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Base-line equivalence in three paired groups prior to the implementation of primary nursing

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BASE-LINE EQUIVALENCE IN THREE PAIRED GROUPS PRIOR TO THE IMPLEMENTATION OF PRIMARY NURSING

by

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Abstract

Title: Base-line Equivalence in Three Paired Groups Prior to the Implementation of Primary Nursing.

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Primary nursing, one of the methods advocated for assigning nurses to care for patients, has been the subject of much investigation. The value of this system remains unclear. A review of the literature indicated a lack of consensus with positive, equivocal, and negative findings. This study formed phase one of a collaborative Project which measures the effects of the implementation of primary nursing over a two year period. This portion of the Project studied the base-line data of three paired nursing units, to determine whether there was evidence of base-line equivalence of the study and control groups, as determined by nurse job satisfaction and attitudes to the work environment. Nurse job satisfaction was measured using the Minnesota Satisfaction Questionnaire (MSQ) and attitudes to the work environment by the Moos Work Environment Scale (MWES). The study was conducted at an acute-care medical surgical hospital in the Perth metropolitan area. A total of 127 questionnaires were administered. A modified version of Dillman's Total Design Method was employed to maximise the response rate which was elevated from 57% to 86% through the application of this technique. Comparison of the pre-test scores revealed a significant difference in the surgical units on the intrinsic and general satisfaction scales of the MSQ, and the autonomy scale of the MWES. No significant differences were found in the remaining two units on any of the scales. The effects of selected demographic variables on nurse satisfaction and attitudes to the work environment were also studied. The finding of lack of equivalence in the surgical units will need to be taken into consideration in further analysis for the remaining two phases of the Project.

I certify that this thesis does not incorporate, without acknowledgements, any material previously submitted for a degree or diploma in any institution of higher education and that, to the best of my knowledge and belief, it does not contain any material previously published or written by another person except where due reference is made in the text.

Julien Harris

October 1990

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Introduction

One of the goals of nursing is to facilitate effective and efficient health care to the consumer. In order to accomplish this goal an appropriate system for the delivery of nursing care is required (Watts and O'Leary, 1980). When endeavouring to assess the impact of nursing systems on patient outcomes, it is imperative that evaluation is objective and systematic.

Over the years, a number of different methods for assigning nurses to care for patients have been advocated. Primary nursing is a system of delivering nursing care which was introduced to overcome a number of difficulties experienced in the more traditional systems. In these systems, care was thought to be fragmented, communication channels were complex, and it was difficult to assign accountability due to shared responsibility. However, primary nursing can only be inferred to be superior to others if rigorous nursing studies show that it improves the quality of care, or increases patient or nurse satisfaction.

This descriptive research has been carried out collaboratively with members from the study hospital and constitutes a portion of a project with pre- and post-test control group comparisons, where the effects of the implementation of primary nursing are to be evaluated over a two year interval. This section of the project reports the findings of the initial evaluation of the nursing population to determine base-line equivalence of the study and control groups.

Throughout the remainder of this work the term study refers to the initial collection of data reported here, whereas, the term Project refers to the Primary Nursing Project which incorporates the implementation of primary nursing and the collection of data to evaluate its effects over a two year period.

2.0 Research Question

Does the base-line data give evidence of equivalence of the study and control groups as determined by nurse job satisfaction and attitudes to the work environment?

2.1 Questions for Study

Are the nurse job satisfaction levels of the study and control groups at the start of the Project equivalent?

Are the attitudes to the work environment of the study and control groups at the start of the Project equivalent?

3.0 Definition of Terms

Primary nursing - a patient-centred practice with one registered nurse providing continuous, coordinated, and individualised nursing intervention. The primary nurse is responsible for the assessment, planning, and evaluation of patient care from admission to discharge. The primary nurse also implements the care whenever possible.

Patient allocation - a process where nurses are allocated patients on a shift by shift basis. The care-giver's skills and attributes are matched with the patient's needs and work demands. The nurse is responsible for the assessment, planning, implementation, and evaluation of patient care for the designated shift only.

Unit separations - this includes voluntary separation from the study wards by either transfer or resignation, and requests for transfer.

4.0 Purpose of the Project

The purpose of the Project is to study the effects of the implementation of a new modality of nursing care. Referring to the quality of nursing care, Pearson (1989) stated "High quality nursing care is the right of all patients, and is the responsibility of nurses who give it" (p. 269). The change to primary nursing as a means of delivering nursing interventions has occurred as an attempt to improve the quality of nursing care.

Primary nursing represents a change in nursing practice. Even though this system has been in existence for some time, it is essential that the nursing profession establish through research-based findings that it is clearly a system worth pursuing. The ultimate goal is to identify an effective method of delivering nursing care, to enable nursing practice of the future to be grounded on a scientific foundation, and demonstrate to the health care system nursing's unique contribution and impact on the quality of patient outcomes (Bloch, 1975 and Steckel et al., 1980).

