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SELF-CARE PRACTICES OF WOMEN WHO EXPERIENCE NAUSEA AND VOMITING DURING PREGNANCY

By

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ABSTRACT

SELF-CARE PRACTICES OF WOMEN WHO EXPERIENCE NAUSEA AND VOMITING DURING PREGNANCY

By

Michele K. Sturt

A descriptive study using Orem's (1985) model was conducted to explore the use and effectiveness of self-care practices of women experiencing nausea and vomiting during pregnancy (NVP). Of the small sample (N=30) of women, 63 percent experienced NVP during their pregnancy. An investigator developed instrument included items about the experience of pregnancy, sociodemographic information, and 39 self-care practices for NVP. All practices were tried, however, the eight practices perceived as most effective for nausea and/or vomiting were not necessarily the most frequently used. Two clusters of practices were identified and found to be associated with education and employment of subjects. Nurses were not viewed as sources of information about self-care by these subjects. Nurses need to provide education about the variety and perceived effectiveness of self-care practices prior to or very early in pregnancy. More research information about the cluster and sequencing of self-care practices with different samples is needed.

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CHAPTER I

THE PROBLEM

Introduction of the Study

Emesis gravidarum, or nausea and vomiting during pregnancy, particularly early pregnancy, is accepted by both the medical and lay community as an extremely common occurrence. For centuries women have suffered from nausea and vomiting during pregnancy and have been the recipients of many varied therapies, some effective, some not (DiIorio, 1988; Jarnfelt-Samsioe, 1987; Kullander & Kallen, 1976; Walters, 1987). Nausea and vomiting during pregnancy has historically been considered one of the earliest diagnostic symptoms for pregnancy and has even been linked with a decreased incidence of miscarriage and stillbirth (Brandes, 1967; Fairweather, 1968; Jarnfelt-Samsioe, 1987; Klebanoff, Koslowe, Kaslow, & Rhoads, 1985; Petitti, 1986). Incidence rates of nausea and/or vomiting during pregnancy vary within a range of 50 to 86% in the U.S. (Hillard, 1985; Alley, 1984; DiIorio, 1985). Of biologic interest, there appears to be no species other than our own that develops this complex not even higher primates (Fairweather, 1968; Hook, 1980).

The high incidence of nausea and vomiting during pregnancy and the variety of therapies reported in the literature suggest that this is an important problem for pregnant women. In addition, women appear to adopt many different ways of coping with the problem of nausea and

vomiting. However, the variety and effectiveness of the coping strategies have not yet been explored sufficiently. Consequently, this study will focus on what self-care practices are used to relieve the discomfort of nausea and vomiting during pregnancy.

The research and literature concerning nausea and vomiting during pregnancy rarely deals with the women's perceptions of nausea and vomiting. As a result, treatment or therapy, including teaching and counseling, presently offered by health care professionals, such as the Clinical Nurse Specialist, are not necessarily based on client data (Alley, 1984). In an effort to provide effective and appropriate supportive care for the women suffering from nausea and vomiting during pregnancy, it would be advantageous for health care professionals to: 1) have an accurate understanding of how nausea and vomiting during pregnancy is perceived by the client to affect her life in terms of distress; and 2) have an understanding of which self-care practices have been and continue to be used by those women who suffer from nausea and vomiting during pregnancy.

In an effort to classify and categorize the varying degrees of nausea and vomiting experienced by many pregnant women, Katon, Ries, Bokan, and Kleinman (1980), have identified three distinct syndromes of nausea and vomiting during pregnancy. The first syndrome, is the least common with nausea and vomiting beginning to occur during the <u>third</u>

trimester of pregnancy. This syndrome is thought to be the most likely syndrome associated with a purely organic versus a multi-causal etiology.

Hyperemesis gravidarum is the second syndrome. This syndrome can be described as nausea with vomiting during pregnancy of such severity as to warrant hospitalization for fluid and electrolyte replacement due to dehydration and nutritional deficits. This syndrome occurs predominantly in the first trimester of pregnancy with the incidence rate of between 1 to 5 women per 1000 (Fuchs et al., 1980).

The third syndrome, which is the focus of this study, is usually called "morning sickness", or emesis gravidarum. In this study it will be referred to as nausea and vomiting during pregnancy (NVP). This syndrome presents as mild symptoms of nausea with or without vomiting that are associated with the first trimester of pregnancy. A classic diagnostic symptom of pregnancy, NVP occurs most commonly between 4 and 12 to 16 weeks of gestation, peaking during the second and third months. NVP is rarely noted after twenty weeks of gestation when incidence rates drop off to less than 10% occurrence (Klebanoff et al., 1985). Although there can be considerable discomfort associated with the nausea and vomiting in this syndrome, enough food is actually tolerated on a daily basis so that nutrition and weight gain are not significantly affected for the fetus or mother with morning sickness.

Generally, pregnant women experience greater discomfort with nausea and vomiting in the morning, thus the term "morning sickness". But some women experience nausea and/or vomiting in the afternoon or evening, and a small percentage of women experience nausea and/or vomiting throughout the day and night (DiIorio, 1988). Symptoms of NVP include mild to severe discomfort from nausea lasting anywhere from one hour to all day. Aversions to smells and tastes, such as those of coffee, smoke, and greasy foods usually accompany or can even incite nausea. This may be a protective mechanism for avoidance of harmful or aggravating substances (DiIorio, 1985; Hillard, 1985).

Necessary daily tasks such as preparing meals or driving a car can increase the nausea and vomiting in pregnancy. Motion of any vehicle or craft, increased heat or hot weather and fatigue and emotional upsets have also been identified by pregnant women to increase nausea and vomiting (Alley, 1984; Hillard, 1985). Descriptions of NVP, offered by pregnant women suffering from this malady, include "queasy feeling", "stomach is going to come out", "awful", "terrible", "annoying", and "like I'm going to die" (Alley, 1984). This broad range of descriptions indicates the range of discomfort experienced by women with NVP.

The etiology of NVP remains unclear (Fairweather, 1968; Klebanoff et al., 1985). This uncertainty is also reflected in the many variations of therapy for NVP (Jarnfelt-Samsioe, 1987). The commonality and self-limiting nature of NVP may

be two reasons why NVP has not been given much attention in research studies (Klebanoff et al., 1985). Unlike hyperemesis gravidarum, which can be debilitating and even life threatening, NVP is at worst a very unpleasant, uncomfortable, and annoying phenomenon.

In the mid 1980's there was brief renewed interest in the management of NVP when Bendectin, a widely used antiemetic drug effective in the treatment of NVP, was withdrawn from the market. During the 1970's and early 1980's Bendectin was used by an estimated 33 million women worldwide (Hillard, 1985; Walters, 1987). With Bendectin no longer available to pregnant women in the U.S., health care providers were again at a loss as to the appropriate treatment for NVP. The controversy and legal battles that surround Bendectin have, no doubt, deterred other drug manufacturers from further research efforts in the area of antiemetics for pregnant women.

Several hypotheses concerning the etiology of NVP have been suggested over the years. One very popular hypothesis suggests abnormally increased hormonal levels as the possible cause for NVP. Increased levels of human chorionic gonadotrophin (HCG), hypofunction of adrenal cortex or lower levels of endogenous adrenocorticotropic hormone (ACTH) have also been identified as possible causes of NVP (Depue, Bernstein, Ross, Judd, & Hendersen, 1987; Jarnfelt-Samsioe, 1987). Most reports focus on increased hormonal levels in

women with the more severe hyperemesis gravidarum rather than those with emesis gravidarum or NVP.

Still another theory offered by Walters (1987), suggests that stimulation of various sensory nerve endings throughout the body triggered by one or more hormones produced in early pregnancy act in concert with psychological factors to produce NVP. There is a small body of literature which supports a strong psychogenic factor in the causation of NVP (Fuchs et al., 1980; Long, Simone, & Tucher, 1986; Zechnich & Hammer, 1982).

Without a clear scientific understanding of the cause or causes of NVP, a definitive medical treatment is not likely. The treatment offered is varied and primarily supportive (Alley, 1984; Brucker, 1988; DiIorio, 1988). Professional recommendations can include pharmaceuticals, dietary adjustments, and psychologic support (DiIorio, 1985; Hillard, 1985; Hotchner, 1979; Midwinter, 1971; Petitti, 1985). Lay resources also recommend dietary changes, vitamin therapy, teas, and psychologic support (Cooke & Dworkin, 1979; Eisenberg, Murkoff, & Hathaway, 1986; Patterson, Freese, & Goldenberg, 1990). Nurses have recognized for many years the importance of clients achieving competence in their self-care (Kappelli, 1986; Orem, 1985). But self-care practices of women with NVP have been largely unreported in the literature (Alley, 1984; DiIorio, 1985, 1988; Jenkins, 1982).

Self-care is a continuous process whereby a person contributes to her own health and well-being (Joseph, 1980). It is estimated that a significant proportion of health/medical care is performed outside the professional care sector, in particular, self-care may account for a substantial proportion of health care activity (Silten & Levin, 1981). While self-care is not a new concept by any means, public interest in self-care has grown in the past decade (Patterson et al., 1990; Silten & Levin, 1981). Consumer movements which advocate participation in health care, mounting health care costs, and the shortage or maldistribution of nursing staff, are several of the contributing factors which have led to the renewed interest in self-care (Kappeli, 1986). One of the goals of self-care is to empower the client to take responsibility for her own care through education, reinforcement, problem solving skills, and sharing of information (Caporeal-Katz, 1983). In the nursing literature which focuses on self-care, there tends to be an emphasis on the role of the nurse. Emphasis on the client's active involvement in her nursing care and recognition of the importance for self-care calls for changes in the traditional role of the nurse, particularly the role of the Clinical Nurse Specialist (Kappeli, 1986). Kapelli (1986) suggests that the nurse should use the client's expertise instead of subordinating the client to the nurse's expertise in appropriate situations. This study will enhance the Clinical Nurse Specialist's knowledge of

his/her client's expertise in coping with NVP by use of self-care practices.

The rationale for investigating the self-care practices of women with NVP is as follows: There has been little research as to which self-care behaviors used for NVP are effective. Self-care practices, or behaviors undertaken by pregnant women in an effort to relieve the discomfort of NVP, have not been investigated sufficiently as to enable the health care professional to offer clear and realistic recommendations for relief. All possible self-care behaviors need to be identified for the health care provider so that he/she may be effective in educating and supporting the woman with NVP in achieving and maintaining adequate care of herself. An investigation of the performance of self-care practices used by women for NVP, and the effect of sociodemographic characteristics, will add further knowledge to the study of self-care practices for NVP.

Purpose of the Study

The purpose of this study is threefold. The first purpose is to describe the self-care practices of a group of women who suffer from the common syndrome of NVP. The second purpose of the study is to determine which self-care practices are perceived by these women as effective in relieving the distress associated with NVP. The third purpose is to examine sociodemographic variables such as age, weeks of pregnancy, marital status, previous pregnancies, number of living children, education,

employment, race, and income level to determine if these variables effect the performance of self-care practices used for NVP.

Problem Statement

The problem statement consists of three specific questions developed to provide a clear understanding of the purpose of this study. The specific questions are:

1. What self-care practices do pregnant women perform to relieve the distress associated with nausea and vomiting during pregnancy?
2. Which self-care practices performed by pregnant women are perceived as effective in relieving nausea and vomiting during pregnancy?
3. What effect do age, marital status, weeks of pregnancy, previous pregnancies, number of living children, education, employment status, race, and income level have with the performance of self-care practices of women with nausea and vomiting during pregnancy?

Orem's (1985) Theory of Self-Care Deficit will be the conceptual framework utilized in this study. A researcher developed self-report written survey was distributed to a group of pregnant women attending prepared childbirth classes. Data analysis was done to answer the above study questions. The results of this study may add to the literature of NVP, and may enable the Clinical Nurse Specialist to have a more accurate understanding of self-care practices used for NVP, so that effective strategies

can be developed to promote and support these self-care practices.

