

1996

Contributing Factors in Medication Nonadherence in Schizophrenic Clients: A Descriptive Study

Sharron E. Howarth
Grand Valley State University

Follow this and additional works at: <https://scholarworks.gvsu.edu/theses>



Part of the [Clinical Psychology Commons](#), [Mental and Social Health Commons](#), and the [Nursing Commons](#)

ScholarWorks Citation

Howarth, Sharron E., "Contributing Factors in Medication Nonadherence in Schizophrenic Clients: A Descriptive Study" (1996). *Masters Theses*. 277.
<https://scholarworks.gvsu.edu/theses/277>

This Thesis is brought to you for free and open access by the Graduate Research and Creative Practice at ScholarWorks@GVSU. It has been accepted for inclusion in Masters Theses by an authorized administrator of ScholarWorks@GVSU. For more information, please contact scholarworks@gvsu.edu.

CONTRIBUTING FACTORS IN MEDICATION NONADHERENCE IN
SCHIZOPHRENIC CLIENTS: A DESCRIPTIVE STUDY

By

Sharron E. Howarth

A THESIS

Submitted to Grand Valley State University
in partial fulfillment of the requirements for
the degree of

MASTER OF SCIENCE IN NURSING

Kirkhof School of Nursing

1996

Thesis Committee Members:

Andrea C. Bostrom, Ph.D. R.N.

Patricia W. Underwood, Ph.D. R.N.

Aubrie Gordon, Ed.D. M.S.W., L.L.P.

ABSTRACT

CONTRIBUTING FACTORS IN MEDICATION NONADHERENCE IN
SCHIZOPHRENIC CLIENTS: A DESCRIPTIVE STUDY

By
Sharron E. Howarth

Medication nonadherence in schizophrenic clients is a major issue for psychiatric nurses. The purpose of this descriptive study was to explore factors identified by the schizophrenic client and the client's primary nurse that contribute to medication nonadherence. The Health Belief Model and Peplau's Model were the theoretical frameworks used. The sample included 20 schizophrenic clients with a history of medication nonadherence and 20 primary psychiatric registered nurses.

Face-to-face interviews using the Compliance Interview Questionnaire were conducted with the psychiatric client and the primary nurse. Results indicated a difference between nurses' and clients' perceptions of the reasons for medication nonadherence. Most frequently, nurses believed that clients did not feel the need for medication. The most identified reason for clients was medication side effects. Furthermore, results indicated that nurse-client pairs of the same gender were more likely to agree on the frequency of ingestion of medication than nurse-client pairs of different genders.

Acknowledgements

Many thanks to the nurses at the Kalamazoo Psychiatric Hospital who participated in this study. Also, a thank you to Melissa Hayes for her editorial assistance, support, and encouragement. I extend my sincere appreciation to my committee chair, Dr. Andrea Bostrom, for her guidance, patience, encouragement, and understanding. The time she devoted in assisting with this project helped to make it a reality. I am also grateful to my committee members, Dr. Aubrie Gordon and Dr. Patricia Underwood. I also want to thank my dear friend Elizabeth Howell for her encouragement and support. Finally, I extend my heartfelt thanks to my husband, James, for always being there and believing in me.

Sharron E. Howarth

Table of Contents

List of Tables	v
List of Appendices	vi
CHAPTER	
1 INTRODUCTION	1
2 CONCEPTUAL FRAMEWORK AND REVIEW OF LITERATURE	3
Conceptual Framework	3
Health Belief Model (HBM)	3
Peplau's Interpersonal Model	5
Literature Review	6
HBM in mental health treatment	6
HBM and adherence to physical treatment regimens	12
Literature review of Peplau's Interpersonal Theory	16
Summary	16
Conclusion	17
3 METHODOLOGY	20
Sample	20
Instruments	21
Procedure	22
4 RESULTS	24
Identified Barriers	24
Additional Findings	27
5 DISCUSSION	29
Limitations	30
Recommendations	31
Research	31
Clinical nursing practice	31
Clinical nursing administration	32
Clinical nursing education	32
APPENDICES	33
REFERENCES	48

List of Tables

TABLE

1	Definition of Terms	19
2	Barriers: Most Important Reasons for Medication Nonadherence Identified by Nurses and Clients in the 20 study pairs.	25
3	Regularity of Following Medication Regimen as Reported by Clients and Nurses	27
4	Psychotropic Medications Reported by Clients	28
5	Agreement of Responses for Client-Nurse Pairs	45

List of Appendices

APPENDIX

A.	Compliance Interview Questionnaire (Patient)	33
B.	Compliance Interview Questionnaire (Nurse)	36
C.	Permission for Instrument Use	38
D.	Script for Treatment Team Meeting	40
E.	Information and Informed Client Consent for Study Participation	41
F.	Information and Informed Nurse Consent for Study Participation	43
G.	Agreement of Responses for Nurse-Client Pairs	45

CHAPTER 1

INTRODUCTION

Since the 1950s, neuroleptic medication has been shown to be effective in alleviating psychotic symptoms in schizophrenic clients (De Luca, Pittman, Guitterez, & Farcone, 1988). Psychotropic medication is the single most important treatment in schizophrenia, and lack of adherence to a prescribed medication regimen often leads to relapse and rehospitalization of schizophrenic clients (Lund & Frank, 1991). Relapse rates among diagnosed schizophrenics are estimated to be over 50% in the first year post-hospitalization (Sulliger, 1988). To prevent exacerbation of psychotic symptoms and readmission to the hospital, it is imperative that the schizophrenic client adhere to a prescribed medication regimen.

As the trend of deinstitutionalization continues and more schizophrenic clients are placed in the community, the nurse's role in assisting the client to adhere to a prescribed medication regimen is becoming more significant. By identifying factors that contribute to medication nonadherence, the nurse may be able to develop nursing interventions and teaching strategies to assist the schizophrenic client to adhere to a prescribed medication regimen, thus decreasing relapse and rehospitalization rates.

Many investigators have identified medication nonadherence as a serious problem in the treatment of schizophrenia (Sulliger, 1988; Lund & Frank, 1991; Mulaik, 1992). For more than two decades, researchers have been investigating medication nonadherence (Ryan & Falco, 1985). Mulaik (1992) purports that few investigators have studied the specific reasons given by schizophrenic clients for their medication nonadherence. According to Mulaik, nurses have specific knowledge of the patients' current behaviors, attitudes, and responses to medication. Therefore research suggests that nurses are important in facilitating medication adherence (Lund & Frank, 1991). Lund and Frank (1991) discuss the issue that medication nonadherence is multidimensional and involves the interaction of

caregivers. They also suggest that a psychiatric nurse's role in facilitating medication adherence includes assessment, administration, evaluation, and teaching.

The purpose of this study was to focus primarily on barriers to action or reasons identified by the schizophrenic client and the client's primary nurse that contribute to medication nonadherence. The rationale was to explore factors that contribute to medication nonadherence as perceived by the client and the primary nurse. A second objective was to identify these factors and support the importance of establishing an effective mutual relationship between the client and the nurse in promoting adherence to a prescribed medication regimen. According to Janz and Becker (1984), perceived barriers are the most powerful Health Belief Model dimension. Therefore, the most powerful means with which to increase medication adherence is to address these perceived barriers.

CHAPTER 2

CONCEPTUAL FRAMEWORK AND REVIEW OF LITERATURE

From a review of literature, it is evident that the problem of medication nonadherence in chronically ill schizophrenic clients is a significant problem that could benefit from further study. According to Sulliger (1988), medication nonadherence is a major reason leading to the relapse and rehospitalization of schizophrenic clients. By identifying the factors that contribute to medication nonadherence in schizophrenic clients, the nurse can plan interventions to assist the client in adhering to a prescribed medication regimen.

A review of literature was conducted and focused on nursing research related to medication nonadherence in mental illness and use of the Health Belief Model (HBM) (Janz & Becker, 1984). The literature review also includes nursing research using the HBM model to study adherence to physical treatment regimens and Hildegard Peplau's Interpersonal Model (1952). The use of a conceptual framework combining the HBM and Hildegard Peplau's Interpersonal Model is explained.

Conceptual Framework

The Health Belief Model (Janz & Becker, 1984) and Hildegard Peplau's Interpersonal Model (1952) were used as the theoretical frameworks for this study. The HBM has been used to study nonadherence with health measures and provides a theoretical framework for examining the multiple factors that influence an individual's decision to adhere or not to adhere to a recommended treatment regimen (Mulaik, 1992).

