significantly correlated with desired family size. Those who were internals and generally believed that they had control over events in their lives wanted to have fewer children than externals who generally believed that chance or powerful others controlled their lives. Desired family size may also independently influence attitudes, choices and behavior in family planning. Women with identical Family Planning Locus of Control scores may differ attitudinally and behaviorally because of differences in desired family size.

Contraceptive use and locus of control have been studied by numerous researchers: MacDonald (1970), Lundy (1972),

Gough (1973), Hagelis (1973), Harvey (1976), Phares (1976), Hall (1977), Steinlauf (1977), and Smith (1978). The results have been inconclusive. Fisch (1974) and Seeley (1976) studied locus of control and the effectiveness of family planning, but found no significant relationships. Rutledge (1978) noted that extended counseling effected locus of control in abortion clients, but he did not study the relationship between locus of control and use of elective abortions.

The descriptive variables have been portrayed in narrative and in frequency distribution tables which list the numbers and percentages of the total subjects who were in each descriptive category.

#### Family Planning Locus of Control Scale

The second section of the instrument was the Family Planning Locus of Control Scale. It was specific to family planning, and was developed by the researcher as an adaptation of Wallston, Wallston, and DeVellis' (1978) Multidimensional Health Locus of Control (MHLC) Scale. In reviewing the literature on locus of control, the researcher became aware of two factors. First locus of control was specific to different aspects of life, and could not be adequately measured by a general scale. Secondly, no instrument existed which was specific to or satisfactorily applicable to family planning. Although the Multidimensional Health Locus of Control Scale was too general for this researcher's purposes and was not

designed for use with developmental and day-to-day non-illness related health issues such as family planning, it did contain the internal, chance, and powerful others subscales, and was chosen by this researcher as a guide in the development of the Family Planning Locus of Control Scale.

The Family Planning Locus of Control Scale consisted of three statistically independent but randomly mixed subscales, internal (IFPLC), chance (CFPLC), and powerful others (PFPLC). Based on Levenson's (1973) definitions, they measured belief in personal control over family planning, a fatalistic attitude about family planning, and belief that powerful people or forces determine or strongly influence their family planning behavior and results respectively. The items measured personal perceptions related only to their own family planning, not what they believe is true for people in general. This was consistent with Levenson's (1973) development of the Internal, Chance, and Powerful Others scales in which she departed from Rotter's (1966) precedent of measuring attitudes about the amount of external and internal control people in general have over their lives.

### Pretesting

Eight graduate nursing students who met the subject selection criteria were asked to pretest the instrument for readability. Adjustments in the instrument were made accordingly before it was used with the subjects for the study.

### Methods of Statistical Analysis

Because the Family Planning Locus of Control Scale was a Likert type scale, the results were summations of scores on the three subscales. It was an ordinal scale, allowing one to make comparisons between subjects and groups, but not an interval scale which would allow one to specify and quantify strength of tendencies towards Family Planning Locus of Control orientations (Sellitz et al., 1959). It did not allow one to say how much more a certain subject was oriented towards a certain Family Planning Locus of Control category than she was towards another. It merely allowed one to describe subjects in terms of which orientation they had stronger tendencies towards.

### Descriptive Data

Because this was a methodological and descriptive study, there were no independent or dependent variables. The subjects were described on frequency distribution tables listing the numbers and percentages of subjects in each of the descriptive categories.

Contingency analysis was also performed to cross tabulate family planning locus of control orientation with qualitative descriptive variables. Contingency tables are useful in presenting nominal and ordinal data, and allowed for "a description of the degree and magnitude of relationships between two variables" (Pollit & Hungler, 1978, p. 534).

Pearson correlation coefficients were calculated to show the relationship between family planning locus of control and quantitative descriptive variables. A Pearson correlation coefficient indicates the direction and significance of a relationship between two variables. In this study the  $p < .05$  level of significance was used.

A T-test was done to compare mean subscale scores among the first 10 subjects and the remaining 66 subjects. Use of the T-test allowed the researcher to determine whether there was a significant difference in responses on the Family Planning Locus of Control Scale between subjects who completed the instrument while the researcher was present at the site and those for whom the researcher was not present.

Factor analysis of the original 40 item scale was done to indicate which items tended to cluster together. Thus one could determine whether the subscales of internal, chance, and powerful others were present as anticipated.

#### Reliability Analysis

To assure that the Internal, Chance, and Powerful Others subscales each measured only one characteristic, and were therefore internally consistent or homogeneous, the coefficient alpha (i.e., Cronbach's alpha) was determined for each subscale. This method was chosen because it allowed the researcher to "estimate the split-half correlation of all possible ways of dividing the measure into two equal halves" (Polit & Hungler, 1978, p. 431). The alpha coefficients of Wallston, Wallston,



and DeVellis' (1978) Multidimensional Health Locus of Control Scales, Internal Health Locus of Control, Chance Health Locus of Control Scales, and Powerful Others Health Locus of Control, ranged from  $r = .673$  to  $r = .767$  for the individual A and B forms, and from  $r = .830$  to  $r = .859$  when the A and B forms were combined. In this study an alpha coefficient of  $r = .6$  was considered minimal for each of the subscales. Items from the original 40 item scale were selected for a final scale so that the highest alpha coefficient possible was obtained.

The alpha coefficients for both the original and final Family Planning Locus of Control subscales have been calculated and portrayed on alpha coefficient tables. In all other tables and calculations only the final subscale scores were used unless otherwise indicated.

### Validity

Validity of the instrument has not been statistically established. However, one could begin to assess criterion-related validity by comparing and contrasting Family Planning Locus of Control scales with expected outcomes discussed in the literature. Factor analysis also allowed the researcher to make beginning inferences about the construct validity of the instrument.

### Subscale Correlations

The subscales were correlated with each other to establish statistical independence. Statistical independence implies that each subscale measures a different concept (Wallston, Wallston, & DeVellis, 1978).

### Scoring

The Likert type scale used was a six-point scale in which each possible response had a possible score of from one to six. Since some of the questions were stated positively and some negatively, those stated negatively have had their scores reversed in the statistical analysis. The scores were not reversed on the questionnaire because the researcher decided that this could influence responses. The items from the three subscales were randomly mixed, but analyzed separately. The higher the score on each subscale, the stronger the tendency towards that Family Planning Locus of Control orientation.

### Rationale for Questionnaire Format

The first part of the questionnaire dealing with descriptive data consisted of questions which are to be answered by checking one of several mutually exclusive response categories. This method was chosen for ease in responding, clarity, and quickness. It also simplified the coding process for the researcher. Respondents were requested to write in any problems they had with clarity or the questions.

The Likert type Family Planning Locus of Control Scale was also a limited answer scale. The choices were listed under

each question, not in a separate column in an effort to minimize any tendency towards choosing a certain answer because of its placement on the form. The same format of having the responses placed under the questions was used as in the descriptive part of the tool.

### Data Collection Procedures

The following procedures were used in preparation for and execution of data collection in this study.

Letters were sent to the directors of nursing in six primary care sites in the Lansing area (see Appendix A) to introduce the researcher and inquire about policies and procedures for approval of administering the instrument at these sites. The researcher met with the nursing directors and physicians who were interested to explain the study, present the study proposal, and begin procedures necessary for approval. The meeting took place after the proposal was approved by the researcher's thesis committee.

Following approval by the primary care sites, the researcher set up times to be at the sites to administer the instrument. The researcher met with the receptionists when she arrived at the sites to explain the study, request their assistance in screening for and obtaining subjects, and give them a written format to follow (see Appendix B-2).

The receptionists screened female subjects for appropriate age and marital status when they arrived at the sites. Both clients and women accompanying clients were approached by the

receptionists and asked to participate in the study by completing a questionnaire. Those who showed interest were given a brief written description of the study and referred to the researcher. The following format was used by the researcher in each contact:

1. Introduction of self by name and position.
2. Assurance that subjects had read and understood the description of the study.
3. Assurance of anonymity by using numbers instead of names on the instrument.
4. Request for participation in the study verbally and by having subjects read and sign the consent form.
5. Request that subjects do not ask anyone questions relative to the questionnaire or the study once they have begun the questionnaire. If they have any comments, difficulties, or questions, they are requested to write these in the margins and/or speak to the researcher about these after completing the questionnaire.
6. Assurance that the researcher would be available in person that day and later by telephone to answer questions or discuss concerns relative to the questionnaire or the study.
7. Assurance of the right to refuse or withdraw from the study at any time without this in any way affecting their health care.
8. Request that subjects complete the instrument at the site and return it to the researcher there.
9. Clarification of the fact that there would be no direct benefit to subjects, and no formal follow-up.
10. Subjects completed the questionnaire and returned it to the researcher with written and/or verbal comments.

The researcher spent three days at one clinical site, following the above procedure, and obtaining 10 subjects. The researcher kept a daily log of encounters with the health

care providers and subjects. The response rate was much lower than anticipated. A week after data collection began, the researcher's schedule changed unexpectedly so that she would usually not be free to collect data in person during clinic hours. Therefore the data collection procedures were rewritten and presented to the researcher's thesis committee and the College of Nursing's Human Subjects Review Committee for approval. The revised data collection procedure was as follows:

The nurses who functioned as clinic coordinators in two primary care modules at one clinical site were approached and asked if they would be willing to serve as contact people for subjects in their modules. Both nurses agreed to participate. Their duties were to obtain the subjects' consent to participate in the study, answer some questions from subjects, and assure that the agreed-on data collection procedure was followed. The function of the receptionists did not change, except that they referred subjects to the designated nurses instead of the researcher. The designated nurses were given a check list of the following procedures to use with all subjects:

1. Introduction of self by name and position.
2. Asking subjects if they had received, read, and understood the description of the study, and assuring that they had received, read, and understood it.
3. Answering any questions relative to the study according to written instructions from the researcher (see Chapter IV, p. 101). If subjects had questions which could not be answered using the instructions, the nurses used their judgment as to whether this constituted a misunderstanding of the study, and also asked the subjects to telephone the researcher for clarification.

4. Assurance of anonymity by using numbers instead of names on the questionnaire, and by provision of envelopes in which subjects were to seal their questionnaires after completion.
5. Request for participation in the study verbally and by having subjects read and sign the consent form. Specific request that subjects give their telephone numbers as the researcher may telephone some subjects regarding their reactions to the questionnaire.
6. Request that subjects do not ask anyone questions relative to the questionnaire or the study once they have begun the questionnaire. If they have any comments, difficulties, or questions, they are requested to write these in the margins, ask the nurse after they have completed it, and/or contact the researcher by telephone.
7. Assurance of the right to refuse or withdraw from the study at any time without this in any way affecting their health care.
8. Request that subjects complete the instrument at the site, seal it in the envelope provided, and return it to the designated nurse.
9. Clarification of the fact that there would be no direct benefit to subjects who participated in the study.
10. Subjects completed the questionnaires, sealed them in the envelopes provided, and returned them to the designated nurses with written and/or verbal comments or questions.
11. The designated nurses kept a written log of verbal responses to the questionnaire and the study.

The researcher kept in telephone and face-to-face contact with the designated nurses on a weekly basis. Completed questionnaires were obtained from these nurses in person.

Every fifth subject was contacted by telephone by the researcher to determine subjects' responses to the questionnaire. If no telephone number was given by the subject, the next subject was used. The consent forms were separated from the

questionnaires before the telephone contact so that the researcher could not compare verbal comments with written responses or the way in which the questionnaire was completed.

Because the researcher was not physically present to administer the instrument to a majority of the subjects, a designated nurse in each site was responsible for administering the questionnaire and answering immediate questions of the subjects. To assure that uniform information was given to each subject, the nurses were requested to follow the data collection procedures exactly as outlined, and to answer questions according to the following guidelines. The nurses were given a list of possible questions subjects might ask and what would be an appropriate answer.

<u>QUESTION</u>	<u>ANSWER</u>
Why is this study being done?	It is part of a nurse's master's thesis, and is intended to help health care providers better understand and meet their clients' family planning needs.
Who will see the answers I give?	No one, not even the researcher will know that they are <u>your</u> answers. The researcher will code the answers with no name. No one besides the researcher will see your signature on the consent form.
What is locus of control?	It is an attitude people have about what causes events in their lives to turn out the way they do.

Why am I not to talk about my answers to others while I complete the questionnaire?

The questions are meant to measure how you feel and think, and how you interpreted them. If a question is hard to answer, please make a note of it in the margin. This is not a final scale, and your comments will be very helpful in making the final scale easy to use and understand.

Does it matter if I skip questions I am not sure about or do not completely understand?

Yes, it matters very much. If questions are skipped, your whole questionnaire is much less useful to the researcher. So please answer all questions, even if it seems like you are guessing, or giving an answer that only comes close to what you want to say.

The designated nurses were instructed to use the data collection procedures to answer procedural questions, and to use discretion in deciding whether a subject understood the study well enough to proceed with completing the questionnaire. They were asked to be open to questions which could arise relative to family planning but not specifically related to the study. Questions related to the study, but for which the data collection procedures and the above guidelines did not offer guidelines were referred to the researcher.

Of the subjects obtained while the researcher was not physically present, every fifth one was contacted by telephone by the researcher to assess the subjects' response to the questionnaire. This was done to further aid in the development of the Family Planning Locus of Control Scale, and to provide information for others who may wish to use this scale.



The telephone contacts were informal and open-ended, tapping subjects' responses to the following aspects of the questionnaire:

1. Thoughts and feelings the subjects had when asked to participate in the study.
2. Reasons for participating in the study.
3. Difficulties encountered in responding to the questionnaire.
4. Comments, questions, or concerns that related to the questionnaire, the study, or family planning.
5. Suggestions for improvement of the study or the questionnaire; for example, procedural changes which would have facilitated participation.

#### Human Rights Protection

The following measures were taken to assure that respondents' rights were protected. Participation in the study was voluntary, with written consent obtained from all respondents after assurance that their decisions regarding participation would not affect their health care, and that they were free to change their minds and not complete the questionnaire. Anonymity was assured by using numbers instead of names on the questionnaires. Respondents were told that except for brief telephone call follow-up with one out of five subjects, there would be no follow-up to this study. They were also told that there would be no direct benefit to them from participating, and that they could contact the researcher if they had any questions or concerns they wished to discuss.

Summary

In Chapter IV the researcher has provided an overview of the methodology and procedures utilized in this study. A discussion of operational definitions, population, instrument development and analysis, data collection procedures, and human rights protection was included. Data, methodological findings, and incidental findings are presented in Chapter V.

## CHAPTER V

### DATA PRESENTATION

#### Overview

The primary purpose of this study was to construct and test for internal consistency for the Family Planning Locus of Control Scale. A secondary purpose was to describe subject responses to the Family Planning Locus of Control Scale. Specifically, the following problem statement and research questions were address.

#### Problem Statement

To construct a reliability Family Planning Locus of Control (FPLC) Scale.