5.0 Objectives of the Study

The objectives of the study are:

1. to measure nurse attitudes to the work environment and levels of nurse job satisfaction at the outset of the Project.

2. to estimate equivalence of the study and control groups in respect of attitudes to the work environment and nurse job satisfaction.

3. to study the effects of selected demographic variables on the dependent variables of nurse satisfaction and attitudes to the work environment.

6.0 Review of Literature

6.1 Primary Nursing

Nursing assignment patterns such as functional, team, patient allocation, and primary nursing have received a great deal of attention over the last three decades. Much emphasis has been placed on identifying the expressed advantages and weaknesses of each system in an effort to determine the most effective means of administering nursing intervention.

The literature credits the origin of primary nursing to Marie Manthey and the nursing services department of the University of Minnesota Hospitals in the 1960-70's (Bailey and Mayer, 1980; Bowers, 1989; Hunt, 1988; Reed, 1988; Sellick, Russel and Beckman, 1983). The need for this system was identified when, "dissatisfaction among nurses, patients, doctors,

administrators, and funding agencies was rife, care was fragmented, channels of communication were complex, and shared responsibility led to lack of accountability" (Hunt, 1988, p. 36).

6.2 Research in Primary Nursing

The primary nursing system was developed as an attempt at solving these existing problems and improving the standard of nursing care delivered. Since its inception, a plethora of articles, books, and reports have been written on the effects of primary nursing. The majority of articles are descriptive or anecdotal and not based on sound quantitative data which have been derived from research studies with adequate controls, objective measurement of variables, and appropriate statistical analysis (Sellick et al., 1983).

In a paper published in 1981, Young, Giovannetti, Lewison, and Thoms (cited in Giovannetti, 1986) reviewed over 150 articles and reports on primary nursing. It was found that 80% of this literature was nonresearched-based and yet it reinforced primary nursing. The remaining literature also supported primary nursing but analysis revealed serious methodological flaws in the studies.

Following this failure to identify research-based reasons for the high profile of primary nursing, Giovannetti conducted a further review of the literature in 1986. For inclusion in her study the following criteria had to be met: "(a) be an evaluation study citing primary nursing as an independent variable, (b) be systematic, (c) include information on the methods and

procedures for data collection, (d) present findings, and (e) be written or translated into English" (Giovannetti, 1986, p. 128). Following a comprehensive search, several hundred articles were identified. Only 29 of these met the criteria for inclusion in the study.

Giovannetti reported that studies have measured perceptual outcomes, quality of care outcomes, and multiple outcomes, and that findings have been positive, negative, and nonsignificant. Methodological issues were identified by Giovannetti in a number of the studies. It was found that none of the investigators provided operational definitions of either primary nursing or other organizational modes studied. Furthermore, the information on the statistical tests used to test hypotheses and the level of significance were more often than not omitted. Reliability and validity assessment of the instruments used in the majority of studies was a serious concern. "...the investigators did not provide any evidence to suggest that the measurement instruments of procedures were reliable or valid" (Giovannetti, 1986, pp. 131-2).

Studies measuring perceptual outcomes of patients and nurses by Blair, Sparger, Walts, and Thompson, (1982); Carlsen and Malley, (1981); Daeffler, (1975); Marram, Schlegel, and Bevis, (cited in Giovannetti, 1986); Sellick et al., (1983) claimed significant findings but were discredited to a large extent because of their failure to report reliability and validity testing of the instruments used. The study by Blair et al. was also criticised for the lack of equivalency of the units at the pre-test stage, lack of comparability of the

study units, the small sample, and the short period elapsed between the pre-test and post-test measures of three weeks.

Alexander, Weisman, and Chase, (1981); Cassata, (cited in Giovannetti, 1986); Joiner, Johnson, and Corkrean, (1981); Mills, (cited in Giovannetti, 1986); Parasuraman, Drake, and Zammuto, (1982) and Ventura, Fox, Corley, and Mercurio, (1982) also measured perceptual outcomes. These studies reported equivocal and nonsignificant findings. However, once again, Giovannetti found methodological problems which confounded interpretation of results.

Three studies by Felton (1975), Eichhorn and Frevert (1979), and Steckel et al. (1980) measured quality of care outcomes. All indicated findings that primary nursing improved the quality of nursing care. Felton reported reliability and validity of the instruments used and the validity of the conclusions were considered to be strong. However, it was found that there was a lack of comparability of the nursing groups (Giovannetti, 1986). Methodological problems were once again evident in the other two studies detracting from the significance of the findings. In contrast, a sound study by Hamera and O'Connell (1981) found that primary nursing did not improve the quality of care experienced by patients.