To summarize, the chances that a pregnant woman will experience NVP are between 50-86%. Although there have been and continue to be many theories concerning the etiology of NVP, empirical support for any of the theories is equivocal. Treatment prescribed by health care professionals varies. Few studies concerning self-care practices of women with NVP have been reported in the literature (Alley, 1984, DiIorio, 1985, 1988; Jenkins, 1982).

Research which will answer the above questions is needed. Documentation of the findings may begin to enable the health care provider to have an accurate understanding of the self-care practices used by women with NVP so that strategies can be developed to promote and support these self-care practices.

Overview of Chapters

This research study is organized into six chapters. Chapter I includes an introduction to the study and background of the problem to be examined, the purpose of the research, the problem statement, and assumptions and limitations of the study. In Chapter II, conceptual definitions of the study variables and the conceptual theory utilized as the framework for the study are identified and discussed in relationship to the practice of nursing. Chapter III includes a literature review which highlights the contributions and implications of previous studies

relevant to this study. Methods of research and study design are found in Chapter IV, including instrumentation and procedures for informed consent and human rights protection. A presentation of data and analysis are included in Chapter V. In Chapter VI, a summary with discussion of findings, relevant conclusions with implications for nursing practice, and recommendations for future research are presented.

Chapter II

CONCEPTUAL FRAMEWORK

Overview

In this chapter, a discussion of the conceptual framework with an accompanying explanation of theoretical concepts as they relate to the research problem are presented. A discussion of Orem's (1985) Theory of Self-care along with an adapted model to illustrate the relationships between the study variables and theoretical concepts are presented. Finally, the relationship between this study and the practice of nursing as it relates to Orem's (1985) theory of nursing systems is explored.

The purpose of this study is to describe the self-care practices of pregnant women experiencing nausea and vomiting during pregnancy, the women's perception of the effectiveness of these self-care practices in relieving the distress associated with NVP, and to examine the variables of age, weeks of pregnancy, number of living children, education, employment, race, and income level with the performance of self-care practices for NVP. These study questions will be examined in the context of Orem's (1985) Nursing Theory of Self-care Deficit as the guiding conceptual framework.

Orem's Theory of Self-Care

Orem (1985) developed a general theory of nursing referred to as the Self-care Deficit Theory of nursing. This theory describes the relationship between the self-care

action capabilities of individuals, the individuals demands of self-care, and the role of the nurse in providing the support and education necessary to enable the individual to meet those demands. The central idea of Orem's (1985) theory is that "people benefit from nursing because they are subject to health-related or health-derived limitations that render them incapable of continuous self-care or dependent care or that result in ineffective or incomplete care" (p. 36). These limitations are what Orem (1985) terms "self-care deficits".

The three related theoretical constructs from Orem's (1985) theory which will be utilized in this study include: 1) self-care deficits; 2) self-care; and 3) nursing systems. Within the construct of self-care deficit, a nursing requirement can be determined. The self-care construct explains why these forms of care are necessary for the continuance of life. And finally, within the construct of nursing systems, rationale as to how nursing can help people to continue to engage in self-care, can be derived (Orem, 1985). By use of Orem's (1985) theory as the conceptual framework for this study the relationship between the performance of self-care practices used by pregnant women to relieve the distress of nausea and vomiting during pregnancy will also be explored.

Conceptual Definitions

Nausea and Vomiting During Pregnancy

Nausea and vomiting during pregnancy (NVP) can be defined as mild to severe symptoms of nausea with or without vomiting that is associated with the first trimester of pregnancy occurring most commonly but not exclusively between the 4th and 16th week of gestation. The woman with NVP is not usually regarded by others as being "ill" primarily because NVP is commonly known to be a self-limiting condition and acceptable behavior during pregnancy (Klebanoff et al., 1985; Reissman, 1983). However, changes in human structure, in physical functioning, and in behavior and habits of daily living brought on by pregnancy, and by nausea and vomiting during pregnancy, are evidence of health deviations that lead to what Orem (1985) terms therapeutic self-care demands for action. A therapeutic self-care demand is defined by Orem (1985) as the measure of care required at moments in time in order to meet existent requisites for regulatory action to maintain life and to maintain or promote health and development and general well-being.

Self-Care

Self-care as defined by Orem (1985) is the "practice of activities that individuals initiate and perform on their own behalf for the maintenance, restoration, or promotion of health" (p. 84). For the purpose of this study, self-care practice is defined as those activities initiated and

performed by the pregnant women to relieve the symptoms of nausea and vomiting during pregnancy. According to Orem (1985), self-care behaviors are "learned behaviors that purposely regulate structural integrity, functioning, and human development" (p. 36). Self-care practices specific to the woman with NVP may include adjusting ways of life to meet new self-care requirements (more rest, more accommodating sleeping positions, dietary adjustments, and decreased activity) and establishment of new techniques of self-care (brushing teeth when tolerable during the day, and undertaking an exercise regimen designed for pregnant women). By revising patterns of daily living (easier workload, less preparation of meals, and utilizing others to help in daily activities) and basically changing one's lifestyle to be compatible with the changed health status of NVP, pregnant women learn to cope with the discomfort of NVP. These are examples of self-care practices used by women with NVP to meet therapeutic self-care demands (Orem, 1985; Woods, 1985).

Orem (1985) uses the term self-care deficit to explain the relationship of self-care actions that may be required of individuals to take (the action demand) and the action capabilities for self-care known as self-care agency. While the self-care agent is the provider of care and the person taking action, self-care agency is the complex capability for action that is activated in the performance of self-care (Orem, 1985).

Determinants of Self-Care Agency

The determinants of self-care agency identified in this study are age, previous pregnancies, marital status, number of living children, race, education, employment, and income level. Orem (1985) refers to the factors of age, developmental state, conditions of living, family systems, and sociocultural orientations as factors that can influence, either positively or negatively, the adequacy of the self-care agency. If the self-care agency renders the self-care agent inadequate in meeting the therapeutic self-care demands that NVP presents, a self-care deficit will ensue. Intervention from a health care professional such as a Clinical Nurse Specialist could prevent the deficit from occurring and protect and prevent against future deficits. This intervention is what Orem (1985) refers to in the third theoretical construct, nursing systems.

Nursing Systems

Orem (1985) states that "nursing systems are formed when nurses use their abilities to prescribe, design, and provide nursing for legitimate patients (as individuals or groups by performing discrete actions and systems of action (p. 38). A nursing system is defined by Orem (1985) as a continuing series of actions produced when nurses link one way or a number of ways of helping to their own actions or the actions of persons under care that are directed to meet these person's therapeutic self-care demands or to regulate their self-care agency" (p. 31). Inherent in this

statement, is the assumption that the patient is "under care" and has entered the health care system.

Orem (1985) further defines nurse agency as "the complex capability for action that is activated by nurses in their determination of needs for design of and production of nursing for persons with a range of types of self-care deficits (p. 31). In general, nursing systems represent all actions and interactions of nurses and patients in nurse practice situations (Orem, 1985). Within the design of nursing systems that Orem (1985) describes, the actions of nurses, performed for the benefit of others, or "nursing" has two orientations. These include first, the ability of others to engage in self-care effectively and continuously, and second, the continuous and effective meeting of the existing self-care demands of others in the event of health-derived or health-related self-care deficits.

Orem (1985) identifies the supportive-educative nursing system based on the principle that both the nurse and patient together can act to meet the patient's self-care demands. The supportive-educative system is the focus of intervention in this study. The nurse in the supportive-educative system acts primarily as a consultant in regulating the exercise and development of self-care agency. The patient also regulates the exercise and development of self-care and does accomplish self-care. The patient requires help in decision-making, behavior control, and in

acquiring knowledge and skills in the supportive-educative system.

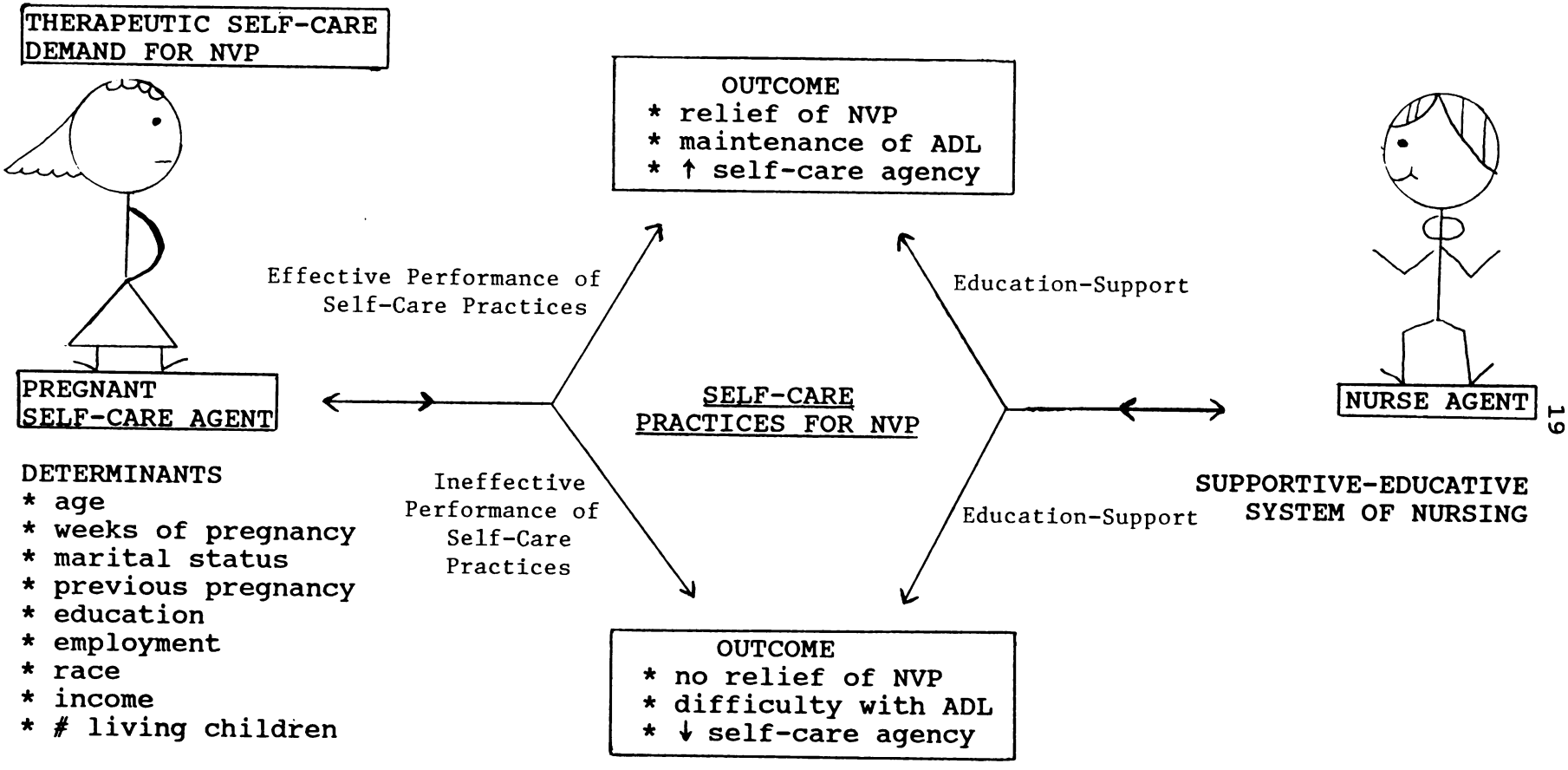
Application to the Study

To illustrate the relationship between the therapeutic self-care demands for the woman with NVP discussed above, the performance of self-care practices and the outcomes, a model was developed. This model (Figure 1) is the conceptual framework for this study and is an adaptation and combination of the models presented by Orem (1985) and the "self-care concept of nursing" model which is based on Orem (1980) presented by Joseph (1980).