#### Research Questions

1. What are the relationships between the descriptive variables and scores on the Internal, Chance and Powerful Others subscales of the Family Planning Locus of Control Scale?
2. How do the items on the Family Planning Locus of Control Scale cluster together according to factor analysis?

3. Are the Internal, Chance, and Powerful Others subscales of the Family Planning Locus of Control Scale internally consistent according to the alpha coefficient method at the level of  $r = .6$ ?
4. What are the correlations between the Internal, Chance, and Powerful Others subscales of the Family Planning Locus of Control Scale?

In this chapter data and methodological results are presented. The results of the pretest are presented first, followed by a presentation of the data which describe the study sample and address the problem statement and research questions.

The study sample is described by age, length of marriage, race, religion, education, income, desired family size, agreement with husband on number and spacing of children, history of infertility number and planning status of pregnancies, number of spontaneous and induced abortions, regularity of contraceptive usage, and current and past methods of contraception. The relationships between subscale scores and descriptive variables are presented using Pearson correlation coefficients and contingency tables. Only significant relationships are presented in this chapter.

The results of factor analysis of the original 40 item Family Planning Locus of Control Scale are presented next. This presentation includes clustering of and responses to each

scale item. Expected clustering and scoring of items are presented in Appendix D.

The researcher next presents alpha coefficients, indicating reliability, and mean scores for each subscale. Correlations between the three subscales are also given.

Because of the methodological nature of this study the researcher has presented a summary of methodological findings in this chapter. These include a summary of responses of site staff to administering the instrument, verbal and written responses of subjects to participating in the study and to the instrument, and results of a telephone follow-up done with 12 subjects.

#### Pretesting

The entire instrument was pretested for readability on eight graduate nursing students who met the subject selection criteria. Adjustments in the instrument were made accordingly before it was used with the study subjects. The instrument used with study subjects is presented in Appendices B and C. Descriptive data on the pretest sample and suggestions made by this sample are as follows.

Pretest subjects ranged in age from 27 to 30 years of age. Length of marriage ranged from two to nine years. All subjects were white. One subject was Roman Catholic, 4 Protestant, and three of no religious affiliation. Income levels ranged from the \$7,000-\$8,999 category to the \$27,000-\$28,999 category. One subject had had a spontaneous

abortion and was currently trying to become pregnant. Another had had one child and was currently pregnant. All three of these pregnancies were described as planned. The other six subjects had never been pregnant. One subject reported wanting no children, another was unsure about how many she wanted, and the remaining six wanted two children each. All subjects except one reported that they agreed with their husbands on numbers and spacing of children. One subject reported being unsure whether or not she agreed with her husband on both number and spacing of any children.

All subjects except one reported using some method of contraception all of the time when they did not want to become pregnant. The other subject, who was currently pregnant, reported using some method most of the time. Among the six subjects neither pregnant nor trying to become pregnant, four used oral contraceptives, one used the diaphragm, and one used foam and condoms. Past methods included oral contraceptives, the IUD, the diaphragm, foam, condoms, and rhythm.

Suggestions from pretest subjects dealt mostly with instrument format and wording of instructions and the consent form. There were suggestions from three subjects that more columns be allowed for scoring some responses. One subject suggested adding withdrawal as a method of contraception, and adding one item to the Family Planning Locus of Control Scale: "I sometimes wish I would accidentally get pregnant so I wouldn't have to decide about whether or not to plan a

pregnancy." Appropriate changes in the instrument were made based on these suggestions.

No statistical analysis was done of pretest results. The pretest was not considered a pilot study. It was done merely to test the instrument for readability. Implications of pretest sample characteristics are discussed in Chapter VI.

In the following section data relevant to the study problem and research questions are presented.

### Presentation of Study Data

#### Descriptive Data

In this section of the study subjects are described by age, length of marriage, race, religion, education, income, desired family size, agreement with husband on number and spacing of children, history of infertility, number and planning status of pregnancies, number of spontaneous and induced abortions, regularity of contraceptive usage, and current and past methods of contraception. Implications of subject characteristics are discussed in Chapter VI.

There were 95 women who agreed to participate in the study. Of these only 77 were used as subjects in this study. Sixteen women did not meet subject criteria, and two left major portions of the instrument unanswered. Subjects were clients at primary care sites in the greater Lansing, Michigan, area.

Demographic Factors.

Age. As determined by subject criteria, subjects' ages ranged from 18 to 35. Mean age was 25.9 years. Spouses' ages were not assessed. Frequency of subjects' ages is presented in Table 1.

Table 1.--Age of Subjects.

Age Range	Frequency	Relative Frequency (%)
18-21	11	14
22-25	26	34
26-29	25	32
30-33	13	17
≥34	2	3
TOTAL	77	100

Length of Marriage. All subjects were currently married. Marital length ranged up to 13 years, with a mean of 4.5 years. The researcher did not assess whether subjects had been previously married. The frequency distribution of subjects' marital length is presented in Table 2.

Race. All subjects except one were white. This one subject was Hispanic.

Religious Affiliation. Forty-seven (61.0%) of the subjects were Protestant. Five of these had checked the category "other" and written in the name of a Protestant denomination: United Pentcostal, Christian Reformed, Presbyterian, and two Lutherans. Fifteen (19.5%) subjects were Roman Catholic, 1 was Jewish, 1 Morman, 1 Seventh Day Adventist, and 12 (15.6%)



Table 2.--Length of Marriage of Subjects.

Length of Marriage (Years)	Frequency	Relative Frequency (%)
0-1	14	18.2
2-3	21	27.2
4-5	17	22.1
6-7	13	16.9
8-9	5	6.5
10-11	5	6.5
≥12	2	2.6
TOTAL	77	100.00

of no religious preference. No attempt was made to measure strength of religious affiliation.

Education. Over half of the subjects (N=44, 57.1%) had educational levels beyond technical school. Eleven (14.3%) had been educated beyond the four-year college level. Spouses' educational levels were not assessed. Frequency of numbers of subjects at each educational level is presented in Table 3.

Table 3.--Education of Subjects.

Educational Level	Frequency	Relative Frequency (%)
Less Than High School	6	7.8
High School	18	23.4
Technical School	9	11.7
Some College	19	24.7
4-Year College	14	18.2
Professional or Graduate School	11	14.3
TOTAL	77	100.0

Income. Because income ranges were used to assess subjects' incomes the exact range of incomes is not known. Five subjects did not respond to the question on family income. Source of income was not assessed, nor was occupation. Frequency of subjects in each income category is presented in Table 4.

Table 4.--Income of Subjects' Families.

Income	Frequency	Relative Frequency (%)
0-8,999	13	16.9
9-14,999	12	15.6
15-20,999	13	16.9
21-26,999	10	13.0
>27,000	24	31.1
no response	5	6.5
TOTAL	77	100.0

#### Family Planning History.

Number of Children Desired. When asked how many children they wanted, subjects responded with replies ranging from zero to six, with a mean of 2.74. One subject who wanted four children indicated that two of these would be adopted. Her response was coded as four. The frequency distribution of the number of children subjects indicated they wanted to have is presented in Table 5.

Agreement with Husband on Number of Children. The majority of subjects (N=59, 76.6%) indicated that they agreed with their husbands on the number of children they wanted. Only seven (9.0%) indicated that they disagreed. It is not

Table 5.--Number of Children Desired by Subject.

Number	Frequency	Relative Frequency (%)
0	1	1.3
1	1	1.3
2	29	37.7
3	27	35.1
4	7	9.1
5	3	3.9
6	1	1.3
Not Sure	7	9.1
No Data	1	1.0
TOTAL	77	100.0

known whether those who disagreed wanted fewer or more children than their husbands. Eleven (14.3%) responded that they did not know whether or not they agreed with their husbands on the number of children they wanted.

Agreement with Husband on Spacing of Children. A majority of subjects (N=61, 79.2%) indicated that they agreed with their husbands on the spacing of any children they wished to have. Six (7.8%) disagreed, one subject gave no answer, and nine (11%) replied that they were unsure whether or not they agreed with their husbands on spacing of children. The nature of disagreement with husbands on spacing of children was not assessed.

History of Infertility. Forty-four subjects (57% of those who had been pregnant) reported no history of difficulty becoming pregnant. Four (5%) were currently having difficulty

becoming pregnant, and 12 (15.6%) had difficulty becoming pregnant in the past only.

Number of Pregnancies. Number of pregnancies per subject ranged from zero to six, with a mean of 1.82. Current pregnancies were included in this tabulation. Among the 60 women who had been pregnant, there were 140 pregnancies. Thirty-two (41.6%) of the subjects were currently pregnant, and two did not know whether or not they were pregnant. One who was uncertain had never been pregnant before. Because of the uncertainty, the two questionable pregnancies were not tabulated as pregnancies. Four (5.2%) of the subjects indicated tht they were trying to become pregnant. The frequency distribution of the number of pregnancies per subject is presented in Table 6.

Table 6.--Number of Pregnancies Per Subject.

Pregnancies	Frequency	Relative Frequency (%)
0	17	22.1
1	19	24.7
2	21	27.3
3	8	10.4
4	6	7.8
5	5	6.5
6	1	1.3
TOTAL	77	100.0

Planned Pregnancies. Eighty-two pregnancies were reported by subjects as planned, meaning that they occurred at the time desired and did not exceed the total number of pregnancies desired. Thirteen subjects who had ever been pregnant reported no planned pregnancies, and 22 reported only planned pregnancies. Frequency distribution of number of planned pregnancies per subject is presented in Table 7.

Table 7.--Number of Planned Pregnancies Per Subject.

Pregnancies	Frequency	Relative Frequency (%)
0	13	16.9
1	28	36.4
2	11	14.3
3	4	5.2
4	1	1.3
5	2	2.6
6	1	1.3
N.A.	17	22.1
TOTAL	77	100.0

Pregnancies Earlier Than Wished. Of the 33 subjects who had been pregnant and reported that none of their pregnancies occurred earlier than wished, 22 had only planned pregnancies, and 11 had only unwanted pregnancies. Seventeen had never been pregnant, and were not included in the cumulative frequencies. Frequency distribution of numbers of pregnancies per subject occurring earlier than wished is presented in Table 8.

Table 8.--Number of Pregnancies Per Subject Occurring Earlier Than Subject Wished.

Pregnancies	Frequency	Relative Frequency (%)
0	33	42.9
1	17	22.1
2	7	9.1
3	3	3.7
N.A.	17	22.1
TOTAL	77	100.0

Unwanted Pregnancies. Forty-six subjects who had been pregnant reported no unwanted pregnancies. No subjects had more than two unwanted pregnancies. Frequency distribution of numbers of unwanted pregnancies per subject is presented in Table 9.

Table 9.--Number of Pregnancies Per Subject Unwanted by Subject.

Pregnancies	Frequency	Relative Frequency (%)
0	46	59.7
1	10	1.3
2	4	5.2
N.A.	17	22.1
TOTAL	77	100.0

Spontaneous Abortions. Thirteen (16.9%) of the subjects reported having had a spontaneous abortion. Numbers of spontaneous abortions per subject ranged from zero to five, with a mean of .37 among those who had ever been pregnant.

The frequency distribution of numbers of spontaneous abortions per subject is presented in Table 10.

Table 10.--Number of Spontaneous Abortions Per Subject.

Spontaneous Abortions	Frequency	Relative Frequency (%)
0	47	61.0
1	8	10.4
2	3	3.9
3	1	1.3
5	1	1.3
N.A.	17	22.1
TOTAL	77	100.0

Induced Abortions. Eight (10.4%) of the subjects reported having had an induced abortion. None of these had had more than one induced abortion.

Frequency of Contraceptive Usage. The majority of the subjects, 57 or 74.0% indicated that they use some method of contraception all of the time when they do not wish to become pregnant. Twelve (15.6%) reported use most of the time, 4 (5.2%) reported use of a contraceptive method some of the time, and 4 (5.2%) reported never using contraceptives. These responses are in contrast to the responses to questions on method of contraceptive used (Tables 11 & 12) which indicate that only one subject reported no use of contraceptives in spite of not being pregnant and not trying to become pregnant.

Present Methods of Contraception. Nine subjects reported using more than one contraceptive method currently. Four used

condoms as their second method, two foam, and three natural family planning. The remaining 68 were using one or no method currently, or were pregnant or trying to become pregnant. The researcher did not tabulate which two contraceptive methods were used concurrently. The most recent method of contraception used by those pregnant or trying to become pregnant was not assessed. The frequency distribution of subjects' present method(s) of contraception is presented in Table 11.

Table 11.--Frequency of Subjects' Present Method(s) of Contraception.

Method	Frequency
Oral Contraception	15
IUD	7
Diaphragm	9
Condom	8
Foam	4
Natural	6
No Method/Trying/Preg.	36
None/Not Trying	1
TOTAL	86

Past Methods of Contraception. Two subjects reported use of 5 different methods of contraception in the past, 7 had used 4 different methods, 14 had used 3 different methods, 20 had used 2 different methods, 21 had used 1 different method of contraception in the past, 12 had never changed methods, and 1 had never used any method. Those who were pregnant or trying to become pregnant had their most recent



method tabulated as a past method. The frequency distribution of subjects' past method(s) of contraception is presented in Table 12.

Table 12.--Frequency of Subjects' Past Method(s) of Contraception.

Method	Frequency
Oral Contraception	47
IUD	12
Diaphragm	19
Condom	31
Foam	22
Natural	9
Other (Nursing)	1
No Method Ever Used	1
No Change	12
TOTAL	154

Summary. Descriptive findings of the study population have been presented in the preceding section. The specific characteristics presented were: age, length of marriage, race, religion, education, income, desired family size, agreement with husband on numbers and spacing of children, number and planning status of pregnancies, history of infertility, regularity of contraceptive use, and present and past method(s) of contraception.

Implications of some of these subject characteristics are presented in Chapter VI. The relationship between these descriptive variables and scores on the Family Planning Locus of Control Scale are presented in the following section.

### Research Questions

Research Question 1. What are the relationships between the descriptive variables and scores on the Internal, Chance, and Powerful Others subscales of the Family Planning Locus of Control Scale?

In this section the relationships between the descriptive variables and subscale scores are presented. Correlation coefficients are given for relationships between all quantitative variables and subscale scores. Contingency tables are used to present relationships between qualitative variables and subscale scores. In this chapter contingency tables are presented only for relationships significant at the  $p < .05$  level.

Correlation coefficients for relationships between quantitative variables and subscale scores are presented in Table 13. A significant and negative relationship was found between Internal scores and the total number of children subjects wished to have ( $r = -.19$ ). Thus subjects with higher Internal scores generally indicated that they wished to have fewer children.

In contrast, a significant and positive relationship was found between Chance scores and the total number of children subjects wished to have ( $r = .24$ ). The higher the total number of children a subject indicated she wanted, the higher her Chance score tended to be. A significant and positive relationship was also found between Chance scores and the

Table 13.--Pearson Correlation Coefficients: Family Planning Locus of Control Subscales and Descriptive Variables.