A number of studies measured multiple outcomes along with perceptual outcomes and quality of care. Hegedus (1980) and Marram (1976) presented findings in favour of primary nursing, while Betz, Dickerson, and Wyatt (1981); Chavigny and Lewis (1984); Collins (cited in

Giovannetti, 1986); Giovannetti (1980); Shukla (1981); Shukla and Turner (1984), and Young, Giovannetti, and Lewison (cited in Giovannetti, 1986) reported nonsignificant findings and findings that were not in favour of primary nursing. Limitations of these studies described by Giovannetti included: the failure to discuss reliability and validity of instruments, small sample sizes, and undisclosed significance of tests and correlation techniques.

A review of research conducted since the study by Giovannetti found continuing methodological problems. Problems evident in studies conducted by Blenkarn, D'Amico, and Virtue (1988), and Reed (1988) included: failure to report reliability and validity figures of instruments, selection of small samples of unequal sizes, and research designs that did not allow for pre-test and post-test comparisons, weakening the conclusion that the differences were caused by the introduction of the independent variable of primary nursing.

6.3 Recommendations

A comprehensive review of the literature indicated a lack of consensus with positive, equivocal, and negative findings of the impact of primary nursing on selected outcomes. The inconsistencies in the reports in the literature and the lack of empirical research showing objective and quantitative evidence of the effects of primary nursing provided support for further rigorous research.

The following recommendations to improve the research design and method were derived from the literature review (Giovannetti, 1986; Hunt, 1988; Reed, 1988, and Sellick et al, 1983)

1. The strength of the research design is improved through the use of an experimental design including:

- Pre- and post-test measurement of the dependent variables.
- Random allocation of the independent variable.
- Comparable experimental and control units.
- Comparability of nurse and patient groups.
- Evidence of the equivalence of groups through evaluation of the pre-test measurements.

2. Evidence of reliability and validity of instruments.

3. Reports of statistical tests and levels of significance.

4. Identification of the independent and dependent variables.

5. Adequate passage of time before post-tests are conducted to allow for 'settling in' problems.

The present study considered these recommendations in the planning of the research design and method so that; (a) results could be attributed to the change in the modality of care, (b) the effects of influencing variables would

be controlled, and (c) quantitative evidence on the effects of the implementation of primary nursing would be provided. The reported findings in the literature indicated that results could be nonsignificant. Should this eventuate, administration will have the opportunity to implement the system of preference and objective evidence provided through the research will support this decision.

7.0 Conceptual Framework

Three dimensions for evaluating patient care proposed by Donabedian in 1966, (cited in Bloch, 1975 and Hegedus, 1980) are structure, process, and outcome. Structure is defined by Hegedus as, "the setting in which care is given or the factors within the delivery system itself" (p. 85). Structure may include staffing patterns, styles of supervision, characteristics of the care givers, and the physical environment (Bloch, 1975). Structure was identified in this study as the nursing care delivery system. Nursing unit structure is primary nursing in the study units and patient allocation in the control units.

The process dimension involves the activities of the caregiver, what is actually done, and includes both visible and invisible behaviours. The ten components of primary nursing proposed by Watts and O'Leary (1980) were incorporated as the process dimensions. Called the five A's and five C's, the ten components are; accountability, advocacy, assertiveness, authority, autonomy, collaboration, continuity, communication, commitment, and coordination. Watts' and O'Leary's review of the literature found that one

or more of these components were identified in the majority of works as characteristic of primary nursing.

The study of the outcomes of nursing intervention is the final dimension. For the purpose of this study the outcomes to be measured are nursing status along with patient status in the collaborative Project. Outcome measures are identified as the dependent variables of the Project: quality of care, patient satisfaction, unit separations, agency nurse usage, and absenteeism. The outcome measures for the study are nurse job satisfaction and nurse attitudes to the work environment. See Figure 1.

Munson and Clinton (1979) identified influencing factors as patient characteristics, nursing resources, and organizational support. These factors were included in the conceptual framework as possible influencing variables. It was anticipated that their influence would be randomly distributed throughout the study wards.

There is some debate as to whether evaluation should be process-focused or outcome-focused. Bloch (1975) advocates that "evaluation that encompasses both process and outcome has the potential for great impact on the quality of care ... and should be the ultimate goal of patient care... because it allows examination of how the actions of providers relate to changes in the recipient of care" (p. 258.) Evaluation of the implementation of primary nursing will be outcome-focused. The process dimensions are indirectly measured through the outcome measures.