At the top left of the model in Figure 1 is the therapeutic self-care demand for NVP. The existence of this self-care demand requires some kind of action for relief from the woman with NVP, depicted in the model as the self-care agent. Self-care determinants listed under the self-care agent (woman with NVP) will define her self-care capabilities or "self-care agency". The line which begins with the pregnant self-care agent, follows through to the middle of the model, then divides the model into two portions, with pathways toward two expected outcomes. The top portion of the model describes the pregnant woman whose self-care agency is adequate. As the pregnant self-care agent, she will have the ability to perform self-care practices to meet the therapeutic self-care demands of NVP effectively and her outcome will be relief of nausea and vomiting, maintenance of activities of daily living, and an

Figure 1

The Relationship Between the Performance of Self-Care Practices for NVP and the Pregnant Self-Care Agent, the Nurse Agent, and the Therapeutic Self-Care Demand for NVP



(Adapted from Orem, 1985 and Joseph, 1980)

increase of self-care agency that her successful self-care practices have supported.

The lower portion of the model describes the pregnant self-care agent whose self-care agency has limitations and is inadequate. As the pregnant self-care agent she will be unable to perform self-care practices to meet the therapeutic self-care demands of NVP effectively and will have a resulting self-care deficit. Her outcome will be no relief from nausea and vomiting, difficulty in activities of daily living, and a decreased self-care agency. The nurse agent, depicted at the right of the model, uses the educative-supportive system of nursing to design appropriate interventions that will be effective not only for the pregnant self-care agent with the self-care deficit, but for the pregnant self-care agent at any point in the model where he/she determines that intervention is appropriate. The arrows which point in both directions around the model indicate an interactive process, an exchange of self-care practice knowledge and ideas, between the nurse agent and self-care agent throughout the model.

In summary, Orem (1985) believes that self-care is deliberate action that is practical in orientation and which involves a decision or choice for performance. Knowledge of one's present condition and circumstances, known care measures, and basic human functioning provide a basis with which to determine what should be done and how. As modeled in Figure 1, self-care practices of the woman with NVP is

the theoretical concept of interest in this study. Research has shown that various self-care behaviors are being performed by women with NVP, some more effective than others (Alley, 1984; DiIorio, 1985; Jenkins, 1982). This research study will investigate which self-care practices are being utilized by the woman with NVP, how effective the self-care practices are perceived to be, and the effect of the selected variables of age, weeks of pregnancy, previous pregnancies, number of living children, marital status, education, employment, race, and income level, with the performance of self-care for NVP. If the self-care practice is not meeting therapeutic self-care demands for NVP, a deficit will ensue that will necessitate aid from the nurse agent in some capacity. The nurse agent will utilize the supportive-educative nursing system described by Orem (1985), to design a plan to educate and support the woman with NVP, which will allow her to meet her therapeutic self-care demands. The nurse agent will need to be well informed as to all possible self-care practices for NVP, so that she may effectively educate and support her client.

Summary

In this chapter, theoretical concepts pertinent to this research study were presented and the relationship among them explored. A discussion of Orem's (1985) Theory of Self-care Deficit along with a model depicting the conceptual framework that is utilized in this study, was presented in relationship to the woman with NVP. The

relationship between Orem's (1985) Theory of Self-care Deficit and the practice of nursing was explored. The conceptual definitions of NVP and self-care were discussed. A further discussion of study concepts and operational definitions will be presented in Chapter IV.

A review of current literature relevant to the examination of self-care behaviors of the woman with NVP will be presented in Chapter III. The strengths and weaknesses of previous studies will be presented in relationship to this study, as well as pertinent controversial issues that exist in the literature.

CHAPTER III

REVIEW OF THE LITERATURE

Overview

In this chapter, relevant literature pertaining to the study concepts and associated research is presented. The purpose of this chapter is to review and synthesize research findings that support and contribute to this study as well as to present existing knowledge that directly or indirectly affects the study of self-care practices of women with NVP. A review of existing studies most similar to this study is presented first, followed by a brief review of the literature concerning nausea and vomiting during pregnancy, which includes recent approaches of treatment such as acupressure, visual imagery and stimulus control, and hypnotherapy. Finally, a review of pertinent literature concerning self-care practices is presented and the role of the health care provider is discussed.

Self-Care for Nausea and Vomiting During Pregnancy

A review of the medical literature concerning self-care for NVP, along with nursing and lay literature of the last ten years reveals that there have been three descriptive studies that have specifically examined the self-care practices of women with NVP (Alley, 1984; DiIorio, 1985; Jenkins, 1982). Jenkins (1982) asked pregnant women (N=37) to rank self-care practices for NVP in order of effectiveness. A symptom distress scale was used to measure the degree of distress associated with NVP. This was the

first study noted in the literature to attempt to list all of the known self-care practices for NVP, and the first study to examine perceived effectiveness of these actions as well as to measure the perceived distress associated with NVP. For these reasons, Jenkins (1982) research study was of significance in providing a basis for this study for further examination of self-care practices and perceived effectiveness of those practices for women with NVP. The small sample size, a newly developed, lengthy questionnaire, and simple data analysis methods, are weaknesses of the Jenkin's (1982) study as well as a similar study done by Alley (1984). Nevertheless, the novel approach of investigating the problem of NVP from the client's perspective, in the Jenkin's (1982) study, the Alley (1984) study, and a study done by DiIorio (1985), make their research findings valuable for further study of self-care practices of women with NVP and perceived efficacy.

Alley (1984) reported that the commonly prescribed self-care behaviors of eating dry crackers and drinking carbonated drinks for NVP did not help many of the pregnant women. The women in her sample (N=39) used a variety of other self-care behaviors such as lying down, eating acidic foods, spicy foods, drinking juices, water, and eating salty foods, which are not noted elsewhere in the literature as being effective in relieving nausea. These findings supported Jenkins (1982) and DiIorio (1985) in that no one self-care action helped a majority of women with NVP. The

Alley (1984) study lent further support for the need for a change in thinking for practitioners and researchers alike in their treatment of NVP.

DiIorio (1985) also reported that women with NVP (teenagers aged 19 years and younger) used a variety of self-care practices with varying effectiveness. Of significance to this study is the finding that 64% of her sample (N-78) did obtain relief from at least one self-care practice tried even though the measures varied from person to person. The most common self-care practice among this sample, with a 46% effective rate, was to lie down, a self-care practice not listed in the literature before the Jenkins (1982) study. In DiIorio's (1985) study, the sample of pregnant teenagers limits the generalizability of results to non-teenaged pregnant populations. However, further knowledge of self-care practices of women with NVP was obtained, and is an important contribution to the literature.

Alley (1984), DiIorio (1985), and Jenkins (1982) attempt to bring nursing care up to date on NVP by gathering data that focuses on the client's perspective of how these symptoms affect her life, what measures have been tried to alleviate the symptoms, how effective those measures were, and the client's source of information concerning NVP. The main objective for the Alley (1984) study was to dispel stereotypical thinking of nurses about counseling women with NVP, and to gain insight as to more comprehensive effective

treatment for NVP. The common results of these three studies indicate that usual recommendations for treatment of NVP do not help all women, that there are a variety of responses to NVP that women are choosing even before seeing a health professional for prenatal care and that further sound studies using advanced statistical analysis need to be undertaken to determine which self-care practices for NVP are used, which are effective, and for whom. As a result of the above studies, important insight as to what women with NVP are saying and doing about their symptoms has been gained. Future studies such as this one can continue to investigate useful self-care practices for women with NVP.

A careful literature review concerning NVP which precedes the aforementioned three self-care studies reveals research that is based entirely on the medical practitioner's perspective of NVP. This research includes the testing of etiologic theories (Depue et al., 1987; Jarnfelt-Samsioe, 1987; Jarnfelt-Samsioe, Samsioe, & Velinder, 1983; Klebanoff et al., 1985; Soules, Huges, Garcia, Livengood, Prystowsky, & Alexander, 1980), examining the incidence of NVP (Brandes, 1967; Fairweather, 1968; Hook, 1980; Midwinter, 1971), and studying management of NVP with pharmaceuticals (Kullander & Kallen, 1976; Walters, 1987), and psychotherapy (Fuchs et al., 1980; Long et al., 1986; Zechnich & Hammer, 1982). The primary focus of the above studies was on hyperemesis gravidarum rather than the more common emesis gravidarum or NVP (Brandes, 1967;

Fairweather, 1968; Katon et al., 1981; Klebanoff et al., 1985; Midwinter, 1971; Petitti, 1986; Walters, 1987). Jarnfelt-Samsioe and colleagues (1983) reported that since 1950 there had been less than 30 papers published which dealt with NVP.

Coppen (1959), Klebanoff et al., (1985) and Medalie (1957), examined the concept of vomiting in pregnant women in relationship to abortion rate and epidemiology. Their findings of a moderately decreased rate of spontaneous abortion with vomiting, and a moderately decreased risk of fetal loss and preterm delivery, support other studies that examine these outcomes in light of nausea and vomiting (Brandes, 1967; Depue et al., 1987; Hook, 1976). Pettiti (1986) found similar results when isolating nausea in pregnancy, as the studies done isolating vomiting, in terms of outcomes of pregnancy. Both Klebanoff et al., (1985) and Pettiti (1986) found that younger women with higher parity were more likely to be nauseated and experience vomiting.

Recent approaches to the treatment of NVP include hypnotherapy, visual imagery and stimulus control, and acupressure. Fuchs and colleagues (1980) found that of 138 subjects suffering from hyperemesis gravidarum, receiving either group or individual hypnotherapy, 70% and 68% reported an excellent response to hypnotherapy, respectively. An excellent response constituted no vomiting and no nausea. This study gave credence to the practice of hypnotherapy, particularly group hypnotherapy, as a viable

treatment for hyperemesis gravidarum. Use of hypnotherapy for NVP which is less severe than hyperemesis gravidarum has not been studied thus far but it does seem possible that this treatment may also be effective for NVP.

Long and colleagues (1986) employed a combination of stimulus control and imagery in their study involving four nurses suffering from mild to moderate NVP during their 8th week of pregnancy. Three of the four subjects experienced no further vomiting after treatment, with the fourth experiencing continued occasional vomiting. While the results of this study are of interest in that there were definite results of relief for NVP, generalization to other populations is limited due to the small self-selected sample. Use of both stimulus control and imagery together in this study, makes contributions of either to a positive response difficult to determine and the need for further research paramount.

The use of acupressure to prevent nausea and as the treatment for "morning sickness", has recently received attention in the nursing and medical literature (Dundee, Sourial, Ghaly, & Bell, 1988; Hyde, 1989). The Hyde (1989), and Dundee and colleagues (1988) studies used randomly selected samples with control groups for their studies of acupressure and NVP. Their findings support a significant reduction of not only nausea and vomiting with acupressure, but Hyde (1989) found that anxiety, depression, and hostility were also greatly reduced. In a related study

done by Stannard (1989), 27 non-pregnant chemotherapy patients experiencing nausea from their treatment, used acupressure over a three month period of treatment. The use of "sea-bands" (elastic acupressure bands with a button positioned to apply pressure at P6 Nei-Kuon acupuncture point) worn by these patients, did greatly reduce nausea, vomiting, and the amount of drugs used to treat these symptoms. A side benefit reported was the feeling of control in their own care, reports of less depression, and reports of less fear of returning for further treatments. In a study done by Dundee et al., (1988), the P6 acupressure point showed a significant difference in decreased severity of sickness compared to two other groups, one with a dummy point or placebo and the other with no bands worn. This finding indicated that acupressure may indeed hold therapeutic value in the treatment of NVP. Further study is warranted to support these findings so that acupressure therapy, which is a safe and non-invasive treatment, can become a recommended self-care practice option for NVP.