Descriptive Variables						
	Age	Marital Length	Income	Education	No. Children Want to Have	No. Pregnancies**
Internal	.01	.12	.01	.13	.19*	-.01
Chance	-.13	.01	.02	-.12	.24*	.18
Powerful Others	-.18	-.18	-.27*	-.22*	-.04	-.13
TOTAL	-.16	.01	-.18	-.24*	.01	.01

Descriptive Variables				
	No. Planned Pregnancies	No. Wanted Later	No. Wanted Never	No. Spontaneous Abortions
Internal	-.06	-.13	.03	-.02
Chance	-.05	.32*	.10	.21*
Powerful Others	.05	.27*	-.11	.06
TOTAL	-.05	.29*	.00	.15

\*p &lt; .05.

number of spontaneous abortions ( $r = .21$ ). The more spontaneous abortions a subject had had, the higher she tended to score on the Chance subscale.

The number of pregnancies subjects described as occurring too early was significantly and positively related to scores on both the Chance ( $r = .32$ ) and Powerful Others ( $r = .27$ ) subscales. The more pregnancies a subject characterized as occurring too early, the higher she tended to score on the Chance and Powerful Others subscales.

A significant and negative relationship was found between Powerful Others scores and the descriptive variables of income ( $r = -.27$ ) and education ( $r = -.22$ ). This indicated that subjects with higher income and educational levels tended to have lower scores on the Powerful Others subscale. No other significant relationships were found between quantitative variables and subscale scores. Implications of these relationships are discussed in Chapter VI.

In the following section the researcher presents significant cross tabulations between subscale scores and qualitative descriptive subject categories. The researcher has collapsed the contingency tables using a median split to correct for the skewedness of subjects' subscale scores. A median split places approximately half of the subjects in a high category and half in a lower category.

Subjects' agreement with husbands on number of children they wished to have was significantly related to Internal

subscale scores at the  $p < .05$  level. Those who indicated that they disagreed tended to have lower Internal subscale scores than either those who agreed or those who were uncertain whether or not they agreed. Cross tabulations between agreement with husband on number of children they wished to have and Internal subscale scores are presented in Table 14.

Table 14.--Cross Tabulation: Agreement with Husband on Number of Children and Score on Internal Subscale.

IFPLC SCORE	Agreement With Husband							
	Yes		No		Not Sure		Total	
	N	%	N	%	N	%	N	%
1-4	22	37.3	6	34.7	5	45.5	33	42.9
5-6	37	62.7	1	15.3	6	64.5	44	57.1
TOTAL	59	100.0	7	100.0	11	100.0	77	100.0

$$p < .05 \quad \chi^2 = 6.03 \quad 2df$$

Subject responses regarding their history of having difficulty becoming pregnant were significantly related to their Powerful Others subscale scores at the  $p < .05$  level. Those who had had problems becoming pregnant in the past only tended to score lowest on the Powerful Others subscale. Subjects having current difficulty becoming pregnant tended to have higher Powerful Others subscale scores. Cross tabulations between difficulty becoming pregnant and Powerful Others subscale scores are presented in Table 15.

Table 15.--Cross Tabulation: Difficulty Becoming Pregnant and Score on Powerful Others Subscale.

PEPLC SCORE	Difficulty Becoming Pregnant									
	Yes Now		No		Never Tried		Past Only		Total	
	N	%	N	%	N	%	N	%	N	%
1-2	1	25.0	14	31.8	7	41.1	10	83.4	33	41.6
3-6	3	75.0	30	62.2	10	58.9	2	16.6	45	58.4
TOTAL	4	100.0	44	100.0	17	100.0	12	100.0	77	100.0

Research Question 2. How do the items on the Family Planning Locus of Control scale cluster together according to factor analysis?

In this section the results of factor analysis of the 40 item Family Planning Locus of Control Scale are presented. Factor analysis is used to identify "which variables 'go together' as unified concepts" (Polit & Hungler, 1978, p. 584) and measure the various dimensions of a single concept.

Internal Family Planning Locus of Control. The following items on the Family Planning Locus of Control Scale (see Appendix C-6) clustered together and form the Internal Family Planning Locus of Control:

Item 1. The best way for me to prevent unplanned pregnancies is to follow the orders given to me by my health care provider exactly.

Item 2. It is irresponsible for me to have sex without using family planning measures when I do not wish to become pregnant.

- Item 3. The best attitude or approach for me to have regarding pregnancies is "what will be will be."
- Item 5. I am in control of whether or not I have an unplanned pregnancy.
- Item 9. If I really want to I can prevent having an unplanned pregnancy.
- Item 11. I do not purposefully look for information on family planning.
- Item 15. I am responsible to obtain information about family planning to use in making decisions about family planning.
- Item 38. I am responsible to try to space my pregnancies and children to fit my needs and abilities to care for a child.

In Table 16 the frequency distribution of how subjects responded to the Internal Family Planning Locus of Control items (1,2,3,5,9,11,15,38) of the instrument is presented. The researcher had anticipated that item 1 would be on the Powerful Others subscale, and that item 3 would be on the Chance subscale.

Chance Family Planning Locus of Control. The following items on the Family Planning Locus of Control Scale (see Appendix C-6) clustered together to form the Chance Family Planning Locus of Control.

- Item 4. The "surer" methods of family planning are not worth the risks.
- Item 7. The current trend towards smaller families has little influence on my attitudes about family planning.
- Item 8. Having an unplanned pregnancy would not upset my life that much.

Table 16.--Number of Subjects Identifying Degree of Agreement According to Item for Internal Subscale.

Item	Response					
	Strongly Agree	Agree	Mildly Agree	Mildly Disagree	Disagree	Strongly Disagree
1. Follow providers' orders exactly	22	28	17	6	3	1
2. Irresponsible not to use family planning measures	35	27	7	4	1	3
3. What will be will be	3	6	8	7	29	23
5. In control of unplanned pregnancy	16	45	9	1	2	4
9. Can prevent if want to	27	36	6	3	2	3
11. Do not look for information on planning	3	20	11	7	28	7
15. Responsible to obtain information	20	48	4	1	3	1
38. Responsible to space pregnancy per my needs	26	39	9	3	0	0



- Item 12. Family planning is a personal matter, not something I try to get opinions from other people on.
- Item 18. No matter what precautions I take, if I'm going to get pregnant, I will get pregnant.
- Item 20. Even if pregnancies are "blessings" I may choose to prevent or postpone them.
- Item 22. Following the instructions of my health care provider(s) on family planning has little impact on whether or not I will have an unplanned pregnancy.
- Item 26. If God wants me to become pregnant I will, regardless of any family planning methods I may use.
- Item 28. Even if there is some chance involved there is much I can do to prevent unplanned pregnancies.
- Item 37. The "surer" methods of family planning are definitely worthwhile because of their reliability.

In Table 17 the frequency distribution of how subjects responded to the Chance Family Planning Locus of Control items (4,7,8,12,18,20,22,26,28,37) of the instrument is presented. The researcher had anticipated that items 7, 12, and 22 would be on the Powerful Others subscale, and that item 20 would be on the Internal subscale.

Powerful Others Family Planning Locus of Control. The following items on the Family Planning Locus of Control Scale (see Appendix C-6) clustered together to form the Powerful Others Family Planning Locus of Control:

- Item 6. I am free to make my own family planning decisions, even when they differ from those of people important to me.
- Item 13. For me, whether I get pregnant or not is due to pure chance.

Table 17.--Number of Subjects Identifying Degree of Agreement According to Item for Chance Subscale.

Item	Response					
	Strongly Agree	Agree	Mildly Agree	Mildly Disagree	Disagree	Strongly Disagree
4. Sure methods not worth risk	4	17	10	14	26	5
7. Not influenced by trend to smaller families	9	30	10	6	20	0
8. Unplanned pregnancy would not upset life	11	21	18	8	14	5
12. Family planning personal matter	7	22	16	9	21	2
18. Precautions against pregnancy make no difference	2	14	6	10	30	14
20. Pregnancy blessings but may postpone-prevent	22	44	6	1	1	3
2. Health care providers have little impact re: unplanned pregnancy	2	7	7	8	39	13
26. If God wants pregnancy, I can't prevent	6	11	10	10	32	8
28. There is much I can do to prevent pregnancy	13	51	3	3	5	1
37. "Sure" methods worth it, more reliable	5	32	16	10	10	4

- Item 14. I can only use the type of family planning which my health care provider says I should.
- Item 16. Family planning decisions are too important for me to make on my own.
- Item 23. Children are gifts from God, so I should do little or nothing to prevent having children.
- Item 24. There are too many obstacles to successful family planning for me to feel that I am in control of this part of my life.
- Item 27. I would never go against any values and beliefs of my religious background in my decisions about family planning.
- Item 34. I sometimes get confused about family planning because I hear so many different things from different sources.
- Item 39. My relatives' wishes are a major influence on my family planning.
- Item 40. I sometimes wish I would accidentally get pregnant so I wouldn't have to decide about whether or not to plan a pregnancy.

In Table 18 the frequency distribution of how subjects responded to the Powerful Others Family Planning Locus of Control items (6,13,14,16,23,24,27,34,39,40) of the instrument is presented. The researcher had anticipated that items 13 and 40 would be on the Chance subscale. Possible explanations for items clustering differently than predicted are given in Chapter VI.

Research Question 3. Are the Internal Chance and Powerful Others subscales of the Family Planning Locus of Control Scale internally consistent according to the alpha coefficient method at the level of  $r = .6$ ?

Table 18.--Number of Subjects Identifying Degree of Agreement According to Item for Powerful Others Subscale.

Item	Response					No Reply
	Strongly Agree	Mildly Agree	Mildly Disagree	Disagree	Strongly Disagree	
6. Free to make own planning decisions	13	35	8	6	13	1
13. Pregnancy due to pure chance	3	8	2	2	35	27
14. Can use only method recommended by provider	2	14	13	7	34	7
16. Planning decisions too important for me alone	9	18	10	7	28	4
23. Children gift of God, shouldn't prevent	3	3	1	5	46	19
24. Too many obstacles for me to feel in control	2	6	4	5	49	11
27. Wouldn't contradict religious beliefs for F.P.	3	7	8	20	31	8
34. Get confused by all the different information	1	11	24	15	24	2
39. Relatives influence on family planning	1	0	4	11	32	29
40. Wish for accidental pregnancy	2	2	5	9	34	25

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Alpha reliabilities for all three subscales were higher than the  $r = .6$  minimum required. Although some items did not cluster as expected, factor analysis resulted in eight or 10 items per subscale. Results of factor analysis are presented in Tables 16-18. Expected and actual clustering and scoring of all Family Planning Locus of Control items are presented in Appendix D.

Table 19.--Means, Standard Deviations, Alpha Coefficients, and Number of Items of Subscales.

Subscale	Mean	Standard Deviation	Alpha	No. Items
Internal	4.5584	0.5255	.65	8
Chance	2.9610	0.7334	.76	10
Powerful Others	2.6623	0.7714	.73	10

Research Question 4. What are the correlations between the Internal, Chance, and Powerful Others subscales of the Family Planning Locus of Control Scale?

The Internal subscale was negatively correlated with the Chance subscale ( $r = .18$ ), ns), indicating that subjects with higher Internal scores tended to have lower Chance scores. The Chance and Powerful Others subscales were positively correlated ( $r = .28$ ,  $p < .05$ ) as were the Internal and Powerful Others subscales ( $r = .02$ ), ns). Thus subjects with high scores on the Powerful Others subscale tended to have high scores on both the Internal and Chance subscales. However,

the correlations between the subscales were all negligible. Correlations between the subscales are presented in Table 20.

Table 20.--Correlation Coefficients Between Subscales.

	Internal	Chance	Powerful Others
Internal	1.00	-.18	.02
Chance	-.18	1.00	.28*
Powerful Others	.02	.28*	1.00

\*p < .05.

#### Summary of Data Presentation

In the previous section data was presented which described the study population and addressed the research questions. Significant relationships were shown between scores on the subscales and various descriptive variables. Internal subscale scores were shown to be significantly related to total number of children subjects wished to have and agreement with husband on number of children wanted. Chance subscale scores were shown to be significantly related to number of pregnancies occurring earlier than wished and total number of children subjects wished to have. Scores on the Powerful Others subscale were significantly related to income, education, number of pregnancies occurring earlier than wished, history of difficulty becoming pregnant.

Factor analysis showed clustering of items into three subscales, with 10 items in 2 subscales, and 8 items in the

third. Eight items clustered into different subscales than researcher had anticipated. All three subscales had alpha coefficients greater than  $r = .6$ . Alpha coefficients were  $r = .65$  for the Internal subscale,  $r = .76$  for the Chance subscale, and  $r = .73$  for the Powerful Others subscale. Correlation coefficients between the three subscales showed negligible relationships between the subscales.

Because this study had as a primary goal the development of an instrument to measure locus of control in family planning, it is important to note methodological findings, especially subjects' responses to the instrument. Significance of the findings and suggestions for changes in the methodology are discussed in Chapter IV. The exact steps taken and revisions made in data collection procedures are presented in detail in Chapter VI. In the following section the researcher presents a summary of data collection procedures, verbal and written responses to the instrument, and results of the telephone follow-up.

### Methodological Findings

#### Summary of Data Collection Procedures

The instrument was pretested on eight graduate nursing students for readability, and appropriate revisions were made. Primary care sites in the greater Lansing, Michigan, area were contacted by letter (see Appendix A) and then in person to obtain permission to conduct the study at these sites. Five

sites were used. The researcher then met with nurses and receptionists at the sites to explain the study and their role in it.

The first 10 subjects were obtained while the researcher was present at the site. Receptionists screened potential subjects and referred those interested to the researcher to complete the questionnaire. However, due to time constraints, this procedure became impractical, and the researcher requested that one nurse in each site be responsible for administering the instrument. The nurse at the first site was unable to take this responsibility, so this site was no longer used. Receptionists and nurses were given written procedures to follow (see Appendix C and Chapter IV) and asked to note subjects' questions and comments regarding the instrument and the study.

The researcher contacted each site once or twice each week during the eight months of data collection to collect completed instruments. These contacts also served to remind the staff about the study. The site staff generally expected to be able to collect data more readily than was possible, and frequently reported being too busy to ask subjects to participate. They also expressed reluctance in approaching women who had children with them.

#### Subjects' Responses Noted by Site Staff

Participating nurses at the sites did not keep logs of subjects' responses, but they verbally reported subjects'



reactions to the study and instrument. When approached, few clients refused to participate. Several subjects requested permission to take the questionnaire home to complete. Since this was not allowed (per instructions by the researcher) the subjects stayed beyond their appointments to complete the questionnaire. No questions were asked of staff regarding instrument content.