Hildegard Peplau's Interpersonal Model (1952) provides a theoretical framework for the identification of nursing interventions to facilitate medication nonadherence. According to Forchuk and Brown (1989), Peplau's Interpersonal Model introduced the first systematic theoretical framework for psychiatric nursing and focused on the nurse-client relationship. Health Belief Model (HBM). The Health Belief Model was developed during the 1950s and 1960s by Kochbaum, Kegeles, Leventhal, and Rosenstock (Redecker, 1988). Redecker

further reported that the HBM was created to explain preventive health behaviors in response to a widespread failure of people to accept methods of disease prevention.

The HBM proposes that, in order for an individual to take recommended health actions, the person must have a desire to avoid illness and the perception that taking a specific health action will alleviate the illness. The HBM examines the concepts of perceived susceptibility, perceived seriousness, perceived benefits, perceived barriers, cues to action, modifying variables, and health motivation in an effort to predict health related behavior (Janz & Becker, 1984).

The concepts of the HBM, as described by Janz and Becker (1984) are defined here. Perceived susceptibility is an individual's belief that he/she is personally susceptible to a disease. Perceived seriousness is an individual's belief that he/she will experience at least moderate alteration in some part of his/her lifestyle as a result of the disease process. Perceived benefits are beliefs of an individual that taking a certain course of action will reduce susceptibility or will reduce the severity if the disease process occurs. Perceived barriers are the beliefs of an individual that taking a certain course of action will not involve overcoming important negative aspects of the health action. A cue to action is an instigating factor, or trigger, that must occur to initiate the appropriate health action. Modifying variables are demographic, sociopsychological, and structural variables. Finally, health motivation relates to a general tendency for an individual to engage in healthy behaviors.

Redecker (1988) assessed several studies on adherence in physical illness using the HBM. The majority of research on adherence, using the HBM as a conceptual framework, has been conducted on physical illness and treatment regimens rather than mental illness. According to Redecker, the HBM dimensions have been used to study adherence in a variety of lifestyle changes and treatment regimens in chronic illness as well.

Mulaik (1992) stated that the use of the HBM is appropriate to study nonadherence in mentally ill clients, if perception of illness threat is assessed. According to Janz and Becker (1984), perceived barriers are the most powerful HBM dimension. Davidhizar (1985) also commented that due to the occurrence of denial of illness in mentally ill clients, the patient's perception of illness as a threat can be affected. Therefore, the threat of illness must be evaluated and assessed.

It is the purpose of this study to focus primarily on barriers to action. Barriers to action can negatively influence a client in taking recommended health actions (Mikhail, 1981). According to the HBM, the benefits must outweigh barriers before health action will occur. By identifying barriers, which are reasons that clients do not adhere to a prescribed medication regimen, nursing interventions can be focused on decreasing barriers so that perceived benefits will outweigh perceived barriers and therefore increase the likelihood of medication adherence. Modifying factors such as demographic data and sociopsychological and structural variables affect perceived susceptibility, perceived seriousness and perceived benefits and barriers (Janz & Becker, 1984). In order to develop nursing interventions to decrease barriers and increase the likelihood of medication adherence, the nurse must also assess modifying factors.

Peplau's Interpersonal Model. In this study, Peplau's Model (1952) was used to support the importance of the establishment of an effective mutual relationship between the client and the primary nurse in promoting adherence to a prescribed medication regimen. Peplau defines nursing as a " . . . significant therapeutic interpersonal process which functions cooperatively with other unit processes that make health possible for individuals" (Peplau, 1952, p. 16). Peplau further believes that human beings thrive on interpersonal relationships and that these relationships are significant in self-maintenance.

According to Peplau (1952), the nurse-client relationship occurs in four phases: orientation, identification, exploitation, and resolution. During these, the nurse functions as a resource person, a counselor, and a surrogate. Peplau purports that the nurse plays a major role in the client's ability to change health related behavior by establishing a therapeutic relationship and developing common goals. Consistent with Peplau's theory, Cameron and Gregor (1987) stated that to promote adherence in clients with chronic illness, the health professional and the client need to actively contribute to the relationship. Ward-Griffin and Brawell (1990) reported that for the achievement of self care to occur, congruence of client and nurse perceptions is vital to mutual goal setting. If the client and the nurse perceive reasons for medication nonadherence differently, this could potentially impair the establishment of a therapeutic nurse-client relationship as well as the establishment of mutual goals. These goals are essential for the client's self-maintenance (Peplau, 1952).

Literature Review

Much research has been conducted using the HBM to study adherence to physical treatment regimens. Mulaik (1992) purported that few investigators have studied the specific reasons given by schizophrenic clients for their medication nonadherence. Review of literature also indicates that most nursing research using Peplau's Interpersonal Model (1952) studied the nurse-client relationship. To date, there has been little research using Peplau's Interpersonal Theory to study medication nonadherence. Several studies related to these theories will be reviewed. Studies related to adherence to mental health treatment and physical treatment regimens using the HBM as a conceptual framework will be discussed initially.

HBM in mental health treatment. Evans (1992) used the HBM with chronically mentally ill clients to examine the relationship between four elements of the HBM and clients' attendance at a partial hospital program. The four elements of the HBM in this study were: the client's perception of the accuracy of diagnosis, the perceived severity of the illness, the perceived efficacy of the partial hospital program, and the perceived cost or barriers of attending a partial hospital program.

A descriptive correlational design was used for this study (Evans, 1992). The sample consisted of 62 patients who had consecutive admissions to a partial hospital program between April 6, 1990, and August 1, 1991. The patients' attendance rates were operationally defined as the percentage of attendance, or the ratio of the actual attendance to the scheduled attendance from admission to discharge. Two questionnaires were used for data collection. One questionnaire was derived from the Standardized Compliance Questionnaire and the second questionnaire was a self-motivation inventory.

The average attendance rate for the subjects was 82% (Evans, 1992). This study also discovered that patients' perception of the cost/barriers and the perception of severity were significantly and inversely correlated with the attendance rate and that the attendance rate was negatively correlated with the number of weeks enrolled in the program. The author also reported that the attendance rate was affected by race and means of transportation. The author concluded that the HBM was useful in understanding patients' attendance behavior

and that self-motivation was not a significant factor.

Limitations of the study were the small sample size, and that the instruments used to collect data for this study were derived from old references. Another limitation was that all the subjects were attending the same partial hospitalization program and therefore the results of this study cannot readily be generalized (Evans, 1992).

The HBM has been used as a conceptual framework to study medication adherence in psychiatric clients. In 1987, Kelly, Mamon, and Scott investigated the relationship between health beliefs and medication adherence among a group of psychiatric outpatients who were prescribed antipsychotic drug regimens. The specific concerns in this study were the association between components of the HBM and medication-taking behavior as well as whether a set of health beliefs exists which is related to medication adherence among outpatients who are chronically mentally ill. A cross-sectional descriptive design was used for this study.

The sample for the study consisted of 107 psychiatric outpatients who were discharged from two Veterans Administration Medical Centers (Kelly, Mamon, & Scott, 1987). All subjects were service-connected for a psychiatric disability and were maintained on a neuroleptic or lithium drug regimen. A structured in-person interview schedule was administered to all subjects in the study. The instrument used to collect data was a questionnaire designed to assess the components of the HBM and client characteristics. The questionnaire was also used to assess self-reported adherence. The reported adherence questionnaire was developed by the authors from a scale designed to assess medication adherence among hypertensive clients. According to the authors, the instrument was shown to have a reasonable degree of reliability and validity.

Factor analysis and coefficient alpha were used to evaluate the measures of health beliefs and self-reported adherence (Kelly et al., 1987). To examine the interrelations between the components of the HBM, this group used zero-order correlations. Findings indicated that all the component measures were moderately inter-correlated except for perceived benefits which was not significantly correlated with the other four components of the HBM. Data showed that clients considered themselves severely ill with a mental problem and one half felt that they were susceptible to rehospitalization due to their illness. Data also revealed

that, overall, taking medication was perceived as a benefit. Findings indicated that 20% of the total variance of reported adherence could be explained by all cues to action, susceptibility, and benefits.

Conclusions from this study supported the concepts that psychiatric outpatients hold identifiable patterns of health beliefs and attitudes (Kelly et al., 1987). It was further concluded that the HBM functions best when used as an integrated model. A limitation of this study is that the results cannot be generalized beyond the sample because all subjects were veterans from two Veterans Administration Medical Centers. Another limitation, as the authors discussed, is that research indicates that clients are known to over-report their degree of actual adherence to a prescribed medication regimen when self-reports of medication are used to collect data (Kelly et al., 1987).

Researchers have studied factors that nurses identify as contributing variables to medication nonadherence in schizophrenic clients. Lund and Frank (1991) investigated factors specified by schizophrenic clients and their nurses that contribute to medication nonadherence. Hildegard Peplau's Interpersonal Model (1952) was used for the conceptual framework. Lund and Franks' (1991) purpose was to explore the perceptions of medication adherence of psychiatric clients and their nurses and to compare these perceptions to determine why clients are nonadherent with their prescribed medication regimen. An explorative, descriptive design was used.