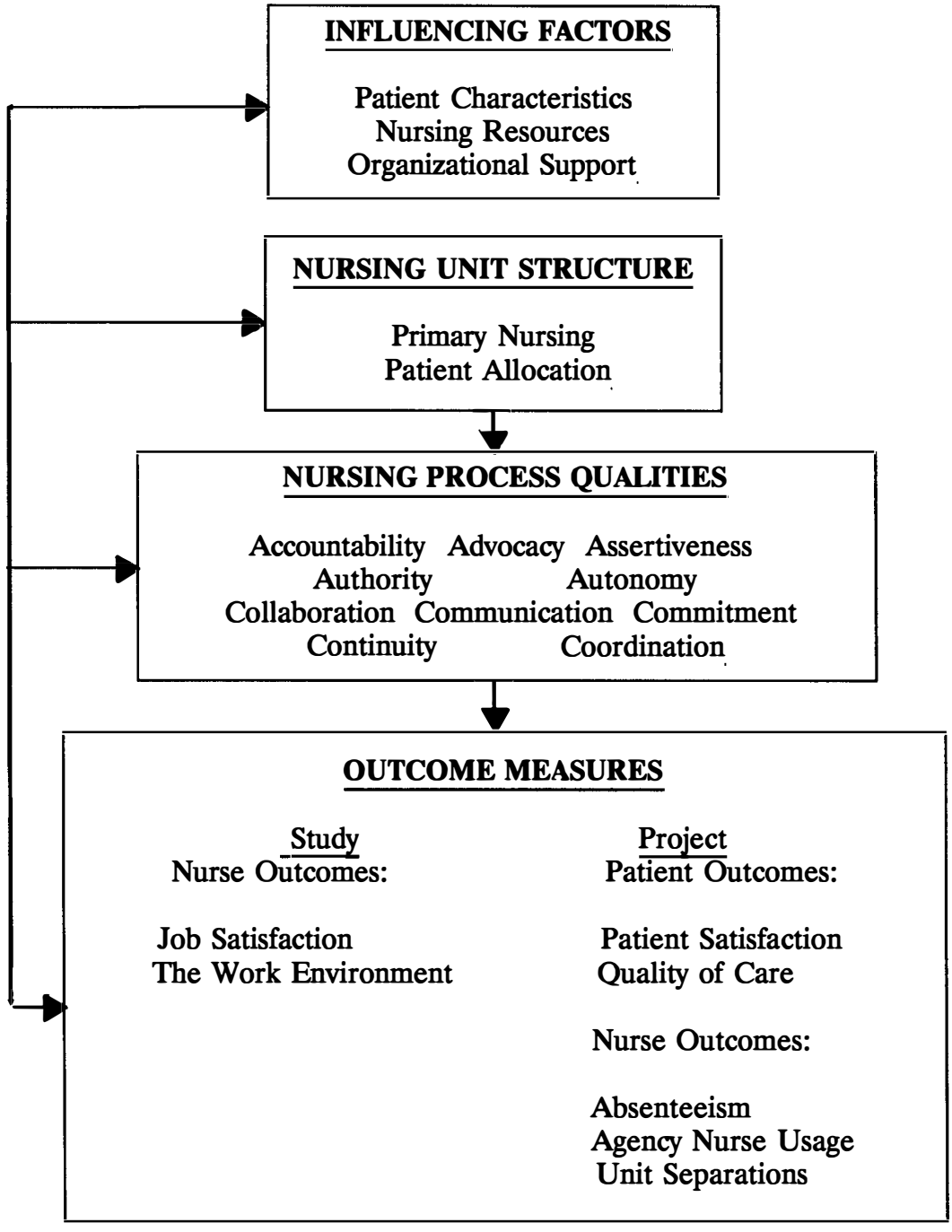

FIGURE 1. Conceptual framework indicating factors influencing and influenced by nursing delivery systems (adapted from Munson and Clinton, 1979).

The conceptual framework illustrates how the linking of structure, process and outcome can be used to evaluate the impact of a delivery system on patient care and care givers. Bloch (1975) states, "in efforts at improvement of the quality of care, it is not the outcomes that can be manipulated; rather, it is the professional practice which must be changed in the hope and with the expectation that outcomes will change as a result" (p. 262). By manipulating the structure of the delivery system and measuring selected outcome variables it will be possible to determine effects of the introduction of primary nursing.

8.0 Method

8.1 Design

The Project incorporates a cohort design with pre-test and post-test control group comparisons. A delimitation of the collaborative study is the failure to randomise the independent variable of primary nursing. Owing to a number of changes already in progress in one of the speciality wards it was thought to be imprudent to introduce an additional change.

A comparative design was utilised for the study prior to the introduction of the independent variable. The dependent variables were measured and comparison of these pre-test scores was carried out to evaluate equivalence of the groups. Post measurements are to be conducted for the Project at twelve months and two years following the implementation of primary nursing. At one year it will be possible to measure how changes

have affected the outcomes, and at two years it will be possible to estimate if change is on-going, or if it has been stabilised. See Figure 2.

8.2 Setting

The study was conducted at a Western Australian acute-care medical-surgical hospital in the metropolitan area. Seven wards that do not practise primary nursing were selected for the study. The wards were selected to provide the opportunity to match wards into three paired units; surgical, medical, and speciality. The paired wards are similar in size, patient population, and composition of nursing staff. At the conclusion of the initial data collection period, one ward of each pair will be allocated to primary nursing (study unit), the other will maintain the present system (control unit).

8.3 Population for Study

All permanent registered nurses at levels one and two, including nightstaff, working on the selected wards were asked to participate in the study. The population was 127 nurses. Registered nurses above level two, and agency and pool staff, were not asked to participate in the study.