#### Time to Complete the Instrument

Subjects were asked to indicate on the questionnaire the amount of time it took the instrument and whether or not they had had enough time. Replies ranged from five to 45 minutes, with a mean of 24 minutes and a mode of 15 minutes. Four subjects replied with comments instead of a number of minutes: "a little while," "a few minutes," "didn't have a watch," and "too long, 20 minutes or more." One subject gave no answer. Two subjects indicated that they had not had enough time to complete the instrument.

#### Effect of Researcher's Presence on Subjects' Responses

A T-test was done to compare mean subscale scores of the first 10 subjects with the remaining 67 subjects' scores. This was done to determine whether or not the presence of the researcher at the study site made a significant difference in responses on the Family Planning Locus of Control Scale. No significant difference was found between the two groups.

Written Comments on the Instrument

Subjects were asked to indicate in writing on the instrument any comments they had. Sixteen subjects gave written responses.

Six subjects commented on item 16, "Family planning decisions are too important for me to make on my own." Their comments dealt with their desire to have their husbands involved in family planning decision-making. A typical comment was, "I feel it's important to know how my husband feels." No subject commented that she wanted to make family planning decisions completely on her own.

Four subjects commented on Family Planning Locus of Control items regarding the risks of family planning. Two indicated that they thought that risks differ for different people, for example, "I feel the risks differ from one individual to the next, for me it's worth it." Two subjects identified different risks for different methods. For example, "I disagree in regards to sterilization. But I would strongly agree in regards to the pill."

Four subjects indicated that a history of infertility influenced their responses to Family Planning Locus of Control Scale items. For example, in response to item 13, "For me, whether I get pregnant or not is due to pure chance" one subject responded with a "strongly disagree" and "For me it's a major endeavor."

Three subjects distinguished between rhythm and other natural methods of family planning, The Sympto-Thermal and the Billings methods. In final tabulations these two methods were included with rhythm as natural family planning methods.

Two subjects noted a religious influence on their approaches to family planning. In response to item 23, "Children are gifts from God, so I should do little or nothing to prevent having children," one subject replied with a disagree and "Children are gifts from God, but He also wants us to be able to care for the one we have instead of having a houseful we can't care for properly."

Another subject explained the Roman Catholic view on family planning, and then elucidated her reasons for currently using a diaphragm during her post partum period. She planned to return to the Billings method when her menstrual cycles became reestablished.

Other individual subject comments clarified their responses. Regarding item 34, "I sometimes get confused about family planning because I hear so many different things from different sources," one subject responded with an agree and "I don't get confused but I do hear a lot." On item 8, "Having an unplanned pregnancy would not upset my life that much" one subject answered with an agree and "I adapt easily. But I like to make my own decisions." Another subject made the general comment, "I got confused on choosing mild disagree, disagree, or strongly disagree, etc."

### Telephone Follow-Up

Subjects were asked to write their telephone numbers on their consent forms because the researcher was doing a follow-up by telephone of some subjects. Forty subjects gave their telephone numbers on the consent forms. It is not known whether or not these 40 differed from those subjects who did not indicate their telephone numbers.

Twelve subjects were contacted by telephone for follow-up. None refused to speak with the researcher. When asked for their general reactions to the study and instrument 10 subjects replied that the questionnaire, especially the Family Planning Locus of Control Scale, was repetitive, but that they thought there was a reason for the repetition. One subject described completing the questionnaire as "like taking a test" and another compared the questionnaire to a psychological assessment. Two subjects mentioned that they had checked their answers for consistency. However, another subject noted that she purposefully did not check her answers for consistency because she thought this might make her responses less valid. Four subjects described the instrument as "too long."

Subjects were also asked what their thoughts and feelings were when asked to participate in the study, and why they had agreed to participate. Subjects responded that they had participated because a nurse had asked them to, to help with research or because of an interest in family planning. Thoughts and feelings ranged from an eagerness to express

their thoughts on a topic perceived as important and to help others to a "why not?" approach. No subject had difficulty remembering her reactions.

Although confidentiality had been stressed during data collection, subjects did not seem to realize that the researcher had separated the consent form from the rest of the instrument. Several subjects referred to their answers on their questionnaires, assuming that I was familiar with their answers.

#### Summary of Methodological Findings

In this section the methodological findings have been presented. These findings included a summary of the data collection procedures, verbal and written responses to the instrument, and results of the telephone follow-up. These findings have implications for further studies and for nursing interventions. These implications are presented in Chapter VI. In the following section, the researcher presents a brief review of incidental findings from cross tabulations done between descriptive variables.

#### Incidental Findings

This presentation of incidental findings focuses on relationships found between some of the descriptive variables. It is beyond the scope of this study to present these findings in detail using contingency analysis. Significant relationships were found between the following descriptive variables.

Number of pregnancies were related to number of spontaneous abortions at the level of  $p = .0000$ . The number of planned pregnancies were related to length of marriage ( $p < .05$ ) and to number of spontaneous abortions ( $p < .01$ ). Past method of contraception was related to number of pregnancies described as occurring too soon ( $p < .05$ ), pregnancies described as never wanted ( $p < .05$ ), and the total number of children subjects wanted to have ( $p < .005$ ). Religious affiliation was related to present method of contraception ( $p < .005$ ). Number of pregnancies described as never wanted were related to number of spontaneous abortions ( $p < .0001$ ) and number of induced abortions ( $p < .005$ ).

#### Summary

Data and methodological findings have been presented in this chapter. Each research question was addressed and relevant data presented. Other, more peripheral data is presented in appendices. Methodological and incidental findings were also presented in this chapter. In Chapter VI the researcher presents implications and recommendations based on these findings.

## CHAPTER VI

### SUMMARY, IMPLICATIONS AND RECOMMENDATIONS

#### Overview

In this chapter the researcher discusses and interprets the statistical and methodological findings that were presented in Chapter V. Implications for nursing practice and research are also presented, including areas for further study, and changes which should be made if this study is replicated.

The primary purpose of this study was to construct and test for internal consistency the Family Planning Locus of Control Scale. A secondary purpose was to describe the subjects' responses to the Family Planning Locus of Control Scale. In this chapter the researcher addresses the research questions as presented in Chapter V, and discusses implications of these findings.

The major study findings were as follows:

1. A Family Planning Locus of Control Scale was constructed with three subscales, each reliable at the  $r = .6$  level. Correlations between the subscales were negligible.
2. After factor analysis, eight FPLC items clustered into different subscales than the researcher had

anticipated. These items may lack sensitivity, and may have been interpreted differently by study subjects than by the researcher.

3. Subject responses to the Family Planning Locus of Control Scale indicated that this scale may have been of value in predicting the likelihood of pregnancies occurring earlier than wanted among the study sample. One cannot generalize beyond the study sample in a statistical sense, but one can make logical generalizations to the target population of married women between the ages of 18 and 35 of similar racial, educational, economic, and religious backgrounds as the study population.
4. Because of the complexities involved in administering and analyzing the Family Planning Locus of Control Scale, this scale may need revision and shortening before being used as a routine nursing assessment or screening of all clients with family planning needs.
5. Several subjects indicated that family planning responsibilities and decision making are jointly shared between themselves and their husbands.

In the following section the descriptive characteristics of the pretest and study populations are discussed. Specifically the possible implications of subject characteristics for this study are presented.



### Pretest Sample

The major limitation of the pretest sample was its homogeneity. All subjects were of the same educational level and in the same profession. The age range was small and only two (25%) had ever been pregnant. There had been no pregnancies characterized as unwanted or occurring earlier than wished. No pretest subject had a history of infertility or induced abortion(s). All subjects were white. All subjects were also familiar with the concept of locus of control as assessed by the Internal-External Scale and the Health Locus of Control Scale. Thus the pretest sample was not completely representative of the broader population for which the scale was intended, and pretest subjects may have understood or interpreted aspects of the instrument differently than did study subjects.

### Study Sample

As with the pretest sample, the study sample was limited by its homogeneity and non-representativeness of the population in need of family planning nursing intervention. The researcher controlled for marital status, age, and surgical sterilization to eliminate the influence of these factors on subject responses. This was necessary because of the limited number of study subjects and the limited scope of this study.

However, there were also unanticipated subject characteristics which further limit the generalizability of the

study findings. All subjects except one were white. As discussed in Chapter III, racial differences may influence both family planning behavior and outcomes as well as locus of control (Epstein & Kornorita, 1971; Fisch, 1974; House et al., 1977; Lefcourt & Ladwig, 1965; Segal & DuCette, 1973). The study sample was not racially diversified enough to enable an assessment of racial influences on Family Planning Locus of Control responses.

As shown in Tables 3 and 4 of Chapter V, many subjects were highly educated and/or in higher income levels. Previous studies of effects of income and education on family planning examined differences between those above versus below poverty (Anderson et al., 1977; Barnett, 1976) and between those with and without a high school education (Anderson, 1981). Having more subjects at lower educational and income levels would have allowed for better comparison with these previous studies.

A large proportion of subjects ( $N = 32$ , 41.6%) were currently pregnant. Since stage of pregnancy and planning status of current pregnancies were not assessed it is not possible to determine the precise effect of having a large number of subjects currently pregnant. It may be that stage of pregnancy influenced the impact current pregnancy has on family planning locus of control. Planning status of current pregnancies may also have influenced the degree of impact current pregnancy has on family planning locus of control. There

were no significant differences between subjects currently pregnant and those not pregnant or uncertain.

Subjects' responses may have been influenced by their presence at health care sites. Subjects may have had an increased concern regarding the confidentiality of their responses. Women who did not visit a selected health care site during the data collection period were eliminated as possible subjects. However, since this instrument was intended to be a tool for nurses and their family planning clients, it would be used primarily with clients at health care sites.

### Research Questions

In the following section the relationships between the descriptive variables and subscale scores are discussed.

#### Research Question 1

What are the relationships between the descriptive variables and scores on the Internal, Chance, and Powerful Others subscales of the Family Planning Locus of Control Scale?

Correlation coefficients showed several significant relationships between quantitative variables and subscale scores. The inverse relationships between Powerful Others subscale scores and income and educational levels may signify that those subjects with higher educational and income levels had less dependence on health care providers and others perceived as powerful. Subject with higher educational and

income levels may have had more exposure to differing opinions and viewpoints, resulting in less dependence on any single source. Who the subjects identified as powerful others was not assessed.

The number of children subjects wished to have was inversely related to Internal scores, and directly related to Chance scores. Subjects who wanted to limit their family size may have wished to take more responsibility for their family planning. Subjects who wished to have larger families may have wished to leave family planning more up to chance, taking a more passive role.

The direct relationship between the number of pregnancies occurring too early and Chance and Powerful Others scores could indicate that subjects' experiences of having pregnancies earlier than wished generated a belief in chance or powerful others control. On the other hand, a belief in chance or powerful others control could result in an increased likelihood of "too early" pregnancies. The increase in Chance scores among subjects with spontaneous abortions may also be a result of the experience of having spontaneous abortion(s). Social learning theory on which locus of control is based (Rotter, 1954) portrays locus of control as a learned phenomenon. Thus one would expect family planning experiences to influence and be influenced by family planning locus of control.

Using contingency analysis, cross tabulations were done between qualitative variables and subscale scores.

Agreement with husband on number of children wanted was significantly related to Internal scores. Subjects who agreed with their husbands on the number of children they wanted to have tended to have higher Internal scores, a tendency theoretically consistent with successful family planning. This finding points to the importance of the wife:husband relationship in influencing family planning attitudes among these subjects. In contrast, disagreement with husband on number of children was more common among subjects with lower Internal scores. Further assessment of women's perceptions of their partners' roles in family planning would be beneficial to the nurse with family planning clients. Comments written by subjects on the questionnaires support the importance of including husbands in family planning counseling and decision making.

There was a significant relationship between a history of difficulty becoming pregnant in the past only and Powerful Others score. Those subjects with past difficulty becoming pregnant tended to have lower Powerful Others scores. The reason for this relationship is unclear, but these subjects may have found that powerful others had little influence on their family planning decisions and outcomes. Comparing and contrasting subjects grouped by age, plans for future pregnancies, stage and planning status of current pregnancies may have provided more detailed and useful data.

In the following section the results of factor analysis of the original 40 item Family Planning Locus of Control Scale are discussed.

#### Research Question 2

How do the items on the Family Planning Locus of Control Scale cluster together according to factor analysis?

The results of the factor analysis of the Family Planning Locus of Control Scale have been presented in Chapter V. In this section the researcher discusses those items which clustered differently than had been anticipated.

On the Internal subscale there were two items which the researcher had anticipated would cluster into different subscales. Disagreement with item 1, "The best way for me to prevent unplanned pregnancies is to follow the orders given to me by my health care provider exactly" resulted in a higher Internal subscale score. Disagreement with this item may indicate an independence consistent with an internal orientation to family planning. Agreement with item 3, "The best attitude or approach for me to have regarding pregnancies is 'what will be will be'" resulted in a higher Internal subscale score. Although the researcher had predicted that agreement with this item would result in a higher Chance subscale score, subjects may have interpreted this item to mean an ability to cope with whatever outcomes their family planning has. Although all items on the Family Planning Locus of Control Scale were directed towards subjects themselves, it is

possible that the wording "for me" may have cued subjects to interpret these items in a more internal manner than intended by the researcher.

Four items clustered into the Chance subscale which the researcher had predicted would cluster into different subscales. Item 7, "The current trend towards smaller families has little influence on my attitudes about family planning" was expected to cluster with powerful others items. Disagreement with this item resulted in a higher Chance subscale score. Agreement with item 12, "Family planning is a personal matter, not something I try to get opinions from other people on" also resulted in a higher Chance score. Instead of implying dependence on powerful others as anticipated, these items may have reflected a social isolation and a lack of dependence on either self or powerful others in family planning matters. If family planning is left up to chance, perhaps it does not matter what attitudes are prevalent in society and what others think.

Disagreement with item 20, "Even if pregnancies are 'blessings' I may choose to prevent or postpone them" gave a higher Chance subscale score. Subjects may have perceived the item as addressing fate, not personal choice. Agreement with item 22, "Following the instructions of my health care provider(s) on family planning has little impact on whether or not I will have an unplanned pregnancy" gave a higher Chance score. Subjects who agreed with this item may have

thought that no one, including health care providers, had the power to determine family planning outcomes.

Two items clustered on the Powerful Others subscale that the researcher had anticipated would cluster with other subscales. Item 13, "For me whether I get pregnant or not is due to pure chance" was predicted to cluster with chance items. Instead, agreement with this item resulted in a higher Powerful Others subscale score. It was unclear why this item clustered with powerful others items, but it is apparent that subjects interpreted this item differently than the researcher did. Agreement with item 40, "I sometimes wish I would accidentally become pregnant so I wouldn't have to decide about whether to plan a pregnancy" resulted in a higher Powerful Others score. Subjects may have interpreted the term 'accidentally' differently from the chance or fate meaning the researcher had intended, and perceived it as meaning some other powerful person or force being in control.

In the above discussion of the results of factor analysis, the researcher had assumed that each subscale measured the concept it intended to measure. This was consistent with the study assumptions made in Chapter I. The items which clustered differently than expected may have lacked sensitivity, and the wording may have cued subjects in a different direction than intended.