A convenience sample of 25 adult psychiatric clients and 25 registered nursing staff in an inpatient mental health facility were subjects for this study (Lund & Frank, 1991). Medical record documentation of medication nonadherence was required for inclusion, and a semi-structured individual open-ended interview was used to collect data. Instruments were developed by the researchers and based on a modification of the Compliance Questionnaire by Waltz and Strickland (cited in Lund & Frank, 1991). Clients and nurses were interviewed in pairs about the client's medication nonadherence. The instruments consisted of two parts. The first part was designed to elicit demographic data, the patient's diagnosis, and the number of previous psychiatric admissions. The second part asked clients to identify the prescribed medication they were taking and to estimate on a Likert scale how often they took each medication as prescribed. The nursing interview questionnaire was

designed by the researcher to ask nurses to estimate how often they thought patients adhered to their prescribed medication regimens and to identify what they believed were the major reasons for the clients' nonadherence to prescribed medication regimens. A mean compliance score was used to compare clients' and nurses' perceptions about the extent to which clients adhered to their prescribed medication regimens. The responses from the open-ended interviews were categorized according to the central theme expressed.

Findings in this study indicated that psychiatric nurses with more experience perceived that clients were less adherent with their medication regimens (Lund & Frank, 1991). Also discovered was that schizophrenic clients and their nurses identified side effects, forgetting to take medication, and stopping medication because of feeling better as contributing factors in medication nonadherence. Conclusions suggested possible differences in perceptions of the clients and nurses regarding why the client may not adhere to a prescribed medication regimen.

Limitations of this study were notable. Lund and Frank (1991) reported that a convenience sample, taken from one site in northwest Florida, was used, and, therefore, the results of this study cannot be generalized. Lund and Frank (1991) also discussed that the data collection tool had only one testing of validity and reliability and that the statistical analyses were only descriptive in nature. It should also be noted that the sample size for this study was small.

Mulaik (1992) studied factors that contribute to medication nonadherence in schizophrenic clients, using the HBM as a conceptual framework. This study focused primarily on barriers to action, or reasons identified by the nurse and the client for not adhering to a prescribed medication regimen. The purpose was to determine factors identified by the clients, family members, and nurses for the clients' medication nonadherence (Mulaik, 1992).

The sample consisted of 11 triads with a nonadherent schizophrenic client, a family member, and a primary nurse in each triad. Subjects were recidivist with several admissions and a history of two or more documented episodes of medication nonadherence. All subjects were hospitalized at one of two state hospitals in a southeastern metropolitan

area. Each subject had a family member who functioned in a caregiver role and who was available to the researcher. The nurses in the sample were those who were caring for the patients.

To obtain the data from the 11 triads, subjects were interviewed one day per week for six months (Mulaik, 1992). A structured interview was developed to assess specific client reasons and other related factors for the clients' medication nonadherence. Instruments included the structured interview and a demographic data sheet. Open-ended interview questions were developed to study six areas of the HBM, which were: modifying factors, perceived severity of illness, perceived susceptibility to illness, cues to action, and barriers and benefits. Statistical analysis for this study was descriptive in nature.

Mulaik (1992) discovered that the most frequently stated reasons for the schizophrenic patients discontinuing their psychotropic medication were the denial of the need for medication related to the denial of illness, unwillingness to adhere to the amount of medication prescribed, and the use of drugs and alcohol. The author concluded that use of the HBM to study nonadherence in mentally ill clients is appropriate if perception of illness threat is assessed. Mulaik further concluded that clients and families would benefit from more knowledge of schizophrenia and its treatment and from more awareness of stressors, signs of relapse, and improved mutual problem solving.

Limitations of this study were the small sample size and that all subjects were from one of two state hospitals in a southeastern metropolitan area (Mulaik, 1992). Therefore, the results cannot be generalized. Furthermore, statistical analysis was descriptive in nature, and there was no mention of validity or reliability of data collection instruments.

As previously mentioned, many factors have been identified that contribute to medication nonadherence in mentally ill clients. In 1988, Schwartz, Vingiano, and Perez examined the degree to which medication or treatment refusals actually reflect autonomous decision-making among mentally ill clients. For this descriptive study, 25 clients from two inpatient psychiatric units at Beth Israel Medical Center, a teaching hospital in New York City, were subjects. All subjects initially refused medication, but were medicated involuntarily in a medical emergency or as the result of a court order.

The Brief Psychiatric Rating Scale (BPRS) was completed by the researchers for each

client at the point of involuntary medication, and again at discharge (Schwartz et al., 1988). The psychiatric resident responsible for the client's care was also asked to complete the BPRS. At discharge, clients were asked to state the reasons they had refused treatment and were administered the Attitude Towards Involuntary Treatment Questionnaire (Schwartz et al., 1998). This latter instrument was developed by the researchers for this study. The questionnaire consisted of nine statements on which subjects agreed or disagreed based on a seven-point scale. The questionnaire included a statement that presented the primary focus of the study. The question was, "I know that although I was given medication against my will here, it was necessary and important for my treatment" (Schwartz et al., 1988, p. 1050). Subjects for this study were separated into two groups, compliers and noncompliers, based respectively on whether or not they agreed or disagreed with the above statement.

For statistical analysis of this study, one multivariate analysis of variance (MANOVA) of the scores on the items at the time of the involuntary medication and another of the scores at the time of discharge was completed. A three-way analysis of variance on composite measures of the BPRS variables was also conducted (Schwartz et al., 1988).

Results of this study indicated that, at discharge, 17 client compliers felt that their treatment refusal had been correctly overridden by staff (Schwartz et al., 1988). These clients also reported that they believed they should be treated against their will again if necessary. Results also indicated that clients who persistently disapproved of the decision to override their treatment refusal (noncompliers) were grandiose, denied psychotic symptoms, and responded poorly to treatment (Schwartz et al., 1988).

This study concluded that, for most clients, the decision to refuse psychotropic medication is a manifestation of the client's illness (Schwartz et al., 1988). The study also concluded that the decision to refuse psychotropic medication does not reflect autonomous functioning, beliefs about mental illness, or the treatment of mental illness. A limitation of this study was the small sample size, particularly after the sample was divided into two groups. It should be noted that there was no mention of validity or reliability of data collection instruments. Another limitation of this study is that all subjects were from one hospital. Therefore, the results of this study cannot be generalized.

HBM and adherence to physical treatment regimens. As previously mentioned, much nursing research has been conducted using the HBM to study adherence to various physical treatment regimens. Three nursing studies are discussed below.

One focus of research using the HBM is breast self-examination (BSE). Champion and Scott (1993) used the HBM to study women's adherence to BSE performance. The purpose of the study was to test the effects of a theoretically based nurse-delivered intervention on BSE behavior (Champion & Scott, 1993). A two-by-two prospective, randomized, factorial design yielding four groups (control, belief intervention, procedural intervention, and procedural belief intervention) was used.

The sample consisted of 301 women who were randomly selected from a target population (Champion & Scott, 1993). Random-digit dialing was used to produce a probability sample of women 35 years and older who had not developed breast cancer. Telephone solicitors dialed computer-generated random numbers from a large Midwestern metropolitan area and its surrounding counties. If there was no answer, solicitors would redial the number at least ten times. When an eligible woman was contacted, the study was explained and the woman was asked to participate. Women were randomly assigned to one of four groups and assessed for belief variables. An in-home interview was then conducted, and at that time, the intervention was delivered. One year following intervention, women were interviewed to measure outcome variables (Champion & Scott, 1993).

T-tests were used to test for significant differences between pre- and post-intervention beliefs. A priori contrasts with a one-way ANOVA were used to assess differences in outcome measures between groups on measures that were collected after a year. Self-reported BSE frequency and proficiency before and after interventions were assessed with MANOVA for repeated measures of the in-home interview data (Champion & Scott, 1993).

Data were collected using an instrument originally developed by Champion for an earlier study (Champion & Scott, 1993). The instrument was revised extensively for this study and was designed to ask subjects to respond to a series of belief statements based on the variables of the HBM. Responses were summarized on a 5-point Likert scale ranging from strongly agree to strongly disagree. A BSE self-report measurement scale was also used to

assess the frequency and proficiency of self-examination. To measure observation of proficiency, an observer checklist scale was used which contained ten procedural components that are important for BSE and corresponded to items included in the self-report BSE measurement scale was used. Participants were observed using BSE on a model and then performance was scored by a graduate nurse research assistant (Champion & Scott, 1993).