8.4 Ethical Considerations

Prior to commencement, approval was granted by the institutional ethics committees of the Western Australian College of Advanced Education and the study hospital. Participation in the study was voluntary and subjects were free to withdraw their consent at any stage. Subjects were informed of the purpose of the study and a telephone number was made available should

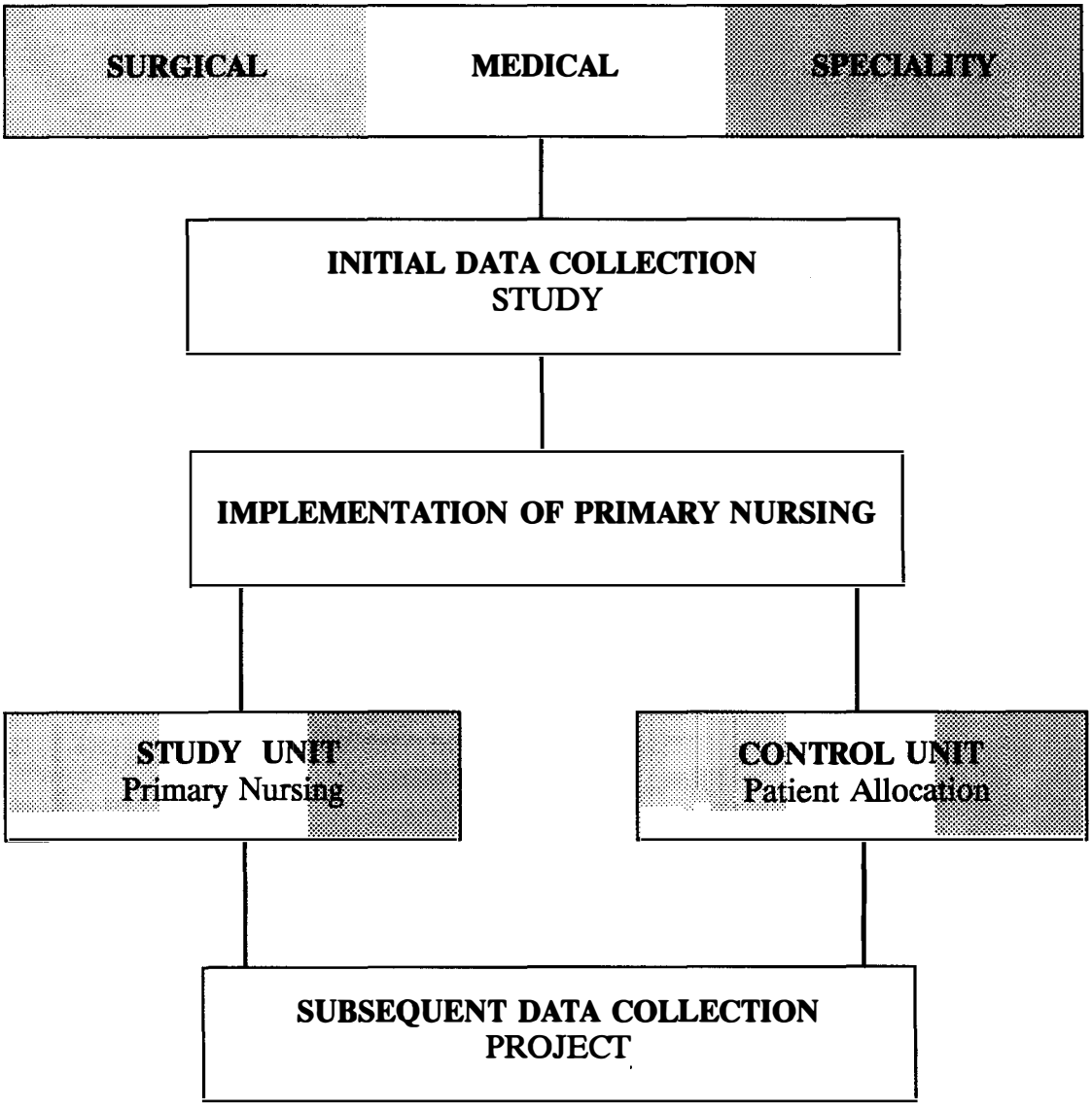

FIGURE 2. Study and Project Design.

they have required any further information or wished to withdraw their response.

Nurse subjects were tagged to allow for comparison at the second and third data collections. The tag numbers are known to the researcher only and were kept separate from the data sheets at all times. Confidentiality of nurse data will be maintained as the published results will relate to the data analysis of the groups as a whole and not to any individual's information.

Findings will be disseminated to both the study and control groups promptly at the completion of the two-year Project. Should the outcomes be favourable in respect to primary nursing, in return for their participation, the control wards will be given the option of changing to primary nursing as a method of giving nursing care before other wards.

There were no direct benefits identified for the nurse participants. However, it was anticipated that the findings may benefit other nurses through the improved knowledge of the effects of primary nursing. It was evident that the potential benefits of the study outweighed any potential risks, the only risk being a remote error in safeguarding the list of tag numbers for confidentiality of nurses' identities.