The results of factor analysis allowed the researcher to conclude that three different dimensions were present within



The Family Planning Locus of Control Scale, with each item tapping a slightly different aspect of its subscale's dimension. Factor analysis was used to empirically identify "the underlying dimensionality of a large number of measures" (Polit & Hungler, 1978, p. 594), and to specify which items belong to each factor.

In the following section the reliability of the subscales are discussed.

### Research Question 3

Are the Internal, Chance, and Powerful Others subscales of the Family Planning Locus of Control Scale internally consistent according to the alpha coefficient method at the level of  $r = .6$ ?

Alpha coefficients allowed the researcher to draw conclusions about the degree to which items of a scale measured the same attribute. The larger the alpha coefficient, the more internally consistent the scale.

As shown in Table 27 of Chapter V the Powerful Others and Chance subscales had the highest alpha coefficient,  $r = .76$  and  $r = .73$  respectively. The Internal subscale had a lower alpha coefficient of  $r = .65$  which was still above the  $r = .6$  level chosen for this study. These alpha coefficients indicated an acceptable level of internal consistency within each subscale. It was not known what the alpha coefficients would have been if other methods of item selection such as a midpoint item mean had been employed. These internal consistencies were consistent with those found by

Levenson (1973). Levenson found the alpha coefficients of the Internal, Chance, and Powerful Others subscales of the Multidimensional Locus of Control Scale to be  $r = .508$ ,  $r = .725$ , and  $r = .733$  respectively. In Levenson's study and the current study alpha coefficients were lowest for the Internal subscale. Levenson speculated that the Internal subscale may not be as unidimensional as the other two scales.

The alpha coefficients of the Combined Multidimensional Health Locus of Control Scale were higher than in the current study. Alpha coefficients for the Internal Chance and Powerful Others subscales of the Combined Multidimensional Health Locus of Control Scale were  $r = .859$ ,  $r = .830$ , and  $r = .841$  respectively. The alpha coefficients for the individual Internal, Chance, and Powerful Others Multidimensional Health Locus of Control subscales were lower,  $r = .767$ ,  $r = .753$ , and  $r = .673$  for form A, and  $r = .710$ ,  $r = .691$ , and  $r = .715$  for form B (Wallston, Wallston, & DeVellis, 1978).

In the following section the correlations between the subscales are discussed.

#### Research Question 4

What are the correlations between the Internal, Chance, and Powerful Others subscales of the Family Planning Locus of Control Scale?

Inter-subscale correlations indicate the degree to which the subscales measure statistically independent concepts. The higher the correlations, the more similar, less independent the subscales are.

As shown in Table 28 of Chapter V the highest inter-subscale correlation was found between the Chance and Powerful Others subscales ( $r = .28$ ). This was similar to the intercorrelations found by Wallston, Wallston, and DeVellis (1978) between the Internal and Powerful Others subscales of the Multidimensional Health Locus of Control Scale ( $r = .204$ ). The positive correlation between the Chance and Powerful Others subscales of the Family Planning Locus of Control Scale showed a positive, statistically significant relationship of negligible magnitude. Thus one could not claim statistical independence between these two subscales, but the magnitude of the correlation indicated that the similarities between the two subscales were very low. In contrast to the current study and that of Wallston, Wallston, and DeVellis (1978), Levenson (1973) found a highly positive relationship between the Chance and Powerful Others subscales of the Multidimensional Locus of Control Scale ( $r = .604$ ). Thus the Chance and Powerful Others subscales of the Multidimensional Locus of Control Scale tapped similar concepts or attitudes.

As expected the Internal subscale was negatively correlated with the Chance subscale ( $r = -.18$ ). However this correlation was not statistically significant, indicating statistical independence of these two subscales. Previous studies have also shown negative relationships between Internal and Chance subscales, but of a higher magnitude. Wallston,

Wallston, and DeVellis (1978) found a correlation of  $r = -.293$  between the Internal and Chance subscales of the Multidimensional Health Locus of Control Scale. Similarly Levenson (1973) found a correlation of  $r = -.222$  between the Internal and Chance subscales of the Multidimensional Locus of Control Scale.

The correlation coefficient of  $r = .02$  between the Internal and Powerful Others subscales of the Family Planning Locus of Control Scale indicated statistical independence between these two subscales as well. The Internal and Powerful Others subscales of the Multidimensional Health Locus of Control Scale (Wallston, Wallston, & DeVellis, 1978) were also statistically independent at the  $r = .124$  level. In contrast, the Internal and Powerful Others subscales of the Multidimensional Locus of Control Scale (Levenson, 1973) had an inter-scale correlation coefficient of  $r = -.222$ , indicating significance at the  $p < .01$  level. Thus the Family Planning Locus of Control Scale measured three distinct dimensions, with inter-correlations between the dimensions in similar directions as and at equal or smaller correlations as similarly structured locus of control scales.

In the following section the researcher reviews and discusses the methodological findings of the study. This discussion focuses specifically on suggestions for changes in the study which should be made if this study is replicated. Data collection procedures are also summarized.

### Methodological Findings

As described in Chapter IV the instrument was pretested on eight graduate nursing students for readability, and appropriate changes were made. The instrument was then administered to 95 women at primary care sites in the greater Lansing, Michigan area. Seventy-seven of these women met subject criteria and were used as subjects in the study. The researcher was present at one primary care site during data collection from the first 10 subjects. For the remaining 67 subjects, a nurse was designated at each site to supervise the data collection and note subjects' responses.

Data were analyzed as described in Chapters IV and V. Frequency distribution tables and narrative were used to present data describing the pretest and study samples. Correlation coefficients and cross tabulations were used to describe the relationships between the descriptive characteristics of the study population and the subscale scores. By means of factor analysis the original 40 item Family Planning Locus of Control Scale was reduced to a scale of 28 items, with 8 items in the Internal subscale, 10 items in the Chance and Powerful Others subscales. Each subscale had an alpha coefficient of above  $r = .6$ . Inter-correlations of the subscales showed negligible correlations between the three subscales. Comparison of mean subscale scores, using a T-test, showed no significant difference between responses obtained from the first 10 subjects and the remaining 67.

Subject responses to the instrument were assessed by site nurses' observations, written comments by subjects on the instrument, and a telephone follow-up done with 12 subjects. Major concerns centered on the length and repetitiveness of the instrument, wording of items, clarification of husbands' involvement in family planning decisions, and clarification of responses. Some subject responses provided the impetus for suggestions for future studies. Other suggestions have been incorporated into the following suggestions for changes in the study.

#### Suggestions for Changes in Study

1. Part of the data analysis for this study should be an identification of the predominant Family Planning Locus of Control orientation. This would allow for a more useful nursing assessment from which to plan nursing interventions. The current data analysis does not indicate how many subjects there were of the three family planning locus of control orientations. To be of optimal use to the nurse in a clinical setting, this tool should allow for identification of primary orientation as well as strength of tendencies towards other family planning locus of control orientations.
2. The first half of the questionnaire on descriptive characteristics should be rewritten for clarity.

Specifically the following changes should be made:

- a. The researcher should assess the planning status of current pregnancies.
- b. Stage of pregnancy among subjects currently pregnant should be assessed.
- c. The basic data profile should be changed to clarify that current pregnancies are to be included in the number of times pregnant.
- d. The researcher should offer a broader range of income categories above \$30,000 a year to provide more meaningful data regarding income at that level.
- e. In addition to asking the total number of children subjects wish to have, the researcher should ask how many more biological children subjects wish to have.
- f. Assessment of past and current contraceptive methods should include an assessment of the most recent method among those currently pregnant, and an assessment of whether current unplanned pregnancies were method or user failures.
- g. The researcher should replace the phrase "rhythm method" with "natural family planning" to include methods such as the Billings method and the

Symptothermo method mentioned by subjects as differing from rhythm.

3. The researcher should clarify to subjects before they have completed the questionnaire that the items may seem repetitive, but that this is not being done to trick them or to find inconsistencies in their responses.
4. If possible, only those sites where a nurse is willing to take considerable responsibility for administering the instrument should be used.
5. The pretest sample should be more diverse and similar to the intended study population.

In the previous section suggestions for changes in the methodology and the instrument were presented. Other methodological findings have implications for nursing practice and research, and are discussed later in this chapter.

In the following section the researcher addresses the problem statement and discusses whether or not the objective of constructing a reliable Family Planning Locus of Control Scale was met.

#### Problem Statement

To construct a reliable Family Planning Locus of Control (FPLC) Scale.

As shown by the alpha coefficients of the Internal, Chance, and Powerful Others subscales, each subscale was reliable at the  $r = .6$  level. Factor analysis produced three subscales, with negligible inter-correlations. However,



since the validity of the subscales has not been established, one cannot assume that the subscales exactly measure their intended constructs. Thus this study was a pilot study even though the stated objective was met.

#### Summary: Background and Basis for Study

In this section the researcher summarizes the concepts and studies found in the literature which have formed the background and basis for this study.

Although the exact number of unplanned pregnancies in the United States can only be estimated, the large number of known unplanned births and legal abortions in this country (Anderson, 1981; Henshaw et al., 1981) points to a need for nurses to be able to better assist their clients in preventing unplanned pregnancies.

Successful family planning depends on an adequate knowledge base from which to form opinions and make decisions, active choices about desired number and spacing of children, motivation, and proper use of a reliable method of family planning. Family planning attitudes, behavior and outcomes are influenced by numerous factors. These factors include availability, accessibility, and acceptability of methods and services (Manisoff, 1973), plans to prevent versus delay pregnancy (Jones et al., 1980; Vaughan et al., 1977), lack of information and misinformation (Clancy & Brown, 1979; Miller, 1975; Presser, 1977; Zelnick & Kantner, 1979), education

(Anderson, 1981), race and socioeconomic status (Anderson, 1981; Barnett, 1976; Nye & Berardo, 1973).

One of the major concepts of this study, locus of control, was based on social learning theory (Rotter, 1954). According to this theory goal directed behavior is a function of the value placed on specific available reinforcers, beliefs about whether one's actions in a certain situation will produce desired reinforcers, and the meaning of the situation to the individual (Phares, 1976).

Locus of control was thought to be a multidimensional concept (Collins, 1974; Gurin et al., 1969; Hersche & Schiebe, 1967; Hochreich, 1974; Levenson, 1972 & 1974). Several multidimensional measures of locus of control have been developed, including the Multidimensional Locus of Control Scale (Levenson, 1972) and the Multidimensional Health Locus of Control Scale (Wallston, Wallston, & DeVellis, 1978).

Locus of control has been correlated with various health-related factors. These included immunizations (Dabbs & Kirscht, 1971), weight control (Saltzer, 1978), knowledge about hypertension (Wallston, Maides, & Wallston, 1970) and family planning. Studies on the relationship between family planning and locus of control have shown inconclusive and inconsistent results. They have also shown the need to consider factors besides locus of control when attempting to portray or predict family planning attitudes, behavior, or outcomes.

Locus of control has been shown to have implications for interventions with clients. Apparently locus of control orientation can be made more internal (Dua, 1970; Reimanis & Schaefer, 1970; Smith, 1970). When treatment is congruent with locus of control the results are generally more positive (Arakelian, 1980; Best & Steffy, 1975; Wallston, Wallston, Kaplan, & Maides, 1976).

Orem's nursing theory (1971 & 1980) formed the conceptual basis for this study. The primary goal of nursing interventions is health, defined by Orem in 1971 as "the state of wholeness or integrity of the individual human being, his parts, and his modes of functioning" (p. 42). Orem's 1980 definition of health is broader, incorporating the concepts of soundness and wholeness which

in regard to health, signify human functional and structural integrity, absence of genetic defects, and progressive integrated development of a human being as an individual unity moving toward higher and higher levels of integration. (p. 121)

Health has physical, psychic and intellectual aspects, and is placed in a developmental context. This researcher has defined health as a dynamic state of integrity in all spheres of an individual's life so that he or she can use his or her resources to function at the highest possible level on a daily basis.

In 1971 Orem distinguished between two kinds of self-care, universal and health-deviation. Universal self-care is focused on basic daily human needs such as physical

hygiene and emotional needs. Health-deviation self-care is action to seek and participate in health care from an external source, when one must depend on others for life or the execution of one's universal self-care activities. From this perspective the researcher characterized family planning as a universal self-care need.

In Orem's second edition (1980) developmental self-care needs were distinguished from universal self-care needs. Developmental self-care needs can be categorized as those that support life processes and promote development, and those that prevent, mitigate or overcome effects from developmental changes, crises and conditions which can affect development. In this later framework family planning would be seen as a developmental self-care need, one which supports and promotes health development in all spheres of life for individuals and their families.

The supportive-educative nursing system as presented in Chapter II provided the foundation for nursing intervention in family planning. In the following section the researcher presents implications for family planning nursing interventions based on study findings and the supportive-educative nursing system. The supportive-educative nursing system includes guidance and support, teaching, provision of a developmental environment, and periodic consultation (Orem, 1980).

### Implications for Nursing Practice

The major purpose of this study was to develop a reliable measure of locus of control specific to family planning to aid nurses in their assessment of clients' family planning needs. Although the validity of the scale was not established, a Family Planning Locus of Control (FPLC) Scale with three reliable subscales has been developed in this study. Subsequent nursing care involves planning, intervention, and evaluation. In this section the researcher discusses the usefulness of the Family Planning Locus of Control Scale as an assessment and evaluation tool, appropriate nursing plans and nursing interventions which may ensue from this assessment, the importance of including males in family planning counseling, the Revised Family Planning Nursing Intervention Algorithm and nursing implications of specific research findings.

The Family Planning Locus of Control Scale in its present form may be too long and statistically complex to be used routinely with all clients with family planning concerns. More study is needed on the usefulness of the final 28 item scale. However, the nurse may wish to use the Family Planning Locus of Control Scale in clinical practice with teens and clients with a history of unplanned pregnancies, to help clients clarify their own family planning attitudes, and to facilitate understanding and communication with clients. The scale could be shortened and simplified for use in screening

family planning clients for potential difficulties in their family planning. The Family Planning Locus of Control Scale could be simplified for ease in completion and analysis by being adapted to a Thurstone type scale with responses of agree or disagree.

The nurse may also wish to self-administer the Family Planning Locus of Control Scale to identify his or her approaches and biases in family planning. The scale could be used to help the nurse identify the degree of client and professional responsibility and control he or she believes is appropriate in family planning. The nurse with an internal orientation may tend to expect clients to assume major responsibility for their family planning, and blame them for unsuccessful family planning. The nurse with a powerful others orientation may tend to expect clients to base all family planning decisions on recommendations of health care providers and to use a chosen method exactly as directed. The nurse with a chance orientation may see little pattern or direction in family planning outcomes, believing that ultimately there is little one can do to control family planning outcomes.