The implications of hypnotherapy (Fuchs et al., 1980) stimulus control and imagery procedures (Long et al., 1986), and acupressure (Dundee et al., 1988; Hyde, 1989; Stannard, 1989) as viable, effective treatment alternatives for NVP are significant. While the current research of hypnosis, stimulus control, imagery, and acupressure for NVP remains scant, the results are promising and merit further study. They are self-care behaviors that have been studied in

relationship to other illnesses and conditions, but not to any great extent in relationship to NVP. Research in the area of self-care for NVP, thus far, has been limited to the three studies discussed earlier done by Jenkins (1982), Alley (1984), and DiIorio (1985). However, there has been a significant amount of research in the area of universal self-care practices and illness related self-care that is relevant to this study of self-care practices for NVP. For this reason, the following self-care studies which have contributed to the development of this study will be presented.

Self-Care

Kearney and Fleischer (1979) determined the need for a valid and reliable instrument to measure a person's perception of his/her self-care agency, and developed an instrument to measure exercise of self-care agency. They found neither an internal nor external locus of control had any bearing on the degree of exercise of self-care agency among 306 volunteer nursing, psychology, and other students in a small town. These significant findings indicate that self-care practices can be from self-directing motivation or from compliance to external authority figures, such as health care providers. Other findings included characteristics of those who exercise a high degree of self-care to be, self-controlled, dependable, assertive, intelligent, confident, responsible, helpful, and adaptable. Characteristics not found in those who exercise a high

degree of self-care agency are competitiveness, aggressiveness, and dependence on others. These findings should be of interest to health care providers who seek a better understanding of self-care counseling.

Freer (1980) found that self-medication was the most commonly used self-care action among young married women aged 35 to 44 when examining self-care for the 12 most commonly reported symptoms in their self-reported health diary. Freer's (1980) study also concluded that there were many illness related self-care actions reported that were not described in earlier studies of self-care. The findings of self-medication as the most common self-care practice used were further supported by Nail, Jones, Greene, Schipper and Jensen (1989) when studying chemotherapy patients, male and female, aged 21 to 78, seen in a medical oncology clinic, suffering from nausea. Both studies used a self-report diary to obtain information about the symptoms and efficacy of self-care activities used to deal with each symptom.

Self-medication with anti-emetics was also found to be the most efficacious self-care activity used for nausea and vomiting in a study done by Woods (1985). A self-reported family health diary for data collection was used by a sample of married women aged 20 to 40 years who were registrants of a family health clinic. Wood's (1985) primary interest was to examine universal self-care activities and illness related self-care activities of the 96 women who

participated in this study. Among the findings of the most common universal self-care activities employed was the use of vitamins and contraception. The most common illness related self-care activities included self-medication and alteration of activity.

The relevance of the findings of Freer (1980), Nail et al. (1989), and Woods (1985) to this study, lays in the fact that during pregnancy medications of any kind are generally not advised due to the possible deleterious effects to the fetus. Thus, self-medication, which these studies have found to be a common self-care activity, is not a recommended option for the woman with NVP. Reaching for medication may be a difficult self-care practice to change for some. Awareness of this situation to health care providers and their clients should be heightened by these research results and the need for self-care counseling realized. Woods (1985) concluded in her study as did Freer (1980) and Nail et al. (1989) that women employ a wide variety of self-care measures that have, until recently, not been explored.

Nail et al. (1989) developed from the literature a tool which listed self-care activities known to be used for various symptoms of chemotherapy, including nausea and vomiting. This tool was used to collect data concerning the efficacy of self-care activities. The self-care activities listed in the Nail et al. (1989) instrument, were adapted for inclusion in the tool used in this study and are a

significant source of self-care strategies. McLaughlin and Sliepcevich (1985) developed a Self-Care Behavior Index (SCBI) to assess self-care behaviors of patients with Multiple Sclerosis. While the SCBI was developed for use with chronic disease, this tool was also useful for this study as a model to assess self-care behaviors. The SCBI contributed to the development of a self-care behavior inventory for NVP.

The findings of the above mentioned Freer (1980), Nail et al. (1989) and Woods (1985) studies lend support to the need for further research and investigation into the self-care practices of women with NVP. Self-care activities have been shown to be efficacious for treatment of universal and illness related health care. Nail et al. (1989) pointed out that the finding of the use of combinations of self-care activities needs further examination. There is a potential limitation of the evaluation of the efficacy of single self-care activities since no research to date exists that examines a combination of self-care activities. Further inquiry may reveal an important contribution to the knowledge base of self-care activities for women with NVP.

The literature concerning self-care actions and the relationship between those actions and health care utilization reveals that visiting a health care professional is one of the least commonly used self-care activities (Woods, 1985). Patterson and colleagues (1990) found, by use of a health care utilization diary, that self-care

practices of changes in lifestyle in the areas of diet, rest, exercise, alcohol consumption, and medication were engaged in by women who came in for early or late prenatal care, or none at all. This further supports the data collected by Kearney and Fleischer (1979), which indicates that the source of reinforcement for self-care practices is not significant and may be either from self-directed motivation or from compliance to external authority figures.

Kapelli (1986) observed that nurses seemed to manage rather than assist patients in self-care activities, thus jeopardizing the maintenance and development of the patients' performance of self-care activities. Although this was a small (N=4) study of hospital nurses, the results are significant if indeed further research maintains that nurses and health care providers alike do not support their patients self-care activities. Silten and Levin (1980) support the premise that inherent in the concept of self-care is learner preference of self-care rather than professional preference of self-care. Much more research needs to be done to determine how effective health care providers are in the area of self-care education and counseling and how they can become self-care advocates instead of adversaries.

Summary

In this chapter, a review of the current literature of self-care practices of women with NVP were presented along with a discussion of significance to this study and future

studies. Next, a brief review of the literature concerning NVP was offered, followed by a presentation of the most recent approaches to relieve NVP, including acupressure, visual imagery and stimulus control, and hypnotherapy. Pertinent self-care literature was examined with specific studies highlighted which contributed to the support of this study. And lastly, a review of the literature describing the relationship between self-care practices and health care providers was presented.

In Chapter IV, a description and discussion of the study design, including research methods and procedures will be presented.

CHAPTER IV

METHODS AND PROCEDURES

Overview

Chapter IV includes a review of the research questions, a description of the instrument for data collection, and the operational definitions of the study variables. A discussion of the data collection and data analysis procedures is also included, followed by the methodological assumptions, limitations, and the procedures adopted for the protection of human subjects.

Procedures

In this research study there is a threefold purpose with three accompanying research questions. The first purpose is to describe the self-care practices of a group of women who suffer from nausea and vomiting during pregnancy. The second purpose is to determine which of these self-care practices are perceived by these women as effective in relieving the distress from NVP, and the third purpose is to examine the sociodemographic variables of age, marital status, weeks of pregnancy, previous pregnancies, number of living children, education level, employment, race, and income level, and their effect on the performance of self-care practices used for NVP.

A retrospective/descriptive study design was used for this research study. The sample of pregnant women was asked to recall their experiences with nausea and vomiting during their current pregnancy. A 64-item questionnaire was

developed to collect data to answer the research questions. The research questions are presented below as a review. They are:

1. Which self-care practices do pregnant women perform to relieve the distress associated with nausea and vomiting during pregnancy?
2. Which self-care practices performed by pregnant women are perceived as effective in relieving nausea and vomiting during pregnancy?
3. What effect to age, marital status, weeks of pregnancy, number of previous pregnancies, number of living children, education, employment, race, and income level have with the performance of self-care practices of women with nausea and vomiting during pregnancy?

Sample

The subjects were a self-selected, non-random sample of 30 pregnant women attending four different prenatal classes offered by Expectant Parent Organization in the Lansing, Michigan area. The subjects' stage of pregnancy when answering the questionnaire ranged from 24 to 39 weeks of gestation. Thus, subjects were required to recall to their first trimester of pregnancy when nausea and vomiting of pregnancy is most commonly experienced, when answering the main portion of the questionnaire. The Expectant Parent Organization supported the research and provided access to their classes (see Appendix B for letter of support).

Instrument

The instrument developed for this study (see Appendix D) by the investigator, was a written questionnaire designed to obtain information about the self-care practices used to relieve NVP, the perceived effectiveness of self-care practices used for NVP, and the incidence of and degree of distress associated with NVP. The questionnaire consisted of 64 closed-ended questions which included a list of 39 self-care practices. The questionnaire was divided into three distinct sections which addressed: 1) the incidence and experience of the respondent's nausea and vomiting; 2) the frequency and relief measures of self-care practices used for nausea and vomiting; and 3) the sociodemographic characteristics of the respondents.

The first section of the instrument consisted of 11 items dealing with the presence, the incidence, and the perceived severity of nausea and vomiting. Respondents were required to fill in the blanks or choose one most appropriate answer. In the second part of the instrument 39 specific self-care practices identified from the nursing and lay literature for nausea and vomiting during pregnancy were listed (Alley, 1984; DiIorio, 1985; Jenkins, 1982; Nail et al., 1989; McLaughlin & Sliepcevich, 1985). Next to each self-care practice were three separate measures, one dealing with the frequency of use, the second with the degree of relief obtained from nausea, and the third dealing with the degree of relief obtained from vomiting. One open-ended

item was provided at the end of the 39 self-care practices for subjects to write in any self-care practices that may not have been included. The last section of the instrument contained nine sociodemographic questions regarding age in years of the subject, number of weeks of current pregnancy, marital status, number of previous pregnancies, number of living children, education level, employment, race, and income level.

The instrument was evaluated for content validity by a four member nursing faculty panel before it was used. One member of the panel was a statistician and statistics educator, two members were nursing educators in the areas of maternal and family nursing, and were also prenatal instructors. The fourth member was a nursing educator of theory of self-care.

The instrument was pretested with five women who had been pregnant in the past to determine instrument clarity and readability. The results of the pretest indicated that a few minor changes for clarity were necessary. Reliability of the instrument was not determined prior to use of the instrument.

Scoring of the Instrument

The data were computer coded item by item. In the first section of the questionnaire, yes answers were coded as 1 and no answers were coded as 0. Throughout the instrument, blank answers were coded as non-applicable and

missing answers were coded as 9. There were no negative items.

Items 12-51 were scored by use of three measures: 1) a frequency of use measure; 2) a relief of nausea measure; and 3) a relief of vomiting measure. The frequency of use measure was a 5-point Likert type scale with choices ranging from never, rarely, sometimes, often, and always. The relief of nausea and relief of vomiting measures were also Likert type scales with choices ranging from (1) no relief, (2) moderate relief, (3) good relief, (4) complete relief, and (0) not used. Items on the relief measures were scored only if the frequency of use score was two or more, indicating the item was used.

Item 52 required a rank order of sources of information about NVP. Only the responses with number (1) were used for comparative information since not all choices were used by every subject.

Operational Definitions

The operational definitions for nausea and vomiting during pregnancy for self-care practices and for the sociodemographic variables are described below:

Nausea and Vomiting During Pregnancy

Nausea and vomiting during pregnancy is the subjective experience of moderate to severe nausea with or without vomiting during pregnancy occurring any time of the day or night, most commonly between the 4th and 16th week of gestation. This is the conceptual definition. Nausea and

vomiting during pregnancy was operationally defined by self-report in questions 1-11 of the instrument developed for this research. These questions asked if NVP was experienced (questions 1-2), when it began, and when if at all NVP ceased (questions 3-5). Subjects were also asked at what time during the day nausea and vomiting was the worst (questions 6-7), how severe the nausea and vomiting was, (by use of a 5-point scale in questions 8-9), and how NVP affected their lives (a 5-point scale in questions 10-11).