Findings in this study indicated that one year following intervention, significant differences in self-reported proficiency, observer-rated proficiency, and sensitivity (lump detection in a breast model) were discovered between the procedural and control group as well as the procedural belief and control group (Champion & Scott, 1993). Findings also indicated that significant increases were found on observer-rated proficiency and sensitivity for the procedural belief group when compared to the belief group. Significant differences were shown for the belief variables of seriousness, benefits, health, motivation, and control for the belief and procedural belief groups. The belief variable that was most susceptible to change was benefits. Finally, results showed that a significant increase was discovered in the procedural belief group on nodule detection when compared to the procedural group.

The researchers concluded that nursing interventions may increase BSE frequency and proficiency over time. They further concluded that a statistically significant additive effect for sensitivity exists when belief interventions are added to procedural teaching (Champion & Scott, 1993).

A limitation of this study included the use of an in-home interview. Therefore, the results cannot be generalized to clinic settings (Champion & Scott, 1993). A second limitation is that a low proportion of subjects initially agreed to participate (33%); therefore, generalizability is limited. Champion and Scott (1993) also discuss the fact that the generalizability is limited because participants were relatively well-educated and many were more interested in or motivated to learn about BSE than those who refused. A final limitation of this study was the inclusion of a newly revised instrument. Therefore, there were no previous studies conducted using this instrument, and no previous testing of validity and reliability. Agars and McMurray (1993) used the HBM as a conceptual framework to study BSE practice among nurses. It was the purpose of their study to assess

the effects of three alternative methods of BSE instruction on nurses' personal BSE practices. It was also the purpose of their study to determine the influence of nurses' health beliefs on their practice of BSE. A quasi-experimental design was used for this study.

A non-random convenience sample of 166 nurses practicing in four acute-care hospitals in Western Australia (Agars & McMurray, 1993) was used. A knowledge pre-test and a three-month follow-up test were administered to a control group and three experimental groups. Group A nurses served as a control group, while Group B nurses were given a booklet on BSE produced by the Cancer Foundation of Western Australia. Group C nurses were invited to attend a 30-minute discussion and film session, which included an overview of breast cancer risk factors and a 13-minute film. Group D nurses were invited to attend a one-to-one session, which included a brief discussion of breast structure, hormonal structure, hormonal influences, risk factors for breast cancer, and early detection methods. The session also included demonstration of BSE procedures using a silicone breast model that contained lumps. Nurses in Group D were required to perform an actual BSE return demonstration.

Agars and McMurray (1993) used a three-section questionnaire to collect data for this study. Section A of the questionnaire was used to measure practice of BSE in frequency, timing in relation to the menstrual cycle, correct preparation and bodily position on a 0-12 scale. Section B was used to measure the subject's health beliefs using variables of the HBM, perceived barriers, perceived seriousness, perceived susceptibility, and perceived benefits. Section C of the instrument was developed to assess family history of breast cancer and subject characteristics (Agars & McMurray, 1993).

Findings for this study were analyzed in terms of the Health Belief Model. The variables barriers to action and perceived susceptibility were found to be predictive of BSE practice. An ANCOVA was used to compare scores at post-test with scores at pretest. Results indicated that all three teaching strategies produced a significant improvement in BSE technique when compared to the control group, however, the nurses who were involved in the film and discussion group had the most significant increase in effectiveness of BSE techniques. The mean health belief scores for BSE practitioners and non-practitioners were significantly different only at follow up.

The author concluded that nurses' health beliefs can predict BSE behavior. This study also concluded that film and discussion were the most effective strategy for teaching BSE (Agars & McMurray, 1993).

A limitation of this study was that all subjects were nurses in Western Australian hospitals in acute-care areas. Therefore, the generalizability is limited to that population. It should also be noted that all subjects were well educated, hence again limiting the generalizability. Further, there was a three-month period of time between pre-test and follow up, and other events could have potentially influenced the results of the study.

The HBM has not exclusively been used to study BSE behavior, it has also been used to study adherence to chronic illness treatment regimens. Schwab, Meyer, and Merrill (1994) used the HBM to study adherence to treatment for patients with diabetes. The purpose of this descriptive study was to test a culturally sensitive instrument based on the concepts of the HBM to measure health beliefs of low-income Mexican-Americans with diabetes. The sample for the study consisted of 199 subjects, 100 from two rural clinics and 99 from two urban clinics. The clinics were tax-supported clinics that served low-income clientele. The majority of the subjects were female.

Data were collected by trained bilingual interviewers (Schwab, Meyer, & Merrill, 1994). Individual interviews were arranged for a duration of one hour with each subject. Questions from the instrument were read by the interviewer, and subjects were asked to respond. The instrument was a 65-item questionnaire developed using the cultural and clinical experience of the researchers, review of the available literature, expert review panels, analysis of established instruments, and statistical consultation. Two versions of the instrument were developed in English and Spanish at a fifth-grade literacy level.

Construct validity was evaluated using a t-test to compare the responses between urban and rural patients (Schwab et al., 1994). Analysis revealed that the sub-scales of fatalism and perceived barriers resulted in scores that were higher for rural patients. Sub-scale scores for urban patients were higher for cues to action. Analysis of reliability was conducted using the methods of internal consistency (Chronbach's alpha) for total scores and sub-scales, item analysis (discrimination index), test-retest, and self-administered versus interview. These findings indicated that sub-scales of benefits and barriers were

identified adequately as evidenced by Chronbach alpha and factor analyses. The sub-scales of cues to action, susceptibility, and severity did not stand up to psychometric analysis (Schwab et al., 1994).

There were two major differences in beliefs identified in this study. The rural respondents were more fatalistic than urban respondents and the rural respondents were less likely to want more information about their diabetes (Schwab et al., 1994).

The authors concluded that development and testing of the HBM-based instrument did not enable researchers to obtain accurate measurements of health beliefs specific to Mexican-Americans. The study further purported that there is a great need for instruments which are sensitive for determining psychosocial factors, health beliefs, and cultural differences on how Mexican-Americans view diabetes (Schwab et al., 1994).

One limitation of this study is that a face-to-face interview was used for data collection, thus the responses could have been biased toward what the participants believed the interviewer wanted to hear. Schwab et al. (1994) noted that participants seemed reluctant to discuss their true feelings during the interview, and their reluctance could also result in biased responses from participants. A second limitation is that there was little specific literature for this study. This researcher notes that the data collection instrument was newly designed by the authors, and therefore there were no previous studies conducted using this instrument and no previous tests of reliability or validity. A third limitation is that all subjects were of low-income status and limited education, thus limiting generalizability to other populations.

Literature review of Peplau's Interpersonal Theory. Review of literature indicates that most nursing research utilizing Peplau's Interpersonal Theory focuses on the nurse-client relationship. One study was found using Peplau's Interpersonal Theory as a theoretical framework for examining medication nonadherence in schizophrenic clients. This study, by Lund and Frank (1992), has been previously discussed. No studies were found using Peplau's theory to study mutual goal setting.

Summary. The literature review focused on the use of the HBM to study factors that contribute to medication nonadherence in schizophrenic clients and other psychiatric illnesses. It also discussed nursing research using Hildegard Peplau's theory of nursing.

The review indicated that there has been much research using the HBM to study adherence to physical treatment regimens. However, there has been little research using the HBM to study adherence in schizophrenic clients. Few studies were found that explored specific reasons identified by schizophrenic clients for their medication nonadherence.

From the review, one can conclude that the HBM can be used to study health beliefs and adherence in mental illness treatment regimens. It appears the multiple factors such as denial of mental illness, drug or alcohol use, medication side effects, and lack of medication knowledge, are associated with adherence to a prescribed medication regimen in schizophrenic clients (Mulaik, 1992). According to the literature review, multiple factors such as teaching strategies and health behaviors are also associated with adherence in physical treatment regimens (Agars & McMurray, 1993).

The majority of studies discussed have limited generalizability due to the use of small convenience samples. There are also limitations of validity and reliability in instruments used to assess adherence in psychiatric clients using the HBM. There were a limited number of instruments designed specifically to study components of the HBM in psychiatric clients. From the review of literature, it is evident that there is a need for further research to study the usefulness of the HBM in psychiatric clients, and to develop instruments that can be used to study the concepts of the HBM in relation to psychiatric clients.

Review of nursing research indicated that most research using Peplau's Interpersonal Theory focused on the nurse-client relationship. Only one study was found using Peplau's theory to study medication nonadherence, and no studies were found using Peplau's model to study mutual goal setting. Further, from the review of nursing literature, there is a lack of research using Peplau's Interpersonal Theory to study medication nonadherence. Future investigation into the use of Peplau's theory in conjunction with medication nonadherence may be beneficial.