8.5 Instrumentation

The measurement tools chosen to measure the outcome variables are linked with the underlying conceptual changes introduced by the implementation of primary nursing and yield quantitative data. Copyright for use of the instruments used in both the study and Project was purchased

from the respective authors.

The independent variable is the implementation of primary nursing. Two dependent variables of nurse satisfaction and attitudes to the work environment were measured in the study. A further six dependent variables have been measured collaboratively for the Project by the study hospital. They are; patient satisfaction, quality of patient care, absenteeism, agency nurse usage, and unit separations.

8.51 Nurse Satisfaction

The Minnesota Satisfaction Questionnaire (Weiss, Dawis, England, and Lofquist, 1967) is designed to measure job satisfaction. The short-form Minnesota Satisfaction Questionnaire (MSQ) is composed of 20 questions and consists of three scales: Intrinsic Satisfaction, Extrinsic Satisfaction, and General Satisfaction. The authors claim to have conducted studies which provide evidence of construct validity for the instrument and demonstrate that the MSQ is able to differentiate among occupational groups. Median internal consistency coefficients range from .80 to .90. Stability for the short-form may be inferred from the general satisfaction scale of the long-form since both scales use the same 20 items. Test-retest correlation coefficients range from .70 over a one year interval to .89 over a one week period. (Weiss, et al.)

Reliability testing of the MSQ was conducted using Cronbach's alpha coefficient. The degree of validity for the MSQ in measuring job satisfaction of the nurses in this study was determined through the use of an additional

question. The question was directed at obtaining an overall level of job satisfaction which was marked on a visual analogue scale. The scores for the MSQ and the visual analogue were then compared to determine the degree of correlation, the convergence of findings indicating validity of the MSQ.

8.52 Attitudes to the Work Environment

The Moos Work Environment Scale, developed in 1981 by Rudolf H. Moos, has three forms. The Real Form (Form R), which measures perceptions of the existing work environment was used to measure nurse attitudes to the work environment. It comprises ten subscales and 90 statements measuring three dimensions of the social environment. The personal growth dimensions were selected for analysis for the study. These dimensions study the ways in which an environment encourages or stifles personal growth and are measured by the subscales of autonomy, task orientation, and work pressure. The remaining two dimensions and seven subscales are to be analysed by the hospital.

Internal consistencies for the ten scales of Form R, using Cronbach's Alpha, range from .69 to .86. Test-retest reliabilities are all in an acceptable range, varying from .69 to .83. Profiles for Form R appear to be stable with a mean 12 month profile stability of .61 (Moos, 1981). The scores obtained for the subjects in the study were compared with the normative data available from studies conducted by the instrument's author. Reliability testing of the Moos Work Environment Scale was conducted using Cronbach's alpha coefficient.

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8.53 Demographics

Demographic data collected from the nurses included: sex, age, years of experience, level within the career structure, length of employment with the hospital, and educational background. These data were used to analyse the effects of these variables on the dependent variables studied.

8.6 Data Collection Procedure

Three weeks prior to the administration of the questionnaire, a pilot study of eleven nurses was conducted on a unit not included in the study sample. The pilot test was performed to determine the clarity of the questions and instructions, establish the time required to complete the questionnaire, and refine data collection techniques. The pilot study did not reveal any problems with either the questionnaire or the data collection process. Respondents estimated that 20 - 30 minutes would be required to complete the questionnaire. The response rate in the pilot study was 82% and it was anticipated that this would be replicated in the study proper.

The questionnaire consisted of; an explanation of the study, directions for completing the questionnaire, demographic section, questions related to the the Minnesota Satisfaction Questionnaire (Short form) and the Moos Work Environment Scale. (see Appendix A). An addressed envelope was included to assist in the return of the questionnaire through the internal mailing system.

A current staff roster for the seven wards was obtained and all registered nurses that appeared on the list and met the requirements for

admission to the Project were asked to complete the questionnaire. One hundred and twenty seven questionnaires were administered to the control and study wards over a two week period.

A modified version of Dillman's Total Design Method (Crosby, Ventura, and Feldman, 1989) was employed to maximise the response rate. At three and a half weeks 73 responses had been received (57.5%). Fifty four reminders were sent (see Appendix B), which increased the response rate to 94 returns (74%) at five weeks. A further 26 reminder notices and replacement questionnaires were delivered and at the completion of the data collection period of seven weeks, 109 (86%) of the questionnaires had been returned. (see Appendix C)

Absenteeism, agency nurse usage, and unit separations were recorded by the hospital at this time, and a patient quality assurance audit using the Rush-Medicus system (Jelinek, Haussman, Hegyvary, and Newman, 1975) was performed. Satisfaction of patients at discharge was measured using Sellick's satisfaction questionnaire (Sellick et al, 1983), which was nominated and carried out by the study hospital.