Self-Care Practices

Self-care practices are the activities initiated and performed by the pregnant woman to relieve the symptoms of NVP. This concept was operationally defined by questions 12-50 of the instrument where 39 listed self-care practices derived from the nursing and lay literature were presented. Self-care practices were self reported by the subjects, who were asked to respond to the frequency of use for each self-care practice listed, by circling one best answer on a five point scale describing their use of the practice. If they had used the practice, they were to self-report the relief obtained from nausea and the relief obtained from vomiting, by use of a four point scale of relief. These three measures, the frequency of use measure, the relief of nausea measure, and the relief of vomiting measure, were the measures used to determine self-care practices performed to relieve the symptoms of NVP.

Sociodemographic Variables

The following sociodemographic variables were measured by single item questions 53-63 in the instrument:

Age. The variable of age was self-reported by the subject as chronological age in years.

Weeks of Pregnancy. Subjects were asked to self-report the number of weeks that they were pregnant when answering the questionnaire.

Number of Previous Pregnancies. Number of previous pregnancies was also self-reported.

Number of Living Children. Number of living children was self-reported.

Education. Education was a self-reported item on the sociodemographic portion of the instrument. Subjects were asked to check one choice from the six choices of 1) finished grade school or less, 2) completed some high school, 3) graduated from high school, 4) some college/technical training, 5) graduated from college, or 6) graduate or professional degree.

Marital Status. Marital status was a self-reported item on the sociodemographic portion of the instrument. Subjects were asked to check one choice from the six choices of 1) married, 2) single, 3) widowed, 4) divorced, 5) separated, or 6) other.

Employment. Employment was a self-reported item on the sociodemographic portion of the instrument. Subjects were asked to check one of the three choices listed,

which included 1) full-time, 2) part-time, and 3) not employed.

Race. Race was a self-reported optional item on the sociodemographic portion of the instrument. Subjects were asked to check one of the seven choices listed, which included, 1) Caucasian, 2) Black, 3) Hispanic, 4) American Indian, 5) Oriental, 6) Asian, or 7) other.

Income Level. Income level was a self-reported item at the end of the sociodemographic portion of the instrument. Subjects were asked to choose among six categories of income levels ranging from 1) 0-$9,999, up to 6) $80,000 and over. Income was defined in this question as, the families (all wage earners) total income before taxes, for the previous tax year.

Data Collection

1. Two weeks ahead of the scheduled data collection class, prenatal instructors for the Expectant Parent Organization (EPO) were sent a package for data collection procedures. This package contained instructions for the instructors, (see Appendix C) copies of the questionnaires with directions for the subjects in the form of a cover letter, and a stamped addressed envelope to return questionnaires to the investigator.
2. One week before distribution of the instrument, prenatal instructors were instructed to announce to the subjects that a questionnaire concerning nausea and

vomiting during pregnancy would be distributed during the next class. Instructors informed their classes that the questionnaire would take approximately 10-15 minutes to complete. Subjects were advised to complete the questionnaire during break time or after class, since all questionnaires would be collected on the night of distribution.

3. At the beginning of the class in which the questionnaire was distributed, the EPO instructors were instructed to read aloud to their classes, the cover letter containing directions for completing the questionnaire (see Appendix D). Instructors were to inform the subjects that they could help them with questions only if they needed assistance in understanding the answer format of the question.
4. The questionnaire were distributed by the EPO instructors to all of the pregnant women in their classes. Consent to participate was established if the subject completed the questionnaire.
5. EPO instructors designated an area where all questionnaires were to be returned, completed or not completed, by the end of the class time.
6. The prenatal instructor returned all questionnaires to the investigator by mail, using the pre-stamped, pre-addressed envelope provided.

Data Analysis

The data were computer coded. Descriptive statistics were tabulated to identify the characteristics of the sample, and the incidence and severity of NVP. Frequencies were tabulated for the three self-care practice measures: 1) frequency of use of the self-care practices; 2) relief of nausea obtained from use of the self-care practice; and 3) relief of vomiting obtained from use of the self-care practice.

Data pertinent to the first research question, which seeks to identify self-care practices used to relieve nausea and vomiting during pregnancy were obtained by use of a rank order of self-care practices tried, and by self-care practice frequency scores.

The second question of this research study concerns the perceived effectiveness of the self-care practices used for nausea and vomiting during pregnancy. This question was analyzed by use of a rank order of the mean item effectiveness scores for relief of nausea and vomiting for each self-care practice. Mean relief scores were tabulated for all items, eliminating scores where three or fewer subjects used the practice for nausea and two or fewer subjects used the practice for vomiting.

Prior to analysis of the third research question, the self-care items were grouped on the basis of the correlation among the frequency scores. Two scales consisting of groupings of self-care items were identified as a result of

this process. These items appeared to correlate sufficiently with each other, and seemed to be measuring the same conceptual dimensions. The two scales were then subjected to a reliability analysis, then correlated with the remaining frequencies of self-care practices used, to determine if any other practices could be included in the two scales. The trial and error process was employed as a substitute for exploratory factor analysis which would have required a much larger sample. The third research question examined the relationship of the sociodemographic variables of age, marital status, number of previous pregnancies, number of weeks of pregnancy, number of living children, education, employment, race and income, with the performance of self-care practices for NVP.

An analysis of variance with the two self-care practice scales as outcome variables and the nine sociodemographic characteristics as independent variables, was done to investigate the association these variables had on the performance of self-care practices which made up the two scales. Only those subjects who responded yes to experiencing nausea or vomiting during this pregnancy, were included in the investigation of this question.

Methodological Assumptions and Limitations

Assumptions

The following assumptions have been made for this research:

1. The women surveyed can be identified through self-report as having NVP.
2. The women surveyed have adequate recall of self-care practices used to cope with NVP.
3. The women surveyed can judge the effectiveness of self-care practices in reducing NVP.

Limitations

The following limitations have been made for this research:

1. Subjects who agreed to participate in this study were a self-selected, non-random sample of pregnant women from one geographic location and setting. The sample size was small, limited to 30 subjects and was a convenience sample. Therefore, the findings may not be generalized to all pregnant women with NVP.
2. The women in the sample were between 24 and 39 weeks pregnant. Since NVP most commonly occurs in the first trimester of pregnancy or the first 12 weeks, the subjects were asked to recall the experience of NVP and their use and perceived effectiveness of self-care practices when responding to the questionnaire. Therefore, their responses may not accurately reflect the experience of nausea and vomiting during pregnancy.

3. The instrument used in this research was a newly developed, untested questionnaire. Thus, dimensionality, reliability, and validity were unknown prior to administration of the instrument.

Protection of Human Subjects

Completion of the questionnaire indicated voluntary participation and consent. Subjects could choose not to participate, or could withdraw from the study at any time. Subjects were not required to identify themselves in any way, as part of the data collection process, thereby, remaining anonymous to the researcher and others.

In accordance with the Michigan State University Committee for Research Involving Human Subjects, all volunteers were 21 years of age or older. The Michigan State University Committee for Research Involving Human Subjects reviewed this research proposal and gave written approval (see Appendix A).

Summary

The study questions were presented for review. Measurement of research concepts which included a discussion of instrumentation and operational definitions of the research concepts of NVP, self-care practices, and sociodemographic variables were presented. A description of the sample and of data collection procedures was followed by a discussion of the data analysis for the three study questions. Methodological assumptions and limitations were presented next, and a discussion of procedures for the

Protection of Human Subjects was presented at the end of this chapter.

CHAPTER V

RESULTS

Overview

In this chapter, the findings of this study will be presented. A description of the sample will be followed by an analysis of findings to answer the study questions.

Description of the Sample

The subjects were an average of 30 years of age and 32 weeks pregnant. Most were white, married, and employed full-time. The majority of the subjects were college educated with none having less than a high school education. The average yearly household income was $40-59,999. Table 1 includes a summary of the demographics described above. Twenty-two subjects reported experiencing nausea and/or vomiting. Only the 22 subjects who did experience nausea and/or vomiting were considered in the analyses of the research questions, however there were several questions that had missing responses of 1-3 subjects for reasons unknown.

Experience of NVP

There were 22 subjects who experienced nausea, with 19 subjects reporting nausea within the first 9 weeks of pregnancy ($\bar{X}$=6 weeks). Vomiting was reported by 9 respondents within the first 9 weeks as well ($\bar{X}$=7 weeks). There were 9 respondents who experienced nausea and vomiting. The mean days of nausea experienced was 58, with a mode of 42 days. The greatest frequency was from 3-12

Table 1

Sociodemographic Variables

	Mean	Range	Valid N
Age in Years	30	22-39	20
Weeks Pregnant	32	24-36	20
Previous Pregnancies	1.4	0-2	12
Income	Frequency	Percent	Valid N
$0-9,999	3	15.8	19
$10-19,999	0	0	
$20-39,999	2	10.5	
$40-59,999	7	36.8	
$60-79,999	6	31.6	
$80-over	1	5.3	
Education/yrs. of schooling	Frequency	Percent	Valid N
Grade school/less	0	0	19
Some High School	0	0	
High School Grad	2	10.5	
Some College	5	26.3	
College Grad	8	42.1	
Grad or Prof Degree	4	21.1	
	Frequency	Percent	Valid N
Marital Status			18
Married	17	94.4	
Single	1	5.6	
# Living Children			12
none	11	91.7	
one	1	8.3	
Employment			20
Full-time	17	89.5	
Part-time	1	5.3	
Not Employed	2	5.3	
Race			22
White	17	89.5	
Black	1	5.3	
Asian	1	5.3	

weeks of pregnancy. There were 8 respondents who experienced vomiting which lasted a mean of 75 days with a mode of 49 days. In previous pregnancies four respondents reported experiencing nausea and no respondents experienced vomiting.

Of the 20 subjects who rated severity of nausea, 17 reported nausea to be not at all severe, or moderately severe. There were 2 respondents who rated nausea very severe. Eight subjects rated severity of vomiting with all rating vomiting as either not at all severe or only moderately severe.

Activities of daily living (ADL) were reported to be either not affected or minimally affected by nausea in 16 of 21 respondents. The affect of vomiting on activities of daily living was also reported by 6 of 8 respondents as not affecting or minimally affecting ADL.

The time of day nausea was most severe was reported by subjects to be upon rising in the morning (6 of 18 respondents), and in the evening (5 of 18 respondents). The time of day vomiting was most severe was reported to be upon rising in the morning (2 of 8 respondents), at dinnertime (2 of 8 respondents), and in the evening (2 of 8 respondents). No respondents reported midday as a choice.

Self-Care Practices

There were 39 self-care practices presented to the subjects in the instrument. All of the 39 self-care practices were tried by at least one of the subjects.

Frequencies are presented in Table 2 in order of highest use to lowest use. The findings presented in this table answer the first study question of what are the self-care practices used by the women in this sample to relieve nausea and vomiting during pregnancy. The most frequently used practice was to get fresh air while the least frequently used practices were taking non-prescription anti-nausea medication and taking extra B Vitamins.

The second study question exploring the effectiveness of self-care practices for relief of nausea and vomiting during pregnancy, is answered by the findings in Tables 3, 4, and 5. Of the eight most frequently used self-care practices not all were perceived as equally effective. The self-care practice tried most frequently (to get fresh air) was reported to have a mean effectiveness score of 2.50 that is, moderate to good relief for nausea, and a mean effectiveness score of 2.50 that is moderate to good relief for vomiting. However, eating small and frequent meals had a mean effectiveness score of 3.06 for nausea that is good relief but was used less frequently. The five self-care practices that were perceived most effective by pregnant women in relieving nausea and in relieving vomiting during pregnancy are presented in Tables 4 and 5. The mean effectiveness scores for nausea fell in a range of 3.06 (good relief) to 2.50 (moderate to good relief). The mean effectiveness scores for vomiting were lower with a range of 2.50 (moderate to good relief) to 2.00 (moderate relief).