Conclusion

Medication nonadherence is a major problem in caring for the schizophrenic client. Adherence to a prescribed medication regimen may be promoted through the establishment of the nurse-client relationship and the identification of contributing factors of medication nonadherence in schizophrenic clients. Nurses recognize that medication adherence in

chronically ill schizophrenic clients can be promoted by assessment of factors that contribute to medication nonadherence based on the concepts of the HBM (Janz & Becker, 1984). According to Lund and Frank (1991), nurses can promote adherence by successful establishment of the nurse-client relationship based on Peplau's Interpersonal Theory (1952). By the promotion of medication adherence, nurses can assist clients in prevention of relapse and rehospitalization in the future. Promotion of medication adherence can also assist clients in long-term management of their chronic illness.

From the review of literature, it is evident that further research is needed using the HBM to study medication nonadherence in schizophrenic clients. It is also evident that further research is needed using Peplau's Interpersonal Theory to study the effects of the nurse-client relationship in reference to medication nonadherence.

The purpose of this study is to explore factors that contribute to medication nonadherence as identified by the schizophrenic client and the client's primary nurse. The questions address the factors identified by the schizophrenic client that contribute to medication nonadherence, factors identified by the client's primary nurse that contribute to medication nonadherence, and the differences between these two perspectives. The hypothesis was that differences exist between factors contributing to medication nonadherence as identified by clients and their primary nurses. Major definitions used in this study are included in Table 1.

Table 1

Definition of Terms

Term	Definition
Barriers	--defined as reasons schizophrenic clients do not adhere to prescribed medication regimens.
Compliance	--may be used interchangeably with the term adherence.
Medication nonadherence	--defined as not taking psychotropic medication as prescribed.
Medication adherence	--defined as taking psychotropic medication as prescribed.
Noncompliance	--may be used interchangeably with the term nonadherence.
Psychotropic medication	--medication which affects the brain and drastically decreases psychotic symptoms such as delusions, hallucinations, and impaired perception in the schizophrenic client. May be used interchangeably with medications referred to as antipsychotics or neuroleptics.

CHAPTER 3

METHODOLOGY

For this descriptive two group comparative study, a structured interview was used to assess specific reasons that contribute to medication nonadherence given by schizophrenic clients and their primary nurses. This study was conducted at a 180-bed state psychiatric hospital in Southwestern Michigan. Approval from the Nursing Research Committee was obtained. The factors identified by the schizophrenic client and the primary nurse that contribute to medication nonadherence were explored as the independent variable. The dependent variable in this study was nonadherence to a prescribed medication regimen.

Sample

A convenience sample of 20 schizophrenic clients of both genders between the ages of 18 and 52, and 18 primary psychiatric registered nurses were the subjects for this study. Two nurses served as a primary nurse for two clients. The sample consisted of 20 nurse-client pairs. The client sample consisted of 15% (n=3) females and 85% (n=17) males with a diagnosis of some type of schizophrenia. Two clients were Hispanic, nine were Afro-Americans, and nine were White. Clients had an age range from 18 to 52 years with a mean age of 35 years. Sixteen clients reported never being married, one was married, one was separated, and two were divorced. In terms of education, six clients reported some college course work, seven clients were high school graduates, and seven reported never finishing high school. Ninety percent (n=18) were not currently employed and all 20 clients had a history of multiple admissions to psychiatric hospitals. In addition to the current admission, client subjects have had at least one previous admission in the past six months related to medication nonadherence. An additional criterion for the client selection included medical record documentation of client medication nonadherence as assessed by the nurse, physician, or client report. The final criterion for client selection was that clients were not

severely agitated or uncooperative because the symptomatology of the client's illness, such as delusions, hallucinations, agitation, and uncooperative behavior, could influence the variables in this study (De Luca et al., 1988).

Criteria for nurse subjects included a minimum of one year of psychiatric nursing experience and designation as primary nurse of a client subject. Of the nurse subjects, 30% (n=6) were male and 60% (n=12) were female. Two nurses served as a primary nurse for two clients each. Psychiatric nursing experience ranged from 3 to 15 years with a mean of 10.4 years of experience. Five nurses had baccalaureate degrees, eight had associate degrees, and five graduated from diploma programs. All nurse subjects were Caucasian.

Instruments

The Compliance Interview Questionnaire for the Schizophrenic Client and for the Primary Nurse designed by Lund and Frank (1991) were used to collect data. These instruments were used by Lund and Frank and based on a modification of the Compliance Questionnaire developed earlier by Waltz and Strickland (cited in Lund & Frank, 1991). The client instrument can be viewed in Appendix A, the nurse questionnaire can be viewed in Appendix B. These instruments were used with permission (see Appendix C).

The first part of the instrument was designed to elicit the client's diagnosis, number of previous admissions, and demographic data. The second part of the instrument is aimed at asking clients, using a 5-point scale (4 = all the time and 0 = none of the time), to estimate the frequency of taking their medication. Clients were also asked to identify the medications currently prescribed to them and, using an open-ended question, the major reasons for not taking medications as prescribed. For this study, two additional questions were included in the first part of the client interview. The questions assess the current Diagnostic and Statistical Manual of Mental Disorders-edition IV (DSM-IV) diagnosis and the chief complaint that brought about their current hospitalization.

The primary nurse subjects were asked to estimate, on a 5-point scale, how often they thought their primary client adhered to a prescribed medication regimen for each medication prescribed. The following demographic data from nursing subjects were collected: gender, race, psychiatric nursing experience, employment status, and educational level.

For the Compliance Interview Questionnaire for the Schizophrenic Client and the Primary Nurse, Lund and Frank (1991) established face validity by having the instrument reviewed by five nurses with expertise in psychiatric nursing. Lund and Frank (1991) examined the reliability of the complete interview guide using the test-retest method. Lund and Frank administered the instrument to five nurses and five clients with prescribed medication regimens. A week later the same instrument was readministered to the same subjects. According to Lund and Frank (1991), similar results were found when the instrument was readministered. Content validity for this instrument was supported by mental health experts.

Procedure

Permission was granted by the hospital research board for the researcher to attend treatment team meetings and to review clients' medical records for study eligibility. To recruit subjects, this researcher attended the treatment team meeting on one female and two male inpatient psychiatric units. At the beginning of the meeting, this researcher explained the purpose of the study, participant eligibility, and data collection methodology to the treatment team. The treatment team was then asked to select clients who met participant eligibility and who they believed would consent to study participation (see Treatment Team Script in Appendix C). The treatment team was asked to identify each client's designated primary nurse.

Following treatment team meeting, selected clients were approached by nurse managers or treatment team members and asked to participate in the study. Clients that volunteered were escorted by staff to a private conference room to meet the researcher. Client consent was then obtained by this researcher. Client subjects were interviewed first using a structured face-to-face format. The interview took place in a small conference room on the unit. The door to the conference room remained closed during the interviews to protect confidentiality. It was a policy on one unit that staff remain outside the closed conference room door during the clients' interviews with the researcher. To the researcher's knowledge, the staff outside the door were unable to hear the conversation within the room. Following the client interview, the client medical record was reviewed for accuracy of reported client information, to collect data pertaining to the client's psychiatric diagnosis.

and to identify documentation and past admissions related to medication nonadherence.

After the client was interviewed, the client's primary nurse was asked to participate in the study and informed consent was signed. Two nurses functioned as a primary nurse for two clients. Nurses were interviewed individually, face-to-face, in the same conference room as the clients.

Potential risk factors to client subjects were considered. A minor risk factor to client subjects may have been the inconvenience of time required for the interview for data collection. To limit client inconvenience, interview time did not exceed 20 minutes at a given session. To assure client confidentiality, all data were kept confidential and used only for the purposes of this study. In addition, participation in the study was on a voluntary basis, and subjects received no rewards for participating. Subjects reserved the right to withdraw from the study at any time without affecting their care or employment status. Data collected from subjects were kept confidential in that numbers, rather than names, were used to assure anonymity. Appendix D contains the informed consent for the client. Appendix E contains the informed consent for the nurse.

CHAPTER 4

RESULTS

The purpose of this study was to explore factors identified by the schizophrenic client and the client's primary nurse that contribute to medication nonadherence. The questions were: What factors are identified by the schizophrenic client that contribute to medication nonadherence? What factors are identified by the client's primary nurse that contribute to medication nonadherence? How are they different?

The data analyzed and interpreted from this study were from the completed compliance questionnaires from the nurses and clients. In order to obtain an overall perception of factors that contribute to medication nonadherence as identified by the clients and the clients' primary nurses, responses on the questionnaires were tabulated and compared.

Identified Barriers

To analyze the nurses' and clients' perception as to why the clients did not adhere to their prescribed medication regimen, the responses from the questionnaires were categorized according to the central theme expressed. The frequency of occurrence was tabulated and is presented in Table 2.