In Chapter II the researcher presented an algorithm on nursing interventions based on an inventory of family planning locus of control (see Figure 2). It was assumed that clients could have a primary family planning locus of control orientation. However, it was found that few subjects had a very

strong chance or powerful others family planning locus of control orientation, and primary orientation was not assessed. Thus although interscale correlations were low a subject could have had orientations of equal magnitude on all three subscales. Thus it may be more beneficial and realistic to approach subjects and clients as potentially having tendencies in more than one direction. Even if a client has a primarily internal family planning locus of control orientation, she may also have chance or powerful others tendencies which could interfere with successful family planning. Thus several of the styles of nursing intervention portrayed in Figure 2 may be employed concurrently in working with a client. The nurse may provide information, ease conflicts or confusion, clarify values and point to cause and effect with a family planning client. The nurse may be seen as a powerful other in identifying contraindications for certain methods of contraception, and as a consultant in supplying requested information on appropriate methods.

In accordance with the study findings the researcher has revised the algorithm portrayed in Figure 2 as shown in Figure 3. Since clients may have aspects of internal, chance, and powerful others family planning locus of control orientations simultaneously, the nurse should assess the strength of each of these orientations for each client. The nurse should also assess the family planning values and goals of all clients and their partners, regardless of family planning locus of

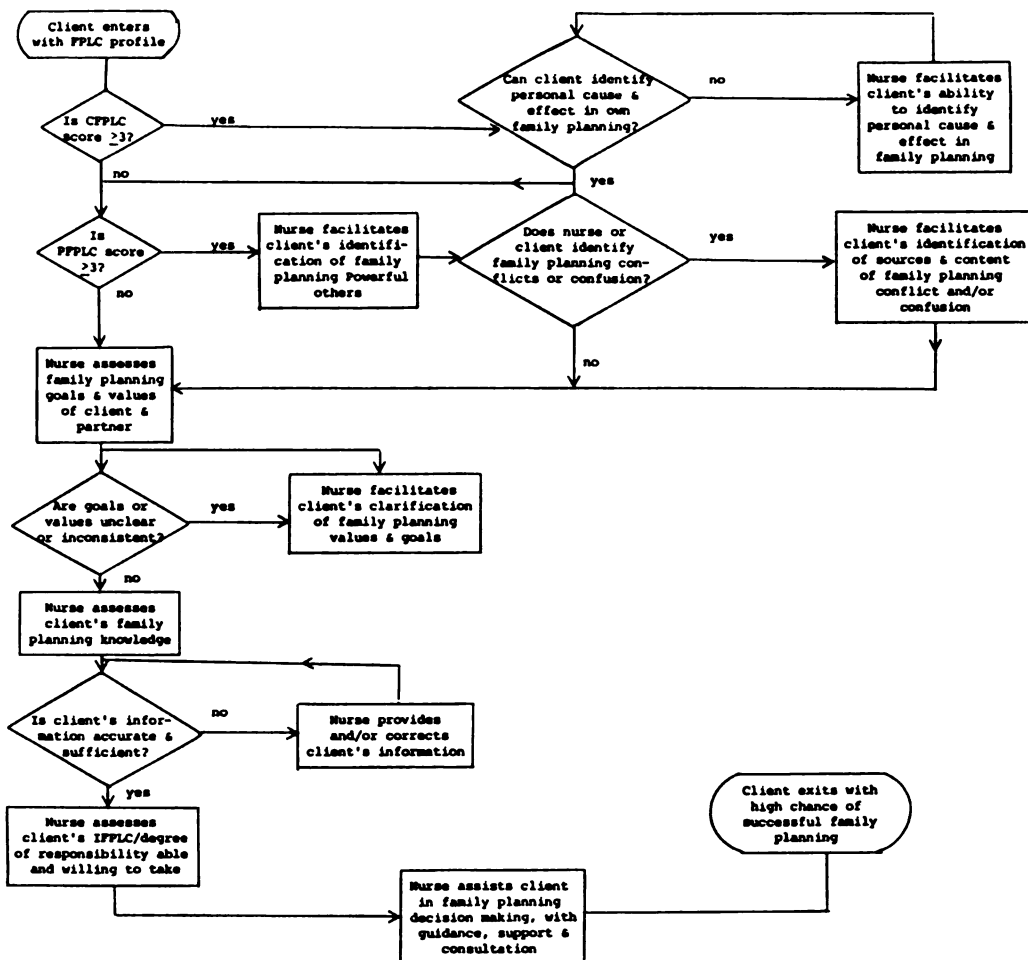


Figure 3. Revised Family Planning Nursing Intervention Algorithm.



control orientation. According to the algorithm portrayed in Figure 2 the nurse would assume that clients with an internal family planning locus of control who did not identify any family planning informational needs did not need any additional or corrected family planning information. Since this assumption may not be valid, in the algorithm in Figure 3 the nurse is asked to assess the informational adequacy and correctness of all clients.

As noted in the review of methodological findings, several subjects indicated that family planning responsibilities and decision making were jointly shared between themselves and their husbands. It is suggested that health care providers frequently do not include males in family planning counseling, and that some women would prefer having their sexual partners included. The characteristics of individuals who would prefer this approach is not known, but the nurse should assess clients' wishes in this area as well as couples' ability to communicate on family planning. Sexual partners may be seen as powerful others by clients, having a potentially crucial impact on the direction and success of family planning. A couple may also assume a single identity in this area so that the couple approaches family planning as a unit, identifying others as possible powerful others. Subjects who distinguished between their husbands and other individuals or groups may have taken this latter approach. In such an instance the nurse could not obtain a

complete family planning assessment by considering only the attitudes and concerns of the female half of the couple. Including males in family planning counseling could also result in an increased willingness of males to take personal responsibility in family planning decisions and behavior. For example, a male might be more willing to use condoms if he and his partner chose this method together than if a nurse recommended the use of condoms to his partner, ignoring his role in this decision. When the male is unable to visit the nurse for family planning counseling the nurse could emphasize to the female the possible importance of discussing family planning concerns and decisions with him.

Agreement with husband on number of children wanted correlated positively with internal orientation. It was not known whether agreement or the lack of it was a cause or an effect of the family planning locus of control orientation, but the nurse may wish to counsel clients to promote consensus on family planning. The nurse should assess clients' communication with their partners on family planning values, goals, and plans as well as their agreement on number and spacing or any children they wish to have. The nurse may also find it beneficial to assess his or her clients' family planning decision-making process: how are family planning decisions made, who makes them and is there any conflict? The significant number of subjects who indicated that they were uncertain whether or not they agreed with their husbands

on number ( $N = 11$ ) and spacing ( $N = 9$ ) of children may point to a lack of communication on family planning between these couples. By taking a nonjudgmental approach, by being accessible to both male and female clients and by raising issues such as communication on family planning the nurse may provide an environment conducive to more open and better discussion of family planning values, goals, and plans among couples. The importance of husbands' family planning attitudes among the study sample was documented.

The positive relationship between chance orientation and the number of spontaneous abortions should alert the nurse to a possible loss of feelings of control over family planning among women who have had one or more spontaneous abortion. Women with a history of spontaneous abortion(s) may be in special need of support as well as guidance, education, or consultation from the nurse. Without blaming the client for her spontaneous abortion, the nurse could counsel her in developing realistic plans and expectations for successful family planning in the future.

The wide variety and distribution of past and current methods of contraception among study subjects points to a need for the nurse to be fully aware of the advantages and disadvantages of all methods of contraception. When working with clients who wish to prevent pregnancy, the nurse's main concern is often helping the couple choose a reliable method that they will use (Tanis, 1977). Thus the nurse needs to

be able to inform his or her clients of all factors to be considered in family planning decision making (Tyler & Hunt, 1976). Many subjects changed methods of contraception. The reasons for these changes were not assessed. Clients dissatisfied with their family planning method(s) may seek out a nurse for family planning consultation, or they may respond to inquiries into their satisfaction with their contraceptive method. The nurse should routinely assess his or her clients' contraceptive satisfaction.

Comments made by subjects clarifying the influence of religious beliefs on their family planning point to a need for nurses to consider possible religious influences on family planning. It is also notable that the study findings did not support previous research which showed that Roman Catholics desired and had larger families (Anderson, 1981; Barnett, 1976; Coombs, 1978; Handel, 1973). The nurse must be cautioned against making assumptions about family planning or locus of control based on religious affiliation.

In spite of the generally high educational level of the study population, only 74% of the subjects indicated that they always use some method of contraception whenever they do not wish to become pregnant. The nurse cannot assume that his or her clients are regularly using their contraceptive methods when they do not wish to become pregnant. There have been many speculations regarding reasons for contraceptive nonuse, but more systematic research is needed in this area.

The nurse can assist clients in overcoming obstacles to regular contraceptive usage by aiding them in identifying ambivalence in their family planning goals and their reasons for irregular contraceptive usage.

The Family Planning Locus of Control Scale may also serve as an evaluation tool to assess the impact of nursing intervention in family planning. Since it may be difficult to evaluate long-term outcomes of family planning interventions, the nurse may wish to use this scale to evaluate whether or not his or her interventions led to a change in family planning locus of control. For example, the nurse could administer the Family Planning Locus of Control Scale before and after a series of group sessions intended to help clients feel more in control of and responsible for their family planning behavior and outcomes. The nurse should not assume that an internal family planning locus of control is needed for successful family planning. Instead the nurse should assess whether clients identify a desire to gain more control over their family planning and assist them in attaining their goals.

In the preceding section the researcher discussed possible uses of the Family Planning Locus of Control Scale, the importance of including males in family planning counseling, the Revised Family Planning Nursing Intervention Algorithm, and nursing implications of specific research findings.

Because of the limited scope of this study, the researcher has recommended that future studies be done to investigate aspects of family planning and locus of control which could not be included in the present study. Other areas for further nursing research have been suggested based on study findings and personal interests of the researcher. These suggestions are presented in the following section.

#### Implications for Nursing Research

Based on findings and limitations of this study as well as personal interests of the researcher, the researcher has identified several areas for further investigation.

1. Repeat the study with the recommended changes and a larger more diverse and representative sample.
2. Measure family planning locus of control before and after nursing intervention to assess the ability of nursing intervention to change family planning locus of control.
3. Assess whom subjects identify as powerful others in their family planning attitudes and decisions, and measure the significance the identity of powerful others has for family planning behavior and outcomes as well as for family planning locus of control responses.
4. According to social learning theory (Rotter, 1954) the value individuals place on an outcome or reward

greatly influences their behavior towards that goal. Therefore one should assess the value subjects place on family planning success as well as their family planning locus of control. These measures together may have more predictive value for family planning than the FPLC Scale alone.

5. The Family Planning Locus of Control Scale should be tested for content validity to ensure representativeness of the items, and for criterion validity if a valid criterion for family planning attitudes is available; and the construct validity of the scale should be more thoroughly examined.
6. The Family Planning Locus of Control Scale should be tested for test-retest reliability to determine stability of the measure, and to compare and contrast results with those of other studies.
7. Long-term studies should be done to determine whether or not family planning locus of control orientation changes over time and following various family planning experiences.
8. The Family Planning Locus of Control Scale should be adapted to be used with couples to determine how they perceive each others' attitudes and roles in family planning decision making, and whether they perceive an internal, chance, or powerful others control over their family planning attitudes, behavior, and outcomes.

9. A more in-depth follow-up on selected subjects should be done to further assess the usefulness of the Family Planning Locus of Control Scale in clinical settings.
10. The Family Planning Locus of Control Scale should be administered concurrently with a measure of social desirability to determine which items correlate with social desirability and whether or not certain categories of subjects are more influenced by the social desirability of scale items.
11. The Family Planning Locus of Control Scale should be administered in non-health care settings and compared and contrasted with results from this study to determine the influence of setting on subject responses and to assess responses from a broader population.
12. A different method of item selection should be tried. One could use the criteria used in developing the Multidimensional Health Locus of Control Scale (Wallston, Wallston, & DeVellis, 1978): an item mean of around 3.5, a "wide distribution of response alternatives on the item" (p. 163), a significant item-to-a priori scale correlation, item wording, and a low correlation with a measure of social desirability. Internal consistency could then be assessed, and the results could be compared and contrasted with those of the present study.



13. The Family Planning Locus of Control Scale should be correlated with a similar scale such as the Multidimensional Health Locus of Control Scale to identify whether the FPLC measures similar but statistically distinct concepts.
14. The degree of involvement in family planning males wish to have should be assessed. This assessment should include an identification of factors which promote their willingness to take family planning responsibility.
15. The relationship between self-care and family planning locus of control should be examined to determine whether family planning self-care is distinct from yet enhanced by an internal family planning locus of control orientation.
16. The final 28 item Family Planning Locus of Control Scale should be tested for subject responses to identify the usefulness of this scale in a clinical setting.
17. The effect of tailoring family planning interventions to individuals or groups based on family planning locus of control orientation should be assessed.

In the following section the researcher summarizes the major limitations of the study.

### Limitations

Several conceptual limitations have been identified by the researcher. According to social learning theory as discussed by Lowery (1981) four variables must be considered simultaneously when conducting locus of control research: "behaviors, expectancies, reinforcements, and situations" (p. 295). Specifically, the "ambiguity or novelty of the situation in which a behavior is predicted" (p. 295) and "the value of the reinforcement for the individual" (p. 295) should be assessed. Although the researcher has not attempted to predict family planning behaviors or outcomes with the Family Planning Locus of Control Scale, the study is limited by omitting an assessment of situational and value variables. In this study the researcher focused on only one limited aspect of family planning, locus of control as applied to prevention of unplanned pregnancies. As discussed in the conceptual framework and the literature review, family planning is infinitely more complex than presented in this study, and the reader is cautioned to approach family planning from a broader perspective than has been done in this study. The conceptual model of this study is also limited by its simplified view of family planning locus of control orientation. The model presented in Chapter II indicates that clients will have a major locus of control orientation. However, as discussed earlier in this chapter, clients may have more than

one family planning locus of control orientation simultaneously. As has also been discussed earlier in this chapter, this study was limited by the exclusion of males from the study population. Although it was beyond the scope of this study to assess family planning locus of control orientations of both males and females, the nurse is cautioned that any assessment of family planning attitudes that ignores males is incomplete. Finally, the conceptual framework of this study has been limited by the fact that locus of control cannot be used to identify cause and effect. Thus the researcher cannot make conclusions about whether family planning behaviors and experiences were causes of or effects of clients' family planning locus of control orientation.

Besides the conceptual limitations, there are several methodological limitations. Several of these limitations have been addressed in the suggestions for changes in this study and suggestions for further study. The basic data profile was limited by the wording of items and areas which were not adequately assessed. The use of a six-point scale did not allow subjects to indicate that they neither agreed or disagreed with scale items: they were forced to make a choice. The small and non-random sample limits the statistical generalizability of study results. The data collection procedure was time-consuming and should be modified to improve efficiency if this study is to be replicated.