Table 2

Frequency and Percent of 39 Self-Care Practices (SCP) Used for NVP in Rank Order

SCP	Cases Who Have Tried #	%	N
Get Fresh Air	19	90	21
Keep Busy	18	90	21
Eat Crackers	18	90	20
Avoid Spicy Food	18	90	20
Eat Less at Meals	18	86	21
Eat When Feeling Nauseous	18	86	21
More Sleep Than Usual	18	86	21
Eat Small Frequent Meals	17	81	21
More Exercise	16	76	21
Ask for extra attention from others	16	76	21
Clean mouth/teeth more often	15	75	20
Drink clear liquid	15	75	20
Avoid sight/smell of food	15	71	21
Eat more slowly	15	71	21
Avoid bad smells	15	71	21
Avoid fatty foods	14	70	20
Cut down on drinks w/ caffeine	14	67	21
Avoid sweet foods	13	65	20
Eat bland foods	13	62	21
Avoid cooking	13	62	21
Rest after meals	12	57	21
Avoid riding in the car	11	55	20
Share experience of NVP w/ another mother	11	52	21
Eat midnight snacks	11	52	21
Eat sweet foods	11	52	21
Eat cold rather than hot food	10	48	21
Eat more acid foods	9	43	21
Suck on mints/hard candy	8	44	18
Avoid drinking liquid w/ meals	8	38	21
Take vitamins at bedtime	8	38	21
Eat dry toast/crackers before getting out of bed in a.m.	7	35	21
Drink herbal teas	6	29	20
If you smoke/cut down on smoking	3	30	10
Relaxation i.e, yoga meditation imagery	5	24	20
If drinking alcohol/cut down	2	25	8
Avoid vitamins with Fe	4	19	21
Take Rx anti-nausea meds	2	10	21
Take non-Rx anti-nausea meds	1	5	21
Take extra B vitamins	1	5	21

Table 3

Effectiveness Rating for Eight Most Frequently Used Self-Care Practices for NVP

Self-care Practice (SCP)			No. of Subjects Using for Nausea	Mean Effectiveness Score for Relief of Nausea	% Subjects Rating Activity Not Effective for Nausea	No. of Subjects Using for Vomiting	Mean Effectiveness Score for Relief of Vomiting	% Subjects Rating Activity Not Effective for Vomiting
SCP	# Having Tried	Valid N	#	$\bar{X}$	%	#	$\bar{X}$	%
Get Fresh Air	19	21	18	2.50	48	4	2.50	0
Keep Busy	18	21	16	1.94	40	6	1.03	80
Eat Crackers	18	20	18	2.56	11	6	1.67	33
Avoid Spicy Foods	18	20	16	2.44	12.5	6	2.00	50
Eat Less During Meals	18	21	15	2.27	13	5	2.60	0
Eat When Feeling Nauseous	18	21	18	3.00	48	4	2.50	0

Table 3 continued

Self-care Practice (SCP)			No. of Subjects Using for Nausea	Mean Effectiveness Score for Relief of Nausea	% Subjects Rating Activity Not Effective for Nausea	No. of Subjects Using for Vomiting	Mean Effectiveness Score for Relief of Vomiting	% Subjects Rating Activity Not Effective for Vomiting
SCP	# Having Tried	Valid N	#	$\bar{X}$	%	#	$\bar{X}$	%
More Sleep Than Usual	18	21	14	2.86	0	5	2.40	20
Eat Small Frequent Meals	17	21	16	3.06	0	2	2.50	0

Note: Relief Scale: 1=no relief; 2=moderate relief; 3=good relief; and 4=complete relief

Table 4

Self-care Practices Perceived Most Effective for Relief of Nausea

Self Care Practice	Mean Effectiveness	S.D.	Valid N
eat small frequent meals	3.06	.77	16
eat when nauseated	3.00	.91	18
get more sleep	2.86	.77	14
eat crackers	2.56	.92	18
get fresh air	2.50	.71	18

Table 5

Self-care Practices Perceived Most Effective for Relief of Vomiting

Self Care Practice	Mean Effectiveness	S.D.	Valid N
eat less during meals	2.60	.54	5
get fresh air	2.50	.57	4
get more sleep	2.40	1.14	5
avoid fatty foods	2.33	1.21	6
avoid spicy foods	2.00	1.26	6

There were three relief of vomiting self-care practices that had mean scores of 4.00 indicating complete relief, however, this reflected the responses of only one subject per item. These practices were taking non-prescription medications, taking prescription medication, and one write in response of "gum".

Source of Self-Care Information

The first source of information that subjects listed concerning knowledge of the self-care practices was the doctor (33%). "Myself" (trial and error) was the next highest response with 27 percent, followed by reading (20%), friends (13%), and relatives (7%). Not one subject listed a nurse or midwife as their first source of information about self-care practices used for NVP.

Self-Care Practice Scales

Given the small sample size a full-scale exploratory factor analysis of the self-care practices was not possible. Instead, self-care practices were grouped based on inspection of inter-item correlations into six groups. The six groups were subjected to reliability analysis. Two scales emerged as a result of this process which were conceptually as well as statistically meaningful. They were the Proper Diet Scale and the Avoidance Scale. The Proper Diet Scale consisted of four self-care practice items which had a mean inter-item correlation of .32 and Cronbach's alpha of .66 (Table 6). The Avoidance Scale also had four

Table 6

Self-care Practice Scales--Proper Diet and Avoidance

	Mean No. of SCP Used	S.D.	Mean Inter-Item Correlation	Alpha
Proper Diet Scale Eat small freq meals Eat when nauseous Avoid sweets Avoid spicy foods	3.09	.88	.32	.66
Avoidance Scale Avoid sight/smell of food Clean mouth more often Avoid cooking Avoid bad odors	2.66	1.14	.58	.85

self-care practice items with a mean inter-item correlation of .58 and an alpha of .85 (Table 6).

The mean relief of nausea score for the Proper Diet Scale was 2.85 indicating good relief. This was slightly higher than the mean relief of nausea score for the Avoidance Scale (2.24) indicating moderate relief. Mean relief scores for vomiting with the Proper Diet Scale (2.03) and the Avoidance Scale (1.69) were lower than the scores for relief of nausea.

The two scales did not show a relationship when correlated, with a correlation coefficient of .09 (p=.697) indicating that they may be independent scales both conceptually and statistically.

Analysis of Variance/Sociodemographics

The third study question was to examine the relationship of sociodemographic variables of age, weeks of pregnancy, marital status, number of previous pregnancies, number of living children, education level, employment, race, income level, and the performance of self-care practices of women with nausea and vomiting during pregnancy. Oneway ANOVA's were done using the above sociodemographic variables as independent variables, and using as the dependent variables, the mean scores of the Proper Diet Scale and the mean scores of the Avoidance Scale. The oneway ANOVA's showed that most sociodemographic variables did not seem to be associated with variations in self-care practices on the two scales. However, the

variables of employment and education were the exception (Tables 7 and 8). There was a significant difference of mean scores for the Proper Diet Scale and the level of education, and of mean Avoidance Scale scores and employment. The F-ratio for the Proper Diet Scale and education categories was significant, however, the confidence intervals overlapped for all of the education categories indicating that further testing would be needed to determine which groups differed in their responses on the items comprising the score. The confidence intervals for the Avoidance Scale and employment categories showed a difference between the categories of full-time and part-time employment. The part-time category mean was lower (1.00) than the full-time mean (2.65), indicating that the self-care practices were done together more often by full-time employees than by part-time employees.

Summary

In this chapter, a presentation of data findings obtained from the study questionnaire was presented. A description of the sample based upon demographic findings was given. An analysis of the incidence and severity of nausea and vomiting during pregnancy for the sample was presented next. The 39 self-care practices listed in the questionnaire with findings of perceived effectiveness for nausea and vomiting were analyzed. Two scales of self-care practices were presented and the findings of ANOVA's from these scales with sociodemographic characteristics were

Table 7

Oneway Analysis of Variance for Proper Diet Scale and Categories of Sociodemographic Independent Variables

Education	Mean Sq		df		F-Ratio
Between	1.9334		13		3.7356*
Within	.5176		15		
		Mean	S.D.	95% Confidence Interval	
H.S.	n=2	3.37	.88	-4.57 to 11.32	
Some College	n=5	2.90	.74	1.98 to 3.82	
College Graduate	n=5	3.61	.58	3.13 to 4.10	
Graduate Degree	n=4	2.18	.89	.757 to 3.52	
	N=16				

*p<.05

Table 8

Oneway Analysis of Variance for Avoidance Scale and Categories of Sociodemographic Independent Variables

Employment	Mean Sq	df	F-Ratio	
Between	4.2454	2	4.9720*	
Within	.8539	17		
		Mean	S.D.	95% Confidence Interval
Full-time	n=17	2.65	.94	2.1719 to 3.1418
Part-time	n=1	1.00		1.00
Not Employed	n=2	4.37	.53	-.3898 to 9.1398
	N=20			

*p<.05

discussed. In Chapter VI, an interpretation of results will be presented.

CHAPTER VI

INTERPRETATION, IMPLICATIONS, AND RECOMMENDATIONS

Summary of Study

A retrospective/descriptive study design was used for this research study. A sample of 30 pregnancy women attending prenatal classes were given a 64-item questionnaire, developed by the investigator, to collect data concerning self-care practices used for nausea and vomiting during pregnancy. The questionnaire was designed to examine which self-care practices for NVP were used, which were perceived to be effective for nausea and for vomiting, and to investigate the association of sociodemographic characteristics of the women with the performance of self-care for NVP.

The average subject was 30 years of age, 32 weeks of pregnancy, married, employed full-time, and white. She had a college degree or higher education, had no children, and had a yearly household income of $40,000-$59,999. For the majority of subjects this was the first pregnancy.

The incidence of nausea and vomiting for the subjects was 63 percent or 22 women in the sample. Nausea and vomiting lasted an average of 6-7 weeks, with the greatest frequency from 3-12 weeks of pregnancy.

The severity of nausea and vomiting was reported to be not at all to moderately severe by 17 of 20 subjects. Only two subjects rated nausea severe. Nausea was found to be most severe upon rising, and in the evening. Vomiting was

found to be equally distributed, upon rising, at dinnertime, and in the evening. Activities of daily living were reported by subjects as not affected or minimally affected by both nausea and vomiting during pregnancy.

All of the 39 self-care practices listed in the questionnaire were tried by at least one subject. Mean effectiveness scores for relief of nausea (3.06-2.62) were higher than mean effectiveness scores for vomiting (2.50-2.00). Self-care items that were effective in relieving nausea were not necessarily the same items that were effective in relieving vomiting, but when the same items were used for both, the mean effectiveness scores were lower for those used for vomiting. The self-care items that were tried most often were "get fresh air", and "keep busy". The self-care items that were most effective for nausea were "eat small frequent meals", and "eat when feeling nauseated". The most effective self-care items used for relief of vomiting were "avoid cooking" and "avoid the sight and smell of food".

Oneway ANOVA's of the Proper Diet Scale and Avoidance Scale by categories in the sociodemographic variables of education and employment, resulted in the finding of a significant F-ratio for the education categories and the Proper Diet Scale, and a significant F-ratio for employment categories and the Avoidance Scale. A pattern was not possible to determine without further testing for the education groups. Other sociodemographic characteristics

were not found in this study to have had an effect on the performance of self-care practices for NVP.

The source of information concerning knowledge of self-care practices used for NVP with the highest frequency score was from a doctor (33%). "Myself" (trial and error) was the next source (27%), followed by reading, friends, and relatives. A nurse or midwife were not listed by the subjects as their first source of information.