The data indicated that the most frequently reported reason that clients did not adhere to their prescribed medication regimen, as perceived by the nurses, was the belief that the client felt he/she was not mentally ill and did not need medication (n=11). Examples of reasons reported by nurses included: "He does not have insight into his mental illness." "He believes he does not need medication." "He is paranoid and has delusional thoughts." "He denies his mental illness." The second top reason identified by the nurses was that clients discontinued their medication due to feeling better (n=4). An example of a statement reported by a nurse was, "He believes that he was cured."

The most frequently cited reason clients identified for their medication nonadherence was

side effects (n=8). Examples reported by clients for their medication nonadherence due to side effects included: "The medication drugs me up." "Side effects." "Made me stoned." "Gives me the shakes." "Medicine is a living hell." "Blurred vision." "Speech problems." "EPS." Only two nurses identified side effects as a reason for medication nonadherence. The second most frequently cited reason was that they did not believe they needed the medication (n=6). Two examples of what clients reported about not needing medications included: "I don't need medication." "I don't have a mental illness."

Table 2
Barriers: Most Important Reasons for Medication Nonadherence Identified by Nurses and Clients in the 20 Study Pairs.

Reason	nurses		clients	
	n	%	n	%
Not mentally ill-- do not see the need for medication.	11	55	6	30
Felt better and stopped taking medication.	4	20	1	5
Medication not working.	1	5	1	5
Drinking alcohol.	0	0	1	5
Heard voices-- telling to stop medication.	2	10	1	5
Medication side effects.	2	10	8	40
Believe medication was incorrect dosage or type of psychotropic medication.	0	0	2	10

Responses of client-nurse pairs are tabulated in Table 5 in Appendix G. Six paired responses matched for the main reason for the clients' medication nonadherence. Three of these pairs were same-gendered, male-male pairs. The nurses in these pairs had more than 10 years experience. Certain responses were recognized exclusively by the client subjects. Clients exclusively stated that medication nonadherence was due to the belief that they had been prescribed the wrong psychotropic medication or an incorrect dose. Consuming alcohol was reported by one client as a reason for discontinuing medication.

The accuracy of prescribed medications was validated between the client and the record, the nurse and the client's medical record, and the client and nurse pair. Eighty-five percent of clients were accurate in reporting all prescribed medications when compared to their medical records. When comparing nurses' accuracy of reported medication to the clients' medical records, 85% of nurses were accurate. When comparing nurse-client accuracy in reporting prescribed medication, 85% identified the same medications. Two pairs reported no alike medications, and in one pair the nurse omitted one medication that the client reported. These data indicate that there is a high degree of accuracy from nurses and clients in regards to their knowledge of the prescribed medications.

Table 3 lists the regularity of following the prescribed regimen as reported by the clients and nurses. No nurses reported that client's adhered to their prescribed medication regimen all of the time. However, 15% (n=3) of clients reported that they adhered to their prescribed medication regimen all of the time. Clients' and nurses' responses were similar in that 30% (n=6) of clients reported that they adhered to a prescribed medication regimen most of the time, and 35% (n=7) of nurses reported that they believed clients adhered most of the time. These data suggest that there are notable differences between nurses' and clients' perceptions of regularity of ingestion of psychotropic medications.

Table 3

Regularity of Following Medication Regimen as Reported by Clients and Nurses

Frequency	Clients n=20		Nurses n=18	
	n	%	n	%
All of time	3	15	0	0
Most of time	6	30	7	35
About half time	4	20	3	15
Very seldom	2	10	3	15
Not at all	5	25	7	35

Note: Two nurses served as a primary nurse for two different clients.

Additional Findings

Clients reported a total of 13 different medication prescriptions. Haldol and Prolixin were reported most frequently. Six clients commented that they took Haldol and six took Prolixin. Fifteen clients reported taking more than one psychotropic medication. Three of six clients who reported taking Haldol stated that the main reason for medication nonadherence was side effects. Four of six clients who reported taking Prolixin stated that the main reason for medication nonadherence was medication side effects. The medication data can be viewed in Table 4.

The extent of knowledge that clients possessed about their prescribed medications was explored. Sixty percent of clients were able to report the name of their medications, the frequency of the medications, and the length of time their medications had been prescribed. Twenty-five percent of clients were able to report the name of their medications and the frequency prescribed. Ten percent of clients were unable to report any specific knowledge of their prescribed medication regimen. These data indicated that the majority of clients were knowledgeable about their psychotropic medication regimen.

In summary, data indicated that the major reason for medication nonadherence in this sample of schizophrenic clients as identified by the client was medication side effects. The major reason for medication nonadherence in schizophrenic clients as perceived by the psychiatric nurse was the clients' denial of mental illness.

Table 4

Psychotropic Medications Reported by Clients

Medication	Number of Clients
Artane	3
Benadryl	1
Clozapine	1
Cogentin	5
Depakote	2
Haldol	6
Lithium	1
Loxitane	2
Mellaril	2
Prolixin	6
Risperdol	4
Tegretol	1

Note: More than 20 medication prescriptions were reported because some clients had more than one prescribed drug.

CHAPTER 5

DISCUSSION

Psychotropic medication is the single most important treatment in schizophrenia. Lack of adherence to a prescribed medication regimen often leads to relapse and rehospitalization of schizophrenic clients. Research suggests that nurses are important in facilitating medication adherence in schizophrenic clients. The nurses' role in facilitating medication adherence includes assessment, administration, evaluation, and teaching. The implementation of this role can be explored from the conceptual framework of Hildegard Peplau. Peplau believed that nurses can foster changes in clients' health related behaviors (Lund & Frank, 1991).

Results of this study indicate that there are differences in nurses' and clients' perception of medication nonadherence. These results are important, as Lund and Frank emphasized. If nurses and clients perceive reasons for medication nonadherence differently, there is a potential for obstruction of mutual goal setting and effective interventions. By identifying these differences and perceptions, the nurse can plan interventions to foster mutual goal setting and establish a nurse-client relationship that will facilitate the client's adherence to a prescribed medication regimen.

The results of this study support those of Lund and Frank in 1991. These researchers discovered that the most frequently identified reason for medication nonadherence as reported by nurses was denial of mental illness. Also consistent with that study, the most frequently reported reason for medication nonadherence reported by schizophrenic clients were medication side effects.

The results of this study can also be explored from the conceptual framework of the Health Belief Model (HBM). It was the primary purpose of this study to explore barriers to action, or reasons identified by the schizophrenic client and the client's primary nurse, that

contribute to medication nonadherence. This study found, as did Mulaik in 1992, that the number one barrier reported by nurses for client's nonadherence was the denial of the need for medication. Related to the denial of a need for medication is the client's denial of mental illness. Six clients reported that they did not need medication because they were not mentally ill, thus denying their mental illness.

The top reported barrier by clients was medication side effects. According to Janz and Becker (1984), perceived barriers are the most powerful HBM dimension. The HBM purports that high perceived barriers can negatively influence a person to take recommended health action. By identification of the client's perceived barriers, nurses can plan interventions with an effort aimed at decreasing perceived barriers, thus increasing the likelihood of medication adherence.

The majority of clients demonstrated much knowledge about their medication regimen. This is important in that knowledge of prescribed medication alone will not promote medication adherence.

Nurses can benefit from increased awareness of stated reasons clients report for not taking medication. The information collected in this study may be incorporated into nursing continuing education programs to include more interventions aimed at promoting medication adherence.

In summary, multiple factors contribute to medication nonadherence in schizophrenic clients. Disagreement as well as agreement in perception of contributing factors among clients and their primary nurses can provide useful information for identifying effective interventions for nurses to implement with clients in an effort to promote medication adherence.

Limitations

One limitation of this study is that the small convenient sample, taken from one site in Southwest Michigan, decreases the possibility of generalizing the results to other populations. The data collection instrument had only one testing for validity and reliability conducted by Lund and Frank (1992) prior to this study. Data analysis was only descriptive in nature. Another limitation is that face-to-face interviews were used for data

collection and the subjects may have responded to extraneous variables related to this method.

Recommendations

Recommendations from this study are made for the areas of research, clinical nursing practice, clinical nursing administration, and clinical nursing education.

Research. Recommendations for research would be a revision of the data collection instrument to include an assessment of the concepts of the HBM directly from the clients' perception. Further research to explore the association between medication nonadherence in schizophrenic clients and denial of mental illness is needed. Further research needs to be conducted to assess the actual role of the nurse in medication adherence based on Peplau's Model. Research aimed at identification of interventions and strategies that would assist in medication adherence would be beneficial. Data analysis based more on statistical methods could provide more accurate information than the descriptive analysis provided in this study. Replication of this study using a larger sample with more diversity in terms of gender and location would add to the literature.