### Summary

The background and basis for this study have been summarized previously in this chapter on pages 159-162. In this chapter the researcher has discussed the major study findings and addressed the research questions. Implications for nursing research and practice have also been explored. In summary, the researcher has concluded that a locus of control scale specific for family planning can be constructed with three subscales, Internal, Chance, and Powerful Others, each internally consistent and with negligible interscale correlations. The predictive usefulness of the Family Planning Locus of Control Scale seems limited, but the scale has been primarily developed as a nursing assessment tool. To be used in the clinical setting, the scale should be shortened and simplified for ease in administration, responding, and interpreting. It was suggested that this study should be repeated with modifications and with a larger more diverse sample. The usefulness of the scale in the clinical setting should be further assessed. It was also suggested that the Family Planning Locus of Control Scale may be a useful self-assessment tool for nurses, to help them in identifying their attitudes towards family planning, and the roles they perceive as appropriate for clients and health care providers in family planning.

Throughout this study, the researcher emphasized that locus of control, even when specific to family planning, is

only one aspect of family planning attitudes. Family planning is too complex to be assessed or predicted on the basis of a single measure, but it is hoped that this study and this scale can assist nurses in obtaining data about their clients' attitudes towards family planning that might otherwise not be assessed.

## APPENDICES

APPENDIX A

LETTER TO NURSING DIRECTORS REQUESTING  
PERMISSION FOR STUDY

APPENDIX A

LETTER TO NURSING DIRECTORS REQUESTING  
PERMISSION FOR STUDY

1514 E. Spartan Village  
E. Lansing, Michigan

Director of Nursing

Director of Nursing:

I am a graduate student in Michigan State University's Family Nurse Clinician Program. For my master's thesis I am developing and testing a questionnaire to measure certain attitudes about family planning. I plan to administer the questionnaire to married women between 18 and 35 years of age at various primary health care sites in and near the Lansing area.

If possible, I would like to administer this questionnaire to 25-50 women at . The only thing that would be required of the respondents would be about 20 minutes to fill out the questionnaire while they are at the clinic. They would be completely free to refuse, not complete the questionnaire, and contact me if they had any questions or concerns regarding the instrument or topics related to it. All answers will be confidential.

Any information you can provide regarding the possibility of conducting part of my study at your facility, and the appropriate channels and procedures for approval would be greatly appreciated. I hope to begin this stage of my study as soon as possible.

I would also like to meet with you if you are interested to discuss this in greater detail. I will be glad to answer any questions, and provide you with a copy of materials which will be reviewed by the Michigan State University School of Nursing Human Subjects Review Committee.

Sincerely yours,

Mary Lagerwey Voorman



APPENDIX B

DESCRIPTION, CONSENT AND INSTRUCTION  
FORMS USED WITH FIRST TEN SUBJECTS  
DEVELOPMENT OF A FAMILY PLANNING  
LOCUS OF CONTROL SCALE

## APPENDIX B

### DESCRIPTION, CONSENT AND INSTRUCTION FORMS USED WITH FIRST TEN SUBJECTS DEVELOPMENT OF A FAMILY PLANNING LOCUS OF CONTROL SCALE

#### Description of the Study

The study which you have been requested to participate in is designed to develop a scale to measure family planning practices and attitudes among married women between the ages of 18 and 35. It is hoped that this scale will be of future benefit in helping health care providers better understand and thus meet their clients' needs in family planning.

If you choose to participate, you will be asked to take about 20 minutes to complete a questionnaire while you are at this health care facility. Your decision will not be revealed, and all answers will be completely confidential. No names will be associated with your answers. Other health care providers and I will gladly discuss anything related to this study if you request.

If you think you may be interested in participating in this study and/or would like more information regarding it, please speak with me.

Mary Lagerwey Voorman R.N.  
Family Nurse Clinician  
Student  
Michigan State University

Instruction to Receptionists  
at Primary Care Sites

The purpose of this study is to develop a scale to measure family planning practices and attitudes among married women between 18 and 35 years of age. Your assistance in selecting potential participants will be greatly appreciated. Women coming to this facility for personal care or accompanying another person are to be requested to participate if they are of the appropriate age and marital status. Your role will be to select those women of ages 18 through 35 who are married, and ask them if they would be willing to take about 20 minutes while they are waiting to fill out a questionnaire on their family planning behaviors and attitudes. Assure them that their decision and all answers will be completely confidential. If they agree to participate or are interested hand them a copy of the description of the study, and refer them to me. Thank you very much.

Mary Lagerwey Voorman, R.N.

MICHIGAN STATE UNIVERSITY  
SCHOOL OF NURSING

Development of a Family Planning  
Locus of Control Scale

Mary Lagerwey Voorman, R.N., Family Nurse Clinician Student 355-2760

The study in which you are about to participate is designed to measure family planning practices and attitudes. It is hoped that this scale will be of future benefit in helping health care providers better understand and meet their clients' needs in family planning.

There will be no formal follow-up to the study, and no direct benefit to you if you participate. The questionnaire may make you more aware of feelings, concerns, or questions about family planning or related areas. I am available to discuss these after you have completed the questionnaire. You may talk with me here or phone me at home. You may also wish to discuss these feelings, concerns, or questions with your health care provider(s).

Participation in the study will take approximately 20 minutes of your time, and will require you to respond to a written questionnaire regarding your family planning behavior and attitudes, as well as descriptive factors such as age and length of marriage. The questionnaire is to be completed while you are at this facility without consulting myself or others while you are responding. If questions or statements seem unclear, please answer the best you can, and make a comment in the margin.

Your answers will be held in complete confidence. The data will be presented in such a way that you will not be identified as a participant. Your name will not be attached to the questionnaire, and no one else will know how you responded. Refusal to participate or withdrawal at any time from the study will also be confidential and will not jeopardize your health care in any way. You may ask any questions you wish before you begin as well as after.

If you agree to participate, please sign the following statement.

\_\_\_\_\_  
Mary Lagerwey Voorman, R.N. Date

I, \_\_\_\_\_, state that I understand what is required of me  
(PRINT NAME)  
as a participant in the above-described study, and agree to take part in  
this investigation. I have had an opportunity to ask questions.

\_\_\_\_\_  
(SIGNATURE OF SUBJECT) Date

Instructions

Please respond to the following questions and statements by circling the appropriate answer for you. There are no right or wrong responses. If you have any concerns or questions once you have started, please make a note of it in the margin and/or let me know after you have completed the questionnaire. Do not talk with anyone about the questions and statements while you are completing the questionnaire. I will gladly discuss any concerns or questions you have after you have finished. Please complete the questionnaire and return it to me before you leave the building.

The term "family planning" is used here to mean any means used to delay or prevent unplanned pregnancies. It does not mean induced abortions nor effects directed towards trying to become pregnant.

Women are receiving health care from a variety of health care professionals. Therefore the term "health care provider" is used to refer to nurses, physicians, or physicians' assistants whom you have seen regarding family planning care or concerns.

Please return the questionnaire to me here after you have completed it. Thank you very much for your participation in the study.

APPENDIX C

INSTRUMENT USED WITH LAST 67 SUBJECTS

DEVELOPMENT OF A FAMILY PLANNING

LOCUS OF CONTROL SCALE

## APPENDIX C

### INSTRUMENT USED WITH LAST 67 SUBJECTS DEVELOPMENT OF A FAMILY PLANNING LOCUS OF CONTROL SCALE

#### Description of Study

The study which you have been requested to participate in is designed to develop a scale to measure family planning practices and attitudes among married women between the ages of 18 and 35. It is hoped that this scale will be of future benefit in helping health care providers better understand and thus meet their clients' needs in family planning.

If you choose to participate, you will be asked to take about 20 minutes to complete a questionnaire while you are at this health care facility. Your decision will not be revealed, and all answers will be completely confidential. Your name will not be associated with your answers. I will be available by phone if you have any questions related to the study.

If you think you may be interested in participating in this study, please speak with \_\_\_\_\_.

Mary Lagerwey Voorman, R.N.  
Family Nurse Clinician Student  
Michigan State University  
355-2760 (available evenings  
after 6 and weekends)

Instructions to Receptionists  
at Primary Care Sites

The purpose of this study is to develop a scale to measure family planning practices and attitudes among married women between 18 and 35 years of age. Your assistance in selecting potential participants will be greatly appreciated. Women coming to this facility for health care, or accompanying another person, are to be requested to participate if they are of the appropriate age and marital status. Your role will be to select those women of ages 18 through 35 who are married, and ask them if they would be willing to take about 20 minutes to fill out a questionnaire on their family planning behaviors and attitudes. All questionnaires must be completed here; none are to be taken home. Hand a copy of the description of the study to those who may be interested in participating, and refer them to one of the nurses who will give them a copy of the questionnaire. Thank you very much for your assistance.

Mary Lagerwey Voorman, R.N.



MICHIGAN STATE UNIVERSITY  
COLLEGE OF NURSING

Development of a Family Planning  
Locus of Control Scale

Mary Lagerwey Voorman, R.N., Family Nurse Clinician Student 355-2760  
(available evenings after 6, and weekends)

The study in which you are about to participate is designed to measure family planning practices and attitudes. It is hoped that this scale will be of future benefit in helping health care providers better understand and meet their clients' needs in family planning. There will be no direct benefit to you if you participate.

Participating in the study will take approximately 20 minutes of your time, and will require you to respond to a written questionnaire regarding your family planning behavior and attitudes, as well as descriptive factors such as age and length of marriage. The questionnaire is to be completed while you are at this facility without consulting anyone while you are responding. If questions or statements seem unclear, please answer the best you can, and make a comment in the margin.

The questionnaire may make you more aware of feelings, concerns, or questions about family planning or related areas. You may phone me at home or contact your health care provider(s) here to discuss these feelings, concerns, or questions. Some subjects may also be contacted by phone regarding their reactions to the questionnaire.

Your answers as well as any communication between us will be kept in complete confidence, and will not become part of your health records here. The data will be presented in such a way that you will not be identified as a participant. Your name will not be attached to the questionnaire, and no one else will know how you responded. Refusal to participate or withdrawal at any time from the study will also be confidential and will not jeopardize your health care in any way. You may ask \_\_\_\_\_ any questions you wish before you begin as well as after you complete the questionnaire.

If you agree to participate, please sign the following statement.

\_\_\_\_\_  
Mary Lagerwey Voorman, R.N. Date

I, \_\_\_\_\_, state that I understand what is  
(PRINT NAME AND PHONE NUMBER)

required of me as a participant in this study, and agree to take part in this investigation. I have had an opportunity to ask questions of

\_\_\_\_\_.

\_\_\_\_\_  
(SIGNATURE OF SUBJECT) Date

Instructions

Please respond to the following questions and statements by writing in, checking, or circling the appropriate answer for you. There are not right or wrong responses. If you have any concerns or questions once you have started, please make a note of it in the margin and/or let \_\_\_\_\_ know after you have completed the questionnaire. Some subjects may be contacted by telephone later regarding their reactions to the questionnaire. Do not talk with anyone about the questions and statements while you are completing the questionnaire. I will gladly discuss any concerns or questions if you call me in the evening after 6:00 or on the weekend (355-2760). Please complete the questionnaire before you leave the building.

The term "family planning" is used here to mean any means used to delay or prevent unplanned pregnancies. It does not mean induced abortions nor efforts directed towards trying to become pregnant.

Women are receiving health care from a variety of health care professionals. Therefore the term "health care provider" is used to refer to nurses, physicians, or physicians' assistants whom you have seen regarding family planning care or concerns.

Please place your completed questionnaire in the envelope, seal it, and return it to \_\_\_\_\_ before you leave. Thank you very much for your participation in the study.

Site	_____
	(1)
Pt. I.D.	_____
	(2-4)
Card No.	1
	(5)
Date	_____
	(6-11)

### Basic Data Profile

1. What is your age? (WRITE IN) \_\_\_\_\_ (12)
2. What is your marital status? (CHECK ONE) \_\_\_\_\_ (13)
  1. Married \_\_\_\_\_
  2. Single, never married \_\_\_\_\_
  3. Separated \_\_\_\_\_
  4. Divorced \_\_\_\_\_
  5. Widowed \_\_\_\_\_
3. How long have you been married? (WRITE IN) \_\_\_\_\_ (14)
4. Are either you or your husband sterilized? (CHECK ONE) \_\_\_\_\_ (15)
  1. Yes \_\_\_\_\_
  2. No \_\_\_\_\_
5. Are you now pregnant? (CHECK ONE) \_\_\_\_\_ (16)
 

1. Yes _____	2. No _____	3. Uncertain _____
↓	↓	↓
GO TO QUESTION 7	GO TO QUESTION 6	GO TO QUESTION 6
6. Are you now trying to become pregnant? \_\_\_\_\_ (17)
  1. Yes \_\_\_\_\_
  2. No \_\_\_\_\_
7. How many times have you been pregnant? \_\_\_\_\_ (18)
 

1. Never _____	2. One or more times _____
↓	↓
GO TO QUESTION 12	WRITE IN NUMBER OF TIMES _____
	↓
	GO TO QUESTION 8

8. How many of your pregnancies were planned? (WRITE IN) \_\_\_\_\_ (19)
- \_\_\_\_\_
- If all were planned, go to Question 10.
- If not all were planned, go to Question 9.
9. Of those pregnancies which were unplanned, how many did you want, but would have preferred later? (WRITE IN) \_\_\_\_\_ (20)
- \_\_\_\_\_
10. How many spontaneous abortions (miscarriages) have you had? (WRITE IN) \_\_\_\_\_ (21)
- \_\_\_\_\_
11. How many induced abortions have you had? (WRITE IN) \_\_\_\_\_ (22)
- \_\_\_\_\_
12. Have you ever had difficulty getting pregnant? (CHECK ONE) \_\_\_\_\_ (23)
1. Yes, currently \_\_\_\_\_
2. No, I've had no difficulty getting pregnant \_\_\_\_\_
3. No, I've never tried to get pregnant \_\_\_\_\_
4. Yes, in the past only \_\_\_\_\_
13. What is the total number of children you wish to have? (WRITE IN) \_\_\_\_\_ (24)
- \_\_\_\_\_
14. Do you and your husband agree about the number of children you wish to have? (CHECK ONE) \_\_\_\_\_ (25)
1. Yes \_\_\_\_\_
2. No \_\_\_\_\_
3. Undecided \_\_\_\_\_
15. Do you and your husband agree about the spacing of any children you wish to have? (CHECK ONE) \_\_\_\_\_ (26)
1. Yes \_\_\_\_\_
2. No \_\_\_\_\_
3. Undecided \_\_\_\_\_