Interpretation

The small homogeneous (i.e., highly educated, married, white, full-time employed) sample of pregnant women with NVP used in this study must be held in consideration when interpreting the findings, especially those findings from the Oneway ANOVA's that were done. The high incidence of nausea and/or vomiting during pregnancy (63% nausea, 29% vomiting) found in this study does, however, correspond with previous research where the incidence was reported to be 50 to 86 percent in the United States (Hilliard, 1985; Alley, 1984; DiIorio, 1985). The findings of onset and duration also correspond with findings of earlier research reports (Klebanoff et al., 1985).

The high incidence of NVP and the variety of self-care practices tried in this study (39) for relief of NVP strongly supports the suggestion that NVP is indeed a significant event for pregnant women with many possibilities for self-care. Varied treatment recommendations for NVP currently offered by health care professionals typically

focus on food intake and meal patterns rather than rest, activity level, relaxation, or other non-food oriented interventions (Brucker, 1988; Walters, 1987). Yet, self-care practices found to be used frequently in this study and in studies by DiIorio (1988) and Jenkins (1982) with moderate to good relief included "getting fresh air", "keeping busy", and "getting more sleep" as non-food oriented practices. Health care professionals may be limiting their recommendations to food-oriented interventions while their clients are trying non-food oriented practices that seem to be effective.

The 39 self-care practices for NVP compiled from the literature and included in the instrument for this study is the most comprehensive list available at this time. Yet, by no means should it be considered inclusive. One can assume that there are other self-care practices that were not included in this study that may be effective for NVP, yet few women in this sample identified other self-care practices.

The results of this study indicate that the pregnant women in this study used a wide variety of self-care practices for NVP. Not all of the practices were perceived as equally effective for all of the women who tried them, but there were many practices that had effectiveness scores indicating moderate to good relief. This finding would suggest a change in thinking for health care providers in the development of intervention strategies. A change that

would require individualized self-care practice strategies for each client rather than an across-the-board recommendation to try eating crackers and drinking soda.

The clustering of self-care practices for NVP into Scales was an approach not found in the literature to date. It is an interesting concept to add to the literature of self-care practices for NVP. The findings of this study indicate that the two scales were statistically different therefore there was no significant relationship between them. The scales were conceptually different as well. The possibility exists that there are some clusters of self-care practices that may prohibit the use of other self-care practices. For example, one cannot avoid the sight and smell of food (Avoidance Scale) if one is eating small and frequent meals (Proper Diet Scale). The Avoidance Scale mean inter-item correlation of .58 was higher than the Proper Diet Scale mean inter-item correlation .32 indicating the self-care practices on the Avoidance Scale were done together more often than items were done together on the Proper Diet Scale.

The clustering of self-care practices was found to vary significantly in this study in terms of the sociodemographic variables of education and employment. A difference was found in the performance of self-care practices of the Proper Diet Scale and the education level of the subjects. However, a consistent pattern did not exist for the means of education levels and confidence intervals overlapped in all

categories. The sample size was too small to show a single pair difference. For the Avoidance Scale a significant difference in means was found in the categories of full-time and part-time employment. The small sample size in this study and unevenly distributed number of full-time employed women (N=17) and part-time employed women (N=1) make these findings weak. Self-care practices of the Avoidance Scale (avoid cooking, avoid bad odors, avoid the sight and smell of food, clean mouth more often) may be more appealing to the working woman who could undertake these activities more easily while at work. DiIorio (1985) found that pregnant teenagers with NVP, used the self-care practice of laying down most frequently and with the highest effective rate in the study of 46 percent. This specific self-care practice may be one that a working woman would not be as inclined to use as often as perhaps a teenager. Thus, these two studies indicate that sociodemographic characteristics may play an important role in the choices women make for self-care practices for NVP.

The guiding conceptual framework for this study was that of Orem's (1985) Self-care Deficit Theory. The adapted model of this framework (Figure 1) is presented in Chapter II. The findings of this study indicate the potential importance of the self-care agents determinants for the performance of self-care practices for NVP specifically those of education and employment. The determinants for this study were the sociodemographic characteristics of the

sample with the exception of number of weeks of pregnancy. Since this was a retrospective study and subjects were asked to recall their experience of NVP, the number of weeks of pregnancy was not used as a variable in this study, but should be included in the model as a determinant of self-care agency. Although the subjects in this study were a relatively homogeneous group of women the model does allow for heterogeneous samples as well. The determinants serve as important information for assessing the knowledge, skill, and motivation for the performance of self-care practices by the woman with NVP.

Of particular interest in regard to the conceptual framework and model used for this study is the finding that the nurse (nurse agent) was not perceived as a source of information for the woman with NVP. The model depicts the possible explanation for this finding in that the intervention of the nurse agent occurs concurrent with the therapeutic demand for self-care for NVP. In order for the nurse agent to become a source of information for women with NVP, she would have to intervene either before the demand for self-care arises in an anticipatory guidance role or concurrent with the demand. The timing of the intervention which is crucial for the nurse and self-care agent is not appropriate for the woman with NVP in this model. Therefore, this model would need to be modified to clearly position the nurse agent as having the opportunity to intervene before, as well as, concurrent with the

therapeutic self-care demand for NVP. Orem's (1985) Theory of Self-Care Deficit assumes the self-care agent has entered the health care delivery system. For the women with NVP, this may not be the case and intervention will need to be done outside of the health care delivery system.

The model does succeed in depicting an interactive relationship between the nurse agent and the self-care agent necessary for the effective performance of self-care practices. The self-care agent must participate in the decision making of which self-care practices to try, which to exclude, and which to continue to use for relief. Studies such as this one, and others done in the past ten years, which examine self-care practices for NVP (Alley, 1984; DiIorio, 1985; Jenkins, 1982) can provide knowledge as well as sharing of ideas that would facilitate this interactive relationship. However, this relationship was not seen in this study. This may be due in part to the sample who may not have sought prenatal care from settings which included direct intervention with a nurse or CNS.

Implications for Advanced Nursing Practice

Thus far, there has been a scant amount of research conducted concerning self-care practices for NVP, although there has been a renewed public interest in self-care during the past decade (Patterson et al., 1990; Silten & Levin, 1981). While nurses recognize the importance of self-care for their clients (Kapelli, 1986; Orem, 1985), this study is in agreement with studies done by Alley (1984) and DiIorio

(1985), which indicated that nurses were not a primary source of information for women with NVP. Sources such as "trial and error", "doctor", and "friends" have been reported as first sources of information for NVP, but never nurses.

It is possible that the lack of research to support the effectiveness of non-pharmaceutical interventions for NVP may be why nurses are hesitant to suggest many interventions, but most likely nurses are not interacting and/or educating pregnant clients until late in their pregnancies when NVP may have subsided. With incidence rates as high as 63% for NVP the nurse should be assured that he/she will be seeing clients who will require information and education concerning self-care practices for NVP. Many clients do not seek prenatal care until the beginning of the second trimester. The challenge for the advanced practice nurse will be to intervene early in the first trimester of pregnancy, when onset and duration of NVP are most frequent, or before pregnancy for those of childbearing age. Nurses are not presently in the information loop either within the health care system or outside of the system, to facilitate this early intervention. Thus, they must find ways to reach their clients more effectively, they cannot wait for women to come to them.

One of the ways that this challenge can be met is through the role of the educator for the advanced practice

nurse. Educating women who are of childbearing age and are interested in starting a family as well as those who are in their early weeks of pregnancy may be done by way of reaching parenting groups and support groups affiliated with health departments, obstetrical practices, pediatric practices, or community service programs. The advanced practice nurse must strive to change the image of the nurse from a non-existent source of information to a valuable, approachable, and available source of information for pregnant women with NVP, not only within the health care system, but outside of the health care system as well. By sharing information concerning self-care for NVP with the media, through T.V. and radio talk shows, and by writing articles for popular lay publications and newspapers the advanced practice nurse could promote visibility and credibility through his/her role as an educator.

In practice, interventions for NVP offered by the advanced practice nurse should include not only food oriented self-care practices, but non-food oriented self-care practices such as those found to be effective in this study (fresh air, more sleep). The clustering of practices should be suggested as well. The advanced practice nurse would use the roles of assessor and collaborator to incorporate the clustering of self-care practices into his/her intervention strategy. He/she would need to assess the lifestyle (determinants) of the self-care agent and collaborate with her to develop the appropriate self-care

interventions that would be realistic and effective for NVP. For example, for the working women self-care practices on the Avoidance Scale may be suggested to relieve NVP. Ongoing collaboration and communication would enhance effective strategies.

The advanced practice nurse may often be in a position to conduct research either formally or informally in the primary care setting. Seeking out and sharing information concerning self-care practices for NVP with other health care professionals who deal with non-pregnancy induced nausea clients would be beneficial to expand the knowledge base for self-care practices for nausea and vomiting. The sharing of information would also help to change the image of the advanced practice nurse to that of a valuable source of information among colleagues.

Implications for Research

It is recommended that a replication of this study be done with a large sample of pregnant women representing a cross section of sociodemographic factors that would be more heterogeneous than the sample in this study. While the instrument used in this study allowed for the grouping of self-care practices into scales, the small sample size and homogeneity of the sample was a limiting factor in the development and analysis of the scales. Further research should be done to test the validity and reliability of the instrument used in this study so that it can become a valuable tool for the study of self-care practices.

The concept of clustering self-care activities into groups for maximum effectiveness should be pursued by health care professionals in research and in practice. There is need for further investigation as to if and how activities are clustered so that the health care professional can offer groupings of self-care practices as an intervention strategy.

Self-care practices for chemotherapy induced nausea and illness related self-care practices (Nail et al., 1989; Woods, 1985) were included in the questionnaire for NVP, and were used and tried by pregnant women in this study. This finding suggests that research should not be limited to pregnancy induced nausea and vomiting alone, but should include investigations of self-care practices in general.

Summary

In this chapter a summary of the study with interpretation of results and implications for advanced practice and research were presented. Recommendations for further study were also suggested.

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APPENDIX A

Human Subjects Approval

MICHIGAN STATE UNIVERSITY

OFFICE OF VICE PRESIDENT FOR RESEARCH
AND DEAN OF THE GRADUATE SCHOOL

EAST LANSING • MICHIGAN • 48824-1046

February 20, 1991

Ms. Michele Sturt
5444 Jones Landing Road
Petoskey, MI 49770

RE: SELF-CARE PRACTICES OF WOMEN WITH NAUSEA & VOMITING DURING PREGNANCY, IRB#90-612

Dear Ms. Sturt:

The above project is exempt from full UCRIHS review. The proposed research protocol has been reviewed by another committee member. The rights and welfare of human subjects appear to be protected and you have approval to conduct the research.

You are reminded that UCRIHS approval is valid for one calendar year. If you plan to continue this project beyond one year, please make provisions for obtaining appropriate UCRIHS approval one month prior to February 5, 1992.

Any changes in procedures involving human subjects must be reviewed by UCRIHS prior to initiation of the change. UCRIHS must also be notified promptly of any problems (unexpected side effects, complaints, etc.) involving human subjects during the course of the work.

Thank you for bringing this project to my attention. If I can be of any future help, please do not hesitate to let me know.

Sincerely,

David E. Wright

David E. Wright, Ph.D.
Chair, UCRIHS

DEW/deo

cc: Dr. Rachel Schiffman

APPENDIX B

Letter of Support for Data Collection

Expectant Parents Organization
2620 Montego Drive
Lansing, Michigan 48912
Telephone (517) 337-7365

January 18, 1991

This letter is to serve as a document of intent for Michele Sturt to distribute a questionnaire through the Expectant Parents Organization Childbirth Education classes to examine nausea and vomiting during pregnancy. Our agency fully supports this effort.

Ms. Sturt's proposal is timely and related to the needs of pregnant women in our state. This study will give direction and support for improving the quality of care for women.