Clinical nursing practice. This study suggests that there are differences in clients' and nurses' perceptions of reasons that clients do not adhere to a prescribed medication regimen. It is recommended that there should be more mutual goal setting and goal identification between clients and nurses. Further, it is also suggested that clients may be more likely to adhere to a prescribed medication regimen if the client perceives that he/she will experience minimal side effects of their prescribed medication. Efforts to minimize side effects such as appropriate titration of medications are essential. Education that explains the cause, course, and management of side effects is also beneficial. It is recommended upon client admission to the hospital that nurses individually assess each client for medication adherence and response to side effects.

This study also suggests that medication knowledge alone will not promote medication adherence in schizophrenic clients. In this study, 60% of clients who did not adhere to their prescribed medication regimen demonstrated much knowledge about their prescribed medication regimen. It is recommended that nurses become more aware of the multiple factors that contribute to medication nonadherence. Thus, nurses could plan interventions

to limit barriers to medication nonadherence and improve the clients' likelihood to adhere to their prescribed regimen.

Clinical nursing administration. Administration could benefit by identifying what would help clients to take their medication and reduce barriers to adherence in an effort to prevent relapse and rehospitalization. As the push for deinstitutionalization continues and more schizophrenic clients are placed in the community, the role of administration in assisting the client to adhere to a prescribed medication regimen will become more significant. In terms of cost effective strategies in mental health, a decrease in the number of relapses and rehospitalizations can decrease the cost of managed care. Without the research focused on medication nonadherence, this cost effective strategy cannot be obtained due to unawareness of the factors contributing to client relapse and rehospitalization.

Clinical nursing education. Psychiatric nursing education should address the complex issue of medication nonadherence among mentally ill clients. Nursing education that focuses on teaching theories associated with medication nonadherence would be beneficial. Furthermore, it is recommended that nursing education provide teaching in the area of assessment for identification of factors that contribute to medication nonadherence in mentally ill populations.

In clinical practice, it should be recognized that medication nonadherence in schizophrenic clients is a major factor associated with relapse and rehospitalization. Another useful technique for nurses to learn would be an individual assessment of a client's adherence to his/her prescribed medication regimen. With individualized assessments and identification of barriers to medication adherence, strategies and nursing interventions to promote medication adherence can be personalized and more effective. Finally, nurses should be aware that there may be differences in clients' and nurses' perceptions of reasons for clients' medication nonadherence. These differences in viewpoint should be assessed and not assumed if nurses are to aid clients in preventing relapse and rehospitalization as a result of medication nonadherence.

APPENDICES

APPENDIX A.

Compliance Interview Questionnaire (Patient)

Instructions: The questions you will be asked have to do with general information about you and the medication recommendations your doctor suggested you follow.

1. Male or Female (Interview to circle)
2. Race: _____ (Interviewer to fill-in)
3. What is your age? _____
4. Marital status: _____
5. Are you currently employed? Yes or No
 If yes, how long and where? _____
6. How much education have you had? _____
7. Current psychiatrist: _____
8. Diagnosis, DSM IV (Axis I): _____
9. Number of prior psychiatric admission: _____
10. What brought about your current hospitalization? _____

11. What were the medications you were taking before admission to the hospital?

12. What is the frequency/day you take each medication?
13. How long have you been taking each of these medications?

APPENDIX A (continued)

The remaining questions are in reference to medications prescribed before admission.

14. For each medication mentioned, would you estimate that you usually take the medication: _____

- _____ (4) all of the time
- _____ (3) most of the time
- _____ (2) about half the time
- _____ (1) very seldom
- _____ (0) none of the time

medication: _____

- _____ (4) all of the time
- _____ (3) most of the time
- _____ (2) about half the time
- _____ (1) very seldom
- _____ (0) none of the time

medication: _____

- _____ (4) all of the time
- _____ (3) most of the time
- _____ (2) about half the time
- _____ (1) very seldom
- _____ (0) none of the time

medication: _____

- _____ (4) all of the time
- _____ (3) most of the time

APPENDIX A (continued)

_____ (2) about half the time

_____ (1) very seldom

_____ (0) none of the time

medication: _____

_____ (4) all of the time

_____ (3) most of the time

_____ (2) about half the time

_____ (1) very seldom

_____ (0) none of the time

15. Have you ever had difficulty with any of these?

_____ (4) all of the time

_____ (3) most of the time

_____ (2) about half the time

_____ (1) very seldom

_____ (0) none of the time

What kind of difficulty? _____

16. Has anything been helpful with some of the difficulties?

17. For each of the medications you take, what is the major reason you did not take it as prescribed? _____

18. What is the most important reason why you have not taken your medications? _____

APPENDIX B.

Compliance Interview Questionnaire (Nurse)

Instructions: The questions you will be asked have to do with general information about you and with the medications the patients are taking.

1. Male or Female (Interviewer to circle)
2. Race: _____ (Interviewer to fill-in)
3. How long have you been a psychiatric nurse? _____
4. What is your employment status? (full-time/part-time/flex)
5. Education: ADN Diploma Baccalaureate Masters (circle)
6. For the medications mentioned, estimate how often you think a patient takes the medications as directed when not hospitalized?

medication: _____

- _____ (4) all of the time
_____ (3) most of the time
_____ (2) about half the time
_____ (1) very seldom
_____ (0) none of the time

medication: _____

- _____ (4) all of the time
_____ (3) most of the time
_____ (2) about half the time
_____ (1) very seldom
_____ (0) none of the time

APPENDIX B (continued)

medication: _____

- _____ (4) all of the time
- _____ (3) most of the time
- _____ (2) about half the time
- _____ (1) very seldom
- _____ (0) none of the time

medication: _____

- _____ (4) all of the time
- _____ (3) most of the time
- _____ (2) about half the time
- _____ (1) very seldom
- _____ (0) none of the time

medication: _____

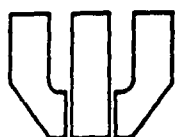
- _____ (4) all of the time
- _____ (3) most of the time
- _____ (2) about half the time
- _____ (1) very seldom
- _____ (0) none of the time

7. For the medications mentioned, give the major reason you think patients would not take them as directed? _____

8. What do you think is the one most important reason that patients do not take their medications as directed? _____

APPENDIX C

Permission For Instrument Use



EMORY UNIVERSITY
NELL HODGSON WOODRUFF SCHOOL OF NURSING
Atlanta, Georgia 30322

April 25, 1995

Sharron E. Howarth, BSN, RN
3506 Stongate Road
Kalamazoo, MI 49004


Dear Ms. Howarth:

Enclosed is a copy of the patient demographics form and the interview schedule for the patient, his/her family member, and the primary nurse used to study noncompliance with medications in schizophrenic patients. As you know, this study was reported in Issues in Mental Health Nursing, 13, 219-237, 1992. You have my permission to use the interview schedules for your study. In return I would appreciate an abstract when the study is complete.

In carrying out my study, I tape recorded the interviews, with permission, and attained family member interviews by phone, also tape recorded. All participants signed written consents as well. I found that it was important to have the patient clearly diagnosed as having schizophrenia and to carefully exclude bipolar patients, any with organicity, etc. Ideally, you should exclude dual diagnosis patients although many of the patients do use some street drugs or alcohol.

Good luck with your study. If I can be of help, please let me know.

Sincerely yours,


Jane Mulaik, PhD, RN
Associate Professor

JM/co

APPENDIX C (continued)

March 15, 1995

Sharron E. Howarth
3506 Stonegate Rd.
Kalamazoo, MI 49004

Dear Sharron:

I enjoyed our conversation this past weekend and I hope this information is useful to you in your research study. I have no problems with you using the instruments or replicating any or all of my study concerning medication compliance of the psychiatric patient. I would appreciate a copy of your results when you have completed your study.

Best of luck to you and if I can be of any further assistance please let me know. Enclosed are copies of my instruments utilized for my study.

Sincerely,

A black rectangular redaction box covering the signature of Victoria Lund.

Victoria Lund, ARNP, MSN, CNA, CS
Doctoral Candidate

APPENDIX D.

Script for Treatment Team Meeting

Researcher: My name is Sharron Howarth. I am a graduate student in nursing at Grand Valley State University. I am conducting a study to assess specific reasons that contribute to medication nonadherence given by schizophrenic clients and their primary nurses. I will need 20 clients and 20 primary registered nurses as subjects for the study. Data will be collected by a 20 minute structured, face-to-face individual interview with me.

Criteria for client subjects include having at least one previous admission in the past six months, in addition to the current admission related to medication nonadherence. Clients must also have medical record documentation of medication nonadherence as assessed by the client, nurse, or physician. Clients must be cooperative and willing to volunteer for study participation.

Nurse subjects have to be a primary nurse of a client subject and have a minimum of one year psychiatric nursing experience. Please identify nurses and clients that meet study eligibility that you feel would consent to study participation. Thank you.

APPENDIX E.