The nurse questionnaire is to be re-administered for the Project following the implementation of primary nursing at twelve months and two years. Absenteeism, agency nurse usage, and unit data will be recorded, the quality assurance audit will be repeated, and patient satisfaction will be measured.

9.0 Results

9.1 Data Analysis

Data were entered into Dbase 3 (Ashton-Tate, California) and exported to SPSS/PC+ (SPSS Inc., Chicago) for analysis. Analysis of the initial data involved comparison of scores between the wards of the paired units to determine base-line equivalence. Mean raw scale scores were compared using a two-tailed student t-test with significance being defined as a probability of a type I error of less than 5%. Analysis of the subsequent data for the Project will compare difference scores derived from the pre- and post-scores of the study and control units.

Reliability testing of the Minnesota Job Satisfaction Questionnaire and the Moos Work Environment Scale was conducted using Cronbach's alpha reliability coefficient. The validity of the Minnesota Job Satisfaction Questionnaire was estimated by correlating measures of the General Satisfaction Scale with the measurements on the visual analogue and included declaration of the 95% confidence intervals.

9.2 Results of the Study

A total of 127 nurses were asked to participate in the Study. One hundred and nine responses were received, a response rate of 86%. One response was entirely blank, two failed to include all of the demographic details, and one did not respond correctly to the Moos work environment

section of the questionnaire. It was decided to remove the area managers and staff development nurses (n=8) from the analysis of base-line equivalence as they cover more than one study unit.

9.21 Reliability and Validity

Cronbach's alpha for each of the scales is presented in Table 1. In general the reliability coefficients obtained were slightly lower than those reported in the literature by the authors of the instruments, which may result from the smaller sample sizes in this study.

Table 1

Cronbach's Alpha for the Minnesota Satisfaction Questionnaire (MSQ) and the Selected Moos Work Environment Scales

	Cronbach's Alpha	
	Study	Reported by authors
Minnesota Satisfaction Questionnaire		
Intrinsic	0.81	0.86
Extrinsic	0.78	0.80
General	0.86	0.90
Selected Moos Work Environment Scales		
Autonomy	0.53	0.73
Task orientation	0.63	0.76
Work pressure	0.75	0.80

Construct validity for the MSQ was assessed through correlation of the General Satisfaction Scale with the visual analogue scale for convergent validity. The Pearson Product Moment Correlation Coefficient revealed a

high positive relationship between the General Satisfaction Scale and the visual analogue scale, $r(99) = .7449$, $p < .001$ (Munson, Vistainer, and Page, 1986). The 95% confidence intervals are between .65 - .82.

The mean scale scores and standard deviations for the selected Moos Work Environment scales of the Study group are compared in Table 2 with those of the normative sample of health care workers provided by the authors of the instrument. The mean scale scores for the task orientation and work pressure scales appear to be higher than those of the normative sample. The Study sample appears to place much greater emphasis on work pressure, which measures the extent to which the pressure of work and time urgency dominate the job milieu, than the normative sample (Moos, 1981).

Table 2

Comparison of Mean Scale Scores and Standard Deviations of the Study Group and the Normative Sample for the Selected Moos Work Environment Scales

	Group	
Scale	Study	Normative Sample
Autonomy		
M	4.8	4.98
SD	1.8	1.22
Task orientation		
M	6.9	5.63
SD	1.8	1.29
Work pressure		
M	7.1	4.87
SD	2.1	1.38

9.22 Demographic and Educational Characteristics

The majority of nurses studied were female (86%), Australian (58%), and 35 years old or younger (72%). Table 3 displays the demographic characteristics of the nurses by study unit.

Table 3

Nurses by Demographic Characteristics and Study Unit

	Unit							
	Medical		Surgical		Speciality		Total	
	S1	C1	S2	C2	S3	C3		
Characteristic	n=20	n=13	n=12	n=11	n=23	n=21	N=100 (%)	
Gender								
Female	19	12	11	11	18	15	86	(86)
Male	1	1	1	0	5	5	13	(13)
NR[a]						1	1	
Age								
<25	9	3	3	5	5	6	31	(31)
26-35	5	6	6	4	10	10	41	(41)
36-45	3	3	1	2	5	2	16	(16)
46	3	1	2	0	3	2	11	(11)
NR						1	1	
Origin								
Aust.	13	8	6	9	12	10	58	(58)
U.K.	5	2	2	1	6	4	20	(20)
Asia	1	2	1	1	3	1	9	(9)
Other	1	1	3	0	2	4	11	(11)
NR						2	2	

[a]NR = No response on this variable.

Table 4 illustrates the educational and clinical experience of the sample of nurses studied. The majority of nurses work full time (81%), received their educational preparation in Australia (76%) and hold a Hospital Diploma (49%). Forty four percent of the nurses hold a position at level 1 and 33% are staff nurses.

The percentage of nurses in the sample with more than 7 years experience was 42%, although the next highest group was the new graduates who comprised 28%. A large portion of the sample (37%) have worked in the hospital for a period less than one year, consistent with the high turnover experienced in the study hospital.