Sincerely,

Carol Buzzitta
Executive Director
Expectant Parents Organization

CB/sp

APPENDIX C

Letter of Instruction for Distribution of Instrument

Dear Prenatal Instructors:

Thank you for your participation in the distribution and collection of my questionnaire. I have enclosed the following in your package:

15 questionnaires with cover letters
1 letter of instruction for prenatal instructors
1 stamped, self-addressed, return envelope

It is important that all prenatal instructors proceed in the same manner:

1. In an effort to prevent any disruption to your class time, I am suggesting that you advise your students one week ahead of questionnaire distrubution that they will be asked to complete this questionnaire. I am hopeful that by having prior knowledge of the need for 10-15 minutes to spend on the questionnaire, the participants will be able to save some time during your break to complete the questionnaire. If you don't think this is necessary, then please distribute the questionaires the week that you receive them.

2. Distribution and Collection Procedures:

Please hand out a questionnaire to every pregnant woman in your class at either the beginning or break time of class, and ask them to read the cover letter with you as you read it out loud to them. Emphasize that participation is strictly voluntary and will in no way affect them in their prenatal class if they chose not to participate. They will remain anonymous, as it is not necessary to identify them in this study. Indicate a time that you will be available to answer any questions concerning the answer format but that you cannot cannot help them determine the best answer. If someone is having trouble, please have them write in next to the question their questions or uncertainties.

Identify an area where they may turn in their questionnaires whether completed or not completed, by placing the unused questionnaires that were not passed out, in a stack.

At the end of your class time, ask if all have handed in their questionnaires to the designated area. Place all

questionnaires in the return envelope and send as soon as conveniently possible.

If you have any questions or concerns, please call me at anytime, Home 616-347-7874 T-TH, Work 616-347-5424 MWF and reverse the charges. I hope all directions are clear and that the distribution and collection process goes well.

Again, I thank you for your help in this data collection process. I will send a summary of the findings of the completed study to you before the summer of this year.

Sincerely,

Michele Sturt

Michele Sturt R.N., C.F.N.P.
MSN Candidate
Michigan State University

APPENDIX D

The Instrument: Self-Care Practices of Women with NVP

Dear Prospective Volunteer:

I am a graduate student in the College of Nursing at Michigan State University where I am conducting a study about nausea and vomiting during pregnancy, commonly known as "morning sickness", and what pregnant women do to relieve these symptoms. I believe that pregnant women have much valuable information to share with others.

Your participation in this study is voluntary. You may choose not to participate at all. Either way, your participation in your prenatal class will not be affected. There will be no attempt made to identify you in any way. Every pregnant woman in your class will be handed the questionnaire to complete and return to the area designated by your instructor as a collection pile, by the end of class today. If you choose not to participate, return the blank questionnaire to the same collection pile. Neither your instructor, nor your classmates will know if you have or have not completed the questionnaire. You will indicate your voluntary agreement to participate by completing and returning the questionnaire to the designated area for collection.

The questionnaire should take approximately 10-15 minutes to complete. The directions for filling it out are included throughout the questionnaire. If you have any questions at all, please ask your prenatal instructor for help. Please fill this out during your break time or at the end of class so as not to interfere with your class.

Your time and effort spent answering this questionnaire is very much appreciated. By answering this questionnaire, you are contributing information that may be helpful to other pregnant women who are experiencing morning sickness. A summary of the findings of this study will be made available to you if you wish, through the Expectant Parents Organization by the summer of 1991.

Thank you for participating in this study.

Sincerely,

Michele Sturt RN,CFNP,
MSN Candidate
Michigan State University
College of Nursing
A 230 Life Sciences
E Lansing, Mi. 48824

NAUSEA AND VOMITING IN PREGNANCY

Nausea and vomiting during pregnancy are considered to be very common symptoms, but can be very distressful. The following questions deal with the symptoms of nausea and vomiting. Nausea can be described as a feeling of queasiness or sickness at the stomach, with an impulse to vomit that persists over a period of time and may or may not lead to vomiting. Vomiting can be described as the ejection of stomach contents through the mouth. Based on your own personal experience with nausea and/or vomiting during this pregnancy, please answer the following questions as best you can.

1. Have you ever experienced nausea during this pregnancy?
   _____ yes _____ no

2. Have you ever experienced vomiting during this pregnancy?
   _____ yes _____ no

If you did not experience nausea and/or vomiting during this pregnancy, please go to question #53 and complete the questionnaire, or stop here and turn it in to your instructor.

If you have experienced nausea and/or vomiting during this pregnancy, please continue.

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3. When you first experienced nausea and/or vomiting during this pregnancy, approximately how many weeks had you been pregnant?
   When I first experienced nausea, I was _____weeks pregnant.
   When I first experienced vomiting, I was _____ weeks pregnant.

4. How many days or weeks did the nausea last during this pregnancy?
   a) the nausea lasted _____days and/or _____weeks
   b) the nausea has continued to the present _____

5. How many days or weeks did the vomiting last during this pregnancy?
   a) the vomiting lasted _____ days and/or _____weeks
   b) the vomiting has continued to the present _____

6. What time of day did the nausea seem to be the worst? (please check one)
   ___ upon rising ___ after breakfast ___ mid-day
   ___ late afternoon ___ dinner time ___ evening

7. What time of day did the vomiting seem to be the worst? (please check one)
   _____ upon arising _____ late afternoon
   _____ after breakfast _____ dinner time
   _____ mid-day _____ evening
   _____ not applicable

8. Overall, how severe would you say that the nausea was for you? (please check one)
   _____ 1. not at all severe _____ 3. severe
   _____ 2. moderately severe _____ 4. very severe

9. Overall, how severe would you say that the vomiting was for you? (please check one)
   _____ 1. not at all severe _____ 3. severe
   _____ 2. moderately severe _____ 4. very severe
   _____ 5. not applicable

10. Overall, how did the nausea affect your daily life? (please check one)
    _____ 1. not at all _____ 3. moderately (activities left undone)
    _____ 2. minimally (could perform all usual activities but some had to be delayed.) _____ 4. severely (could not perform most usual activities)

11. Overall, how did the vomiting affect your daily life? (please check one)
    _____ 1. not at all _____ 3. moderately (activities left undone)
    _____ 2. minimally (could perform all usual activities but some had to be delayed.) _____ 4. severely (could not perform most usual activities)

In the FREQUENCY OF USE section - circle the number that best describes your use of the self-care practice. In the relief of nausea and vomiting sections - circle the number that best describes the relief of nausea and/or vomiting that you obtained from using this practice. Circle the zeros in these categories if you did not use this practice for relief of nausea and/or vomiting.

The following items represent some common self-care actions women use alone or in combination, to relieve the symptoms of nausea and vomiting during pregnancy. There are three sections to answer for each practice listed.

	FREQUENCY OF USE					RELIEF OF NAUSEA					RELIEF OF VOMITING				
	NEVER	RARELY	SOMETIMES	OFTEN	ALWAYS	NO RELIEF	MODERATE RELIEF	GOOD RELIEF	COMPLETE RELIEF	NOT USED FOR NAUSEA	NO RELIEF	MODERATE RELIEF	GOOD RELIEF	COMPLETE RELIEF	NOT USED FOR VOMITING
EXAMPLE: Suck on mints or hard candy	1	2	(3)	4	5	1	(2)	3	4	0	1	2	3	4	(0)
12. Suck on mints or hard candy	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0
13. Rest after meals (lie down)	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0
14. Eat less during meals	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0
15. Avoid the sight or smell of food	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0
16. Eat cold food rather than hot food	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0
17. Clean mouth/teeth more often	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0
18. Eat crackers	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0
19. Eat dry toast/crackers before getting out of bed in the morning	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0
20. Eat more slowly	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0
21. Eat small frequent meal (more than 3/day)	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0
22. Get fresh air	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0
23. Eat when feeling nauseous	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0
24. Avoid sweet foods	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0
25. Drink clear liquids like 7-up, caffeine-free, colas, gingerale	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0
26. Eat more acid foods such as lemons, pickles, grapefruits	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0
27. Eat bland foods such as potatoes, hot cereal	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0

	FREQUENCY OF USE					RELIEF OF NAUSEA					RELIEF OF VOMITING				
	NEVER	RARELY	SOMETIMES	OFTEN	ALWAYS	NO RELIEF	MODERATE RELIEF	GOOD RELIEF	COMPLETE RELIEF	NO NAUSEA	NO RELIEF	MODERATE RELIEF	GOOD RELIEF	COMPLETE RELIEF	NO VOMITING
28. Keep busy to keep mind off it	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0
29. More exercise	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0
30. Relaxation such as meditation, yoga, visual imagery (day dreaming)	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0
31. More sleep than usual	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0
32. Ask for extra attention from my partner/family member	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0
33. Share experiences of nausea and vomiting with another mother	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0
34. Avoid riding in the car / driving or passenger	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0
35. Avoid drinking liquids with meals	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0
36. Cut down on drinks with caffeine (coffee, teas, colas)	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0
37. Take non-prescribed anti-nausea medication (please list which)	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0
38. Take prescribed anti-nausea medication (please list which)	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0
39. Take extra B Vitamins	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0
40. Drink herbal teas (please name types)	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0
41. Avoid cooking	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0
42. Take vitamins at bedtime	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0
43. Avoid vitamins with iron	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0
44. Avoid bad smells	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0
45. Eat midnight snacks	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0
46. Eat sweet foods	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0

	FREQUENCY OF USE					RELIEF OF NAUSEA					RELIEF OF VOMITING				
	NEVER	RARELY	SOMETIMES	OFTEN	ALWAYS	NO RELIEF	MODERATE RELIEF	GOOD RELIEF	COMPLETE RELIEF	NOT USED FOR NAUSEA	NO RELIEF	MODERATE RELIEF	GOOD RELIEF	COMPLETE RELIEF	NOT USED FOR VOMITING
47. Avoid spicy foods	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0
48. Avoid fatty foods	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0
49. If you smoke - cut down on smoking	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0
50. If drinking alcohol - cut down on alcoholic beverages	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0
51. Others (please list)	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0
_____	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0
_____	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0
_____	1	2	3	4	5	1	2	3	4	0	1	2	3	4	0

52. Rank order the following sources of information about the self-care practices which you used. Rank order only the source which you used starting with #1 as the most important source.

____ friends
____ relatives
____ doctor
____ midwife
____ nurse
____ myself (trial and error)
____ reading (please specify where you read the information)
(magazine, book, newspaper)_____
_____
____ other (please specify) _____
_____

53. If you have been pregnant before, have you experienced nausea in any other pregnancy?
____ yes ____ no

54. Have you experienced vomiting in any other pregnancy?
____ yes ____ no

In the next set of questions you will be asked some general information. This information is important in helping to understanding how different women respond to nausea and vomiting during pregnancy.

55. I am _____ years of age

56. I am _____ weeks pregnant

57. Number of previous pregnancies _____

58. Number of living children _____

59. Education: (check one)
- _____ finished grade school or less
- _____ completed some high school
- _____ graduated from high school
- _____ some college or technical training
- _____ graduated from college
- _____ completed graduate or professional degree (past bachelor's degree)

60. Marital Status: (check one)
- _____ married
- _____ single
- _____ widowed
- _____ divorced
- _____ separated
- _____ other (please specify)

61. Employment: (check one)
- _____ full time
- _____ part time
- _____ not employed

62. Race: (please check one, optional)
- _____ Caucasian
- _____ Black
- _____ Hispanic
- _____ American Indian
- _____ Oriental
- _____ Asian
- _____ Other (please specify)

63. Income level: (please check one)
In what range was your household (all wage earners) gross (before taxes) yearly income last year?

_____ $ 0 - 9,999.00
_____ $10,000.00 - 19,999.00
_____ $20,000.00 - 39,999.00
_____ $40,000.00 - 59,999.00
_____ $60,000.00 - 79,999.00
_____ $80,000.00 - or over

Thank you for your participation!