16. When you do not wish to become pregnant, how regularly do you use some method of family planning? (CHECK ONE)             
(27)
1. All of the time
  2. Most of the time
  3. Some of the time
  4. None of the time
17. How many people live in your household? Include yourself, and all relatives and nonrelatives who live in your home at least half of the year. (WRITE IN)             
(28-29)
- 
18. How much formal education have you completed? (CHECK ONE)             
(30)
1. None or some grammar school (less than 8 grades completed)
  2. Some high school (8-11 grades completed)
  3. Graduated from high school
  4. Technical, business, or trade school (some or completed)
  5. Some college or junior college (less than 4 years completed)
  6. 4-year college degree
  7. Postgraduate or professional school (some or completed)
19. What is your family's total yearly income before taxes and other deductions? Include income from all sources. (CHECK ONE)             
(31-32)
- |   |   |
|---|---|
| 00. Below \$5,000 <u>          </u>     | 07. \$17,000-\$18,999 <u>          </u> |
| 01. \$5,000-\$6,999 <u>          </u>   | 08. \$19,000-\$20,999 <u>          </u> |
| 02. \$7,000-\$8,999 <u>          </u>   | 09. \$21,000-\$22,999 <u>          </u> |
| 03. \$9,000-\$10,999 <u>          </u>  | 10. \$23,000-\$24,999 <u>          </u> |
| 04. \$11,000-\$12,999 <u>          </u> | 11. \$25,000-\$26,999 <u>          </u> |
| 05. \$13,000-\$14,999 <u>          </u> | 12. \$27,000-\$28,999 <u>          </u> |
| 06. \$15,000-\$16,999 <u>          </u> | 13. \$29,000 or over <u>          </u>  |
20. What is your racial or ethnic background? (CHECK ONE)             
(33)
1. White
  2. Black
  3. Hispanic
  4. Native American Indian
  5. Oriental
  6. Other

21. What is your religious preference? (CHECK ONE)

\_\_\_\_\_  
(34)

1. Roman Catholic \_\_\_\_\_
2. Protestant \_\_\_\_\_
3. Jewish \_\_\_\_\_
4. Other (SPECIFY) \_\_\_\_\_
5. None

22. What is your current method of family planning? (CHECK AS MANY AS APPLY)

\_\_\_\_\_  
(35-36)

1. Oral contraceptives (the Pill) \_\_\_\_\_
2. IUD \_\_\_\_\_
3. Diaphragm \_\_\_\_\_
4. Condom (rubber) \_\_\_\_\_
5. Foam \_\_\_\_\_
6. Rhythm \_\_\_\_\_
7. Other (SPECIFY) \_\_\_\_\_
8. None, I am pregnant or try to become pregnant \_\_\_\_\_
9. None, but I am not pregnant or trying to become pregnant \_\_\_\_\_

23. What method of family planning have you used in the past that you are not currently using? (CHECK AS MANY AS APPLY)

\_\_\_\_\_  
(37-38)

1. Oral contraceptives (the Pill) \_\_\_\_\_
2. IUD \_\_\_\_\_
3. Diaphragm \_\_\_\_\_
4. Condom (rubber) \_\_\_\_\_
5. Foam \_\_\_\_\_
6. Rhythm \_\_\_\_\_
7. Other (SPECIFY) \_\_\_\_\_
8. None, I have never used a method of family planning \_\_\_\_\_
9. None, I have never switched methods of family planning \_\_\_\_\_

Site	_____
	(1)
Pt. I.D.	_____
	(2-4)
Card No.	2
	(5)
Date	_____
	(6-11)

### Family Planning Locus of Control Scale

Respond to these statements by circling the appropriate answer according to how strongly you disagree or agree with each statement. Do not respond according to how you and your husband feel as a couple. There are no right or wrong responses.

1. The best way for me to prevent unplanned pregnancies is for me to follow the orders given to me by my health care provider(s) exactly. \_\_\_\_\_ (12)

strongly disagree    disagree    mildly disagree    mildly agree    agree    strongly agree

2. It is irresponsible for me to have sex without using family planning measures when I do not wish to become pregnant. \_\_\_\_\_ (13)

strongly disagree    disagree    mildly disagree    mildly agree    agree    strongly agree

3. The best attitude or approach for me to have regarding pregnancies is "what will be will be." \_\_\_\_\_ (14)

strongly disagree    disagree    mildly disagree    mildly agree    agree    strongly agree

4. The "surer" methods of family planning are not worth the risks. \_\_\_\_\_ (15)

strongly disagree    disagree    mildly disagree    mildly agree    agree    strongly agree

5. I am in control of whether or not I have an unplanned pregnancy. \_\_\_\_\_ (16)

strongly disagree    disagree    mildly disagree    mildly agree    agree    strongly agree

6. I am free to make my own family planning decisions, even when they differ from those of people important to me. (17)
- strongly disagree    disagree    mildly disagree    mildly agree    agree    strongly agree
7. The current trend towards smaller families has little influence on my attitudes about family planning. (18)
- strongly disagree    disagree    mildly disagree    mildly agree    agree    strongly agree
8. Having an unplanned pregnancy would not upset my life that much. (19)
- strongly disagree    disagree    mildly disagree    mildly agree    agree    strongly agree
9. If I really want to, I can prevent having an unplanned pregnancy. (20)
- strongly disagree    disagree    mildly disagree    mildly agree    agree    strongly agree
10. If I am determined to have successful family planning, there is little chance of my having an unplanned pregnancy. (21)
- strongly disagree    disagree    mildly disagree    mildly agree    agree    strongly agree
11. I do not purposefully look for information on family planning. (22)
- strongly disagree    disagree    mildly disagree    mildly agree    agree    strongly agree
12. Family planning is a personal matter, not something I try to get opinions from other people on. (23)
- strongly disagree    disagree    mildly disagree    mildly agree    agree    strongly agree
13. For me, whether I get pregnant or not is due to pure chance. (24)
- strongly disagree    disagree    mildly disagree    mildly agree    agree    strongly agree



14. I can only use the type of family planning which my health care provider says I should. (25)
- |                      |          |                    |                 |       |                   |
|----------------------|----------|--------------------|-----------------|-------|-------------------|
| strongly<br>disagree | disagree | mildly<br>disagree | mildly<br>agree | agree | strongly<br>agree |
|----------------------|----------|--------------------|-----------------|-------|-------------------|
15. I am responsible to obtain information about family planning to use in making decisions about family planning. (26)
- |                      |          |                    |                 |       |                   |
|----------------------|----------|--------------------|-----------------|-------|-------------------|
| strongly<br>disagree | disagree | mildly<br>disagree | mildly<br>agree | agree | strongly<br>agree |
|----------------------|----------|--------------------|-----------------|-------|-------------------|
16. Family planning decisions are too important for me to make on my own. (27)
- |                      |          |                    |                 |       |                   |
|----------------------|----------|--------------------|-----------------|-------|-------------------|
| strongly<br>disagree | disagree | mildly<br>disagree | mildly<br>agree | agree | strongly<br>agree |
|----------------------|----------|--------------------|-----------------|-------|-------------------|
17. Since I can avoid having an unplanned pregnancy, it is important to me to use some method of family planning when I do not want to become pregnant. (28)
- |                      |          |                    |                 |       |                   |
|----------------------|----------|--------------------|-----------------|-------|-------------------|
| strongly<br>disagree | disagree | mildly<br>disagree | mildly<br>agree | agree | strongly<br>agree |
|----------------------|----------|--------------------|-----------------|-------|-------------------|
18. No matter what precautions I take, if I am going to get pregnant, I will get pregnant. (29)
- |                      |          |                    |                 |       |                   |
|----------------------|----------|--------------------|-----------------|-------|-------------------|
| strongly<br>disagree | disagree | mildly<br>disagree | mildly<br>agree | agree | strongly<br>agree |
|----------------------|----------|--------------------|-----------------|-------|-------------------|
19. It would not bother me to use a method of family planning of which my husband does not approve. (30)
- |                      |          |                    |                 |       |                   |
|----------------------|----------|--------------------|-----------------|-------|-------------------|
| strongly<br>disagree | disagree | mildly<br>disagree | mildly<br>agree | agree | strongly<br>agree |
|----------------------|----------|--------------------|-----------------|-------|-------------------|
20. Even if pregnancies are "blessings" I may choose to prevent or postpone them. (31)
- |                      |          |                    |                 |       |                   |
|----------------------|----------|--------------------|-----------------|-------|-------------------|
| strongly<br>disagree | disagree | mildly<br>disagree | mildly<br>agree | agree | strongly<br>agree |
|----------------------|----------|--------------------|-----------------|-------|-------------------|

21. It is not important to me to make my own decisions about family planning. (32)
- strongly disagree    disagree    mildly disagree    mildly agree    agree    strongly agree
22. Following the instructions of my health care provider(s) on family planning has little impact on whether or not I will have an unplanned pregnancy. (33)
- strongly disagree    disagree    mildly disagree    mildly agree    agree    strongly agree
23. Children are gifts from God, so I should do little or nothing to prevent having children. (34)
- strongly disagree    disagree    mildly disagree    mildly agree    agree    strongly agree
24. There are too many obstacles to successful family planning for me to feel that I am in control of this part of my life. (35)
- strongly disagree    disagree    mildly disagree    mildly agree    agree    strongly agree
25. Some of the things I hear about family planning are not completely accurate. (36)
- strongly disagree    disagree    mildly disagree    mildly agree    agree    strongly agree
26. If God wants me to become pregnant I will, regardless of any family planning methods I may use. (37)
- strongly disagree    disagree    mildly disagree    mildly agree    agree    strongly agree
27. I would never go against any values and beliefs of my religious background in my decisions about family planning. (38)
- strongly disagree    disagree    mildly disagree    mildly agree    agree    strongly agree

28. Even if there is some chance involved, there is much I can do to prevent unplanned pregnancies. (39)
- strongly disagree    disagree    mildly disagree    mildly agree    agree    strongly agree
29. It is best for me to listen to my health care provider(s) in family planning matters because he or she most likely knows what is best for me. (40)
- strongly disagree    disagree    mildly disagree    mildly agree    agree    strongly agree
30. If I was not satisfied with the family planning method(s) recommended to me by my health care provider(s), I would use a different method. (41)
- strongly disagree    disagree    mildly disagree    mildly agree    agree    strongly agree
31. Family planning is as much my husband's responsibility as mine. (42)
- strongly disagree    disagree    mildly disagree    mildly agree    agree    strongly agree
32. I depend on my husband to remind me to use my/our family planning method when I do not wish to become pregnant. (43)
- strongly disagree    disagree    mildly disagree    mildly agree    agree    strongly agree
33. The health care providers I see are only consultants in my decisions about family planning; it is up to me to choose what is best for me. (44)
- strongly disagree    disagree    mildly disagree    mildly agree    agree    strongly agree
34. I sometimes get confused about family planning because I hear so many different things from different sources. (45)
- strongly disagree    disagree    mildly disagree    mildly agree    agree    strongly agree

35. The most important influence on my family planning decisions is my family's ability to care for a new child. (46)

strongly disagree    disagree    mildly disagree    mildly agree    agree    strongly agree

36. My friends' attitudes influence my feelings about family planning. (47)

strongly disagree    disagree    mildly disagree    mildly agree    agree    strongly agree

37. The "surer" methods of family planning are definitely worthwhile because of their reliability. (48)

strongly disagree    disagree    mildly disagree    mildly agree    agree    strongly agree

38. I am responsible to try to space my pregnancies and children to fit my needs and abilities to care for a child. (49)

strongly disagree    disagree    mildly disagree    mildly agree    agree    strongly agree

39. My relatives' wishes are a major influence on my family planning. (50)

strongly disagree    disagree    mildly disagree    mildly agree    agree    strongly agree

40. I sometimes wish I would accidentally get pregnant so I wouldn't have to decide about whether or not to plan a pregnancy. (51)

strongly disagree    disagree    mildly disagree    mildly agree    agree    strongly agree

41. How long did it take you to complete this questionnaire?  
(WRITE IN) (52)

\_\_\_\_\_

42. Did you have sufficient time to complete this questionnaire? (53)

1. Yes \_\_\_\_\_  
2. No \_\_\_\_\_

APPENDIX D

ITEM CLUSTERING: EXPECTED AND ACTUAL

# APPENDIX D

## ITEM CLUSTERING: EXPECTED AND ACTUAL

### Expected

INTERNAL		CHANCE		POWERFUL OTHERS	
Positive	Negative	Positive	Negative	Positive	Negative
2	11	3	10	1	6
5	31	4	28	14	7
9		8	37	16	12
15		13		23	19
17		18		24	22
20		26		27	25
21		40		29	30
33				32	
38				34	
				35	
				36	
				39	

### Actual

INTERNAL		CHANCE		POWERFUL OTHERS	
Positive	Negative	Positive	Negative	Positive	Negative
2	1	4	7	13	6
3	11	8	20	14	
9		12	28	16	
15		18	37	23	
38		22		24	
		26		27	
				34	
				39	
				40	

### Discarded

10	30
17	31
19	32
21	33
25	35
29	37

APPENDIX E

FINAL FAMILY PLANNING LOCUS OF CONTROL ITEMS

## APPENDIX E

### FINAL FAMILY PLANNING LOCUS OF CONTROL ITEMS

1. The best way for me to prevent unplanned pregnancies is for me to follow the orders given to me by my health care provider(s) exactly.
2. It is irresponsible for me to have sex without using family planning measures when I do not wish to become pregnant.
3. The best attitude or approach for me to have regarding pregnancies is "what will be will be."
4. The "surer" methods of family planning are not worth the risks.
5. I am in control of whether or not I have an unplanned pregnancy.
6. I am free to make my own family planning decisions, even when they differ from those of people important to me.
7. The current trend towards smaller families has little influence on my attitudes about family planning.
8. Having an unplanned pregnancy would not upset my life that much.
9. If I really want to, I can prevent having an unplanned pregnancy.
10. I do not purposefully look for information on family planning.
11. Family planning is a personal matter, not something I try to get opinions from other people on.
12. For me, whether I get pregnant or not is due to pure chance.
13. I can only use the type of family planning which my health care provider says I should.



14. I am responsible to obtain information about family planning to use in making decisions about family planning.
15. Family planning decisions are too important for me to make on my own.
16. No matter what precautions I take, if I am going to get pregnant I will get pregnant.
17. Even if pregnancies are "blessings" I may choose to prevent or postpone them.
18. Following the instructions of my health care provider(s) on family planning has little impact on whether or not I will have an unplanned pregnancy.
19. Children are gifts from God, so I should do little or nothing to prevent having children.
20. There are too many obstacles to successful family planning for me to feel that I am in control of this part of my life.
21. If God wants me to become pregnant I will, regardless of any family planning methods I may use.
22. I would never go against any values and beliefs of my religious background in my decisions about family planning.
34. Even if there is some chance involved, there is much I can do to prevent unplanned pregnancies.
24. I sometimes get confused about family planning because I hear so many different things from different sources.
25. My friends' attitudes influence my feelings about family planning.
26. I am responsible to try to space my pregnancies and children to fit my needs and abilities to care for a child.
27. My relatives' wishes are a major influence on my family planning.
28. I sometimes wish I would accidentally get pregnant so I wouldn't have to decide about whether or not to plan a pregnancy.

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