Information and Informed Client Consent for Study Participation

The purpose of this study is to explore how schizophrenic clients take their prescribed medication. This study may have no direct benefit for me, but may aid other schizophrenic clients by helping mental health professionals learn what will help people take medication as prescribed. No medication or invasive procedures are involved in collection of information for this study. Information for this study will be collected by participant face-to-face individual interview and medical record review. As a participant, I give my permission for this researcher to gather and use data from my record which includes: reason for this admission and previous admissions, age, gender, prescription drug use history, and mental illness and diagnosis. I also give the researcher permission to speak with my primary nurse about how I take my prescribed medication.

I have also been assured that my personal identity will not be revealed and will remain confidential in reports or other releases of the results of this study. I understand a potential risk factor, as a participant in this study may be the minor inconvenience of the time required for the interview. I have been assured by the researcher that measures will be taken to limit my inconvenience and that interview time will not exceed 20 minutes at a given time. I understand that information received from me and my records will only be used for the purposes of this study. I understand that numbers will be used as a coding system to maintain the data collected. I have been assured that my name and hospital number will not be used.

In giving my consent, I understand that my participation in this study is voluntary, and that I may withdraw at any time without effect on my care. I also understand that the investigator in charge of this study, with my welfare as a basis, may decide at any time that

APPENDIX E. (continued)

I should no longer participate in this study. I understand that there may be no direct benefit to me as a participant in this study. I have been given the opportunity to ask questions, and all have been answered to my satisfaction.

I understand that if I have questions or concerns regarding this study, I may contact the principal researcher, Sharron E. Howarth, RN at (616) 344-9566 or the chairperson of the Human Subjects Committee Paul Huizenga at Grand Valley State University at (616) 895-3558. I hereby give my consent to participate in this study, conducted by Sharron Howarth, RN, graduate nursing student at Grand Valley State University.

Participant Signature

Date

Witness Signature

Date

APPENDIX F.

Information and Informed Nurse Consent for Study Participation

The purpose of this study is to explore factors identified by the schizophrenic client and the client's primary nurse that may contribute to medication nonadherence. No medication or invasive procedures are involved in the collection of data for this study. Information will be collected by participant face-to-face, individual interview. As a participant in this study, I will not be asked for permission to review data from my employee records.

I have been assured that my personal identity will not be revealed and will remain confidential in reports or other releases of the results of this study. I understand that a potential risk factor to me as a participant in this study may be the inconvenience of the time required for the interview. I have been assured by the investigator that measures will be taken to maintain my confidentiality in that the information received from me will only be used for the purposes of this study and that numbers will be used to code and maintain the data. I have been assured that my name and employee number will not be used. In giving consent, I understand that my participation is voluntary, and that I may withdraw at any time without effect on my employment status.

I understand that if I have questions or concerns regarding this study, I may contact the principal researcher, Sharron E. Howarth, RN at (616) 344-9566 or the chairperson of the Human Subjects Committee Paul Huizenga at Grand Valley State University at (616) 895-3558.

I understand that there may be no direct benefit to me as a participant in this study. I have been given the opportunity to ask questions, and all have been answered to my satisfaction.

APPENDIX F (continued)

I hereby give my consent to participate in this study conducted by Sharron Howarth, RN.
graduate nursing student at Grand Valley State University.

Participant Signature

Date

Witness Signature

Date

APPENDIX G

TABLE 5

PAIR	GENDER (Client/Nurse)	AGREEMENT OF RESPONSES FOR NURSE-CLIENT PAIRS			AGREEMENT OF FOLLOWING PRESCRIBED REGIMEN	AGREEMENT OF REASON FOR NON- ADHERENCE
		NURSE- CLIENT	CLIENT- RECORD	NURSE- RECORD		
#1	Male/Female	Yes	Yes	Yes	No	Yes
#2	Male/Female	Yes	Yes	Yes	No	No
#3	Male/Male	Yes	Yes	Yes	Yes	Yes
#4	Male/Male	No	No	Yes	No	No
#5	Male/Female	Yes	Yes	Yes	No	Yes
#6	Male/Male	No	No	Yes	No	No
#7	Male/Female	Yes	Yes	Yes	No	No

APPENDIX G (cont.)

PAIR	GENDER (Client/Nurse)	AGREEMENT OF RESPONSES FOR NURSE-CLIENT PAIRS			AGREEMENT OF FOLLOWING PRESCRIBED REGIMEN	AGREEMENT OF REASON FOR NON- ADHERENCE
		NURSE- CLIENT	CLIENT- RECORD	NURSE- RECORD		
#8	Male/Male	Yes	Yes	Yes	Yes	Yes
#9	Male/Male	Yes	Yes	Yes	No	No
#10	Male/Male	Yes	Yes	Yes	Yes	Yes
#11	Female/Female	Yes	Yes	No	No	No
#12	Female/Female	Yes	Yes	Yes	No	No
#13	Female/Female	Yes	Yes	No	No	No
#14	Male/Female	Yes	Yes	Yes	No	No
#15	Male/Female	Yes	Yes	Yes	No	No
#16	Male/Female	Yes	No	Yes	No	No
#17	Male/Female	Yes	Yes	Yes	No	No

APPENDIX G (cont.)

PAIR	GENDER (Client/Nurse)	AGREEMENT OF RESPONSES FOR NURSE-CLIENT PAIRS			AGREEMENT OF FOLLOWING PRESCRIBED REGIMEN	AGREEMENT OF REASON FOR NON- ADHERENCE
		NURSE- CLIENT	CLIENT- RECORD	NURSE- RECORD		
#18	Male/Female	Yes	Yes	Yes	No	No
#19	Male/Female	Yes	Yes	Yes	No	No
#20	Male/Female	No	Yes	No	No	Yes
# of Agree- ments	9	17	17	17	3	6
Percent	45%	85%	85%	85%	15%	30%

LIST OF REFERENCES

LIST OF REFERENCES

- Agars, J., & McMurray, A. (1993). A self-evaluation of comparative strategies for teaching breast self-examination. Journal of Advanced Nursing, 18, 1595-1603.
- Cameron, K., & Gregor, F. (1987). Chronic illness and compliance. Journal of Advanced Nursing, 12, 671-676.
- Champion, V., & Scott, C. (1993). Effects of a procedural/belief intervention on breast self-examination performance. Research in Nursing and Health, 16, 163-169.
- Davidhizar, R. (1985). Can clients with schizophrenia describe feelings and beliefs about taking medication? Journal of Advanced Nursing, 10, 469-473.
- De Luca, A., Pittman, D., Guitierrez, J., & Farcone, S. (1988). Neuroleptic reduction helps prevent relapse. Journal of Psychosocial Nursing, 26 (8), 13-15.
- Evans, N. (1992). Factors associated with chronically mentally ill patients' attendance patterns in a psychiatric partial hospitalization program. Dissertation Abstracts International, 53 (6B), 2784. (University Microfilm No. 9221885)
- Forchuk, C., & Brown, B. (1989). Establishing a nurse-client relationship. Journal of Psychosocial Nursing, 27 (2), 30-34.
- Janz, N., & Becker, M. (1984). The health belief model: A decade later. Health Education Quarterly, 11, 1-47.
- Kelly, G., Mamon, J., & Scott, J. (1987). Utility of the health belief model in examining medication compliance among psychiatric outpatients. Social Science and Medicine, 25, 1205-1211.
- Lund, V., & Frank, D. (1991). Helping the medicine go down. Journal of Psychosocial Nursing, 29 (7), 6-9.

Mikhail, B. (1981). The health belief model: A review and critical evaluation of the model, research, and practices. Advances in Nursing Science, 4, 65-80.

Mulaik, J. (1992). Noncompliance with medication regimens in severely and persistently mentally ill schizophrenic patients. Issues in Mental Health Nursing, 13, 219-237.

Peplau, H. (1952). Interpersonal relations in nursing. New York: G.P. Putman & Sons.

Redecker, N. (1988). Health beliefs in chronic illness. Image, 20, 31-45.

Ryan, P., & Falco, S. (1985). A pilot study to validate the etiologies and defining characteristics of the nursing diagnosis of noncompliance. Nursing Clinics of North America, 20, 685-695.

Schwab, T., Meyer, J., & Merrill, R. (1994). Measures, attitudes, and beliefs among Mexican-Americans. Diabetes Education, 20, 221-227.

Schwartz, I., Vingiano, W., & Perez, C. (1988). Autonomy and the right to refuse treatment: Patient attitudes after involuntary medication. Hospital and Community Psychiatry, 39, 1049-1053.

Sulliger, N. (1988). Relapse. Journal of Psychosocial Nursing, 26 (6), 20-23.

Ward-Griffin, C., & Brawell, L. (1990). The congruence of elderly clients and nurse perceptions of the clients' self-care agency. Journal of Advanced Nursing, 15, 1070-1079.