Table 4

Nurses by Educational and Clinical Experience and Study Unit

	Unit						
	Medical		Surgical		Speciality		Total
	S1	C1	S2	C2	S3	C3	
Variable	n=20	n=13	n=12	n=11	n=23	n=21[a]	N=100 (%)
Education							
HD[b]	11	6	8	6	10	8	49 (49)
UD[c]	3	4	1	3	6	5	22 (22)
HD + PB[d]	6	3	3	1	6	5	24 (24)
Other[e]				1	1	1	3 (3)
Country of educational preparation							
Aust.	14	10	11	9	17	15	76 (76)
U.K.	6	2	1	1	4	2	16 (16)
Asia	0	0	0	1	1	1	3 (3)
Other	0	1	0	0	1	1	3 (3)
Length of time worked in hospital							
<1	10	6	4	3	6	8	37 (37)
13mth - 2yr	3	2	2	2	4	4	17 (17)
25mth - 5yr	3	3	5	3	6	3	23 (23)
49mth	4	2	1	3	7	5	22 (22)
Years of experience							
< 1	5	4	4	3	8	4	28 (28)
> 1 < 3	3	4	2	4	2	4	19 (19)
> 3 < 7	4	2	1	1	3	3	14 (14)
> 7	8	3	5	3	10	8	42 (42)
Level in West Aust. career structure							
S/N	8	4	4	4	8	5	33 (33)
1	9	8	5	5	7	10	44 (44)
2	3	1	3	2	8	5	22 (22)

[a] n = 19 for education, country of educational preparation, and years of experience and n = 20 for length of time worked in hospital and level in career structure.
[b] HD = Hospital Diploma
[c] UD = University Diploma
[d] HD + PB = Hospital Diploma and post basic certificate
[e] Other = Combination of degree awards and post basic certificates

9.23 Analysis of Base-line Equivalence

The mean scale scores and standard deviations for the MSQ and the selected Moos Work Environment Scales are presented in Table 5. Comparisons of the mean scale scores between paired study units was conducted using the Student t-test (see Table 6).

In response to the first research question, (are the nurse job satisfaction levels of the study and control groups at the start of the Project equivalent?), there were no statistically significant differences in the mean scale scores for the MSQ scales for either the medical or the speciality groups. In the surgical groups, there was a statistically significant difference for the intrinsic scale, with study group 2 reporting a higher level of intrinsic satisfaction than control group 2 ($t(21) = 2.3$, $p = .03$). Study group 2 also reported a higher level of satisfaction for the general scale ($t(21) = 2.9$, $p = .009$).

Again, in response to the second research question, (are the attitudes to the work environment of the study and control units at the start of the Project equivalent?), there were no statistically significant differences in the mean scale scores for the selected Moos Work Environment Scales for either the medical or speciality groups. In the surgical groups, study group 2 reported a statistically significant higher level of autonomy ($t(13.7) = 2.7$, $p = .019$).

Table 5

Mean Scale Scores and Standard Deviations for the Minnesota Satisfaction Questionnaire (MSQ) and the Selected Moos Work Environment Scales of the Sample of Nurses by Study Unit

	Unit						
	Medical		Surgical		Speciality		Total
	S1	C1	S2	C2	S3	C3	
Scale	n = 20	n = 13	n = 12	n = 11	n = 23[a]	n = 21	N = 100
	Minnesota Satisfaction Questionnaire						
Intrinsic							
M	43.7	45.5	48.3	43.8	44.6	45.0	45.0
SD	7.3	7.3	4.1	5.3	6.2	7.4	6.6
Extrinsic							
M	17.9	19.4	21.1	17.9	18.2	18.5	18.7
SD	5.1	5.1	2.9	4.8	4.4	5.3	4.7
General							
M	67.3	71.8	77.4	67.9	69.5	70.5	70.3
SD	11.3	13.2	5.7	9.7	10.2	11.5	10.8
	Selected Moos Work Environment Scales						
Autonomy							
M	4.3	4.7	5.9	4.0	5.3	4.6	4.8
SD	1.8	2.0	0.9	2.2	1.2	1.8	1.8
Task orientation							
M	7.1	6.9	8.2	7.8	6.8	5.9	6.9
SD	1.1	1.8	1.0	0.7	1.5	2.1	1.8
Work pressure							
M	7.9	6.5	6.8	7.8	7.0	6.7	7.1
SD	1.1	2.5	2.2	1.5	2.0	2.2	2.1

[a] n = 22 for the Moos Work Environment Scale

Table 6

Pooled Student t-Test Comparisons Between Paired Study Units of Nurses' Mean Scale Scores for the Minnesota Satisfaction Questionnaire (MSQ) and the Selected Moos Work Environment Scales

Group[a] Scale	F	p	df	t	p
		Minnesota Satisfaction Questionnaire			
Medical					
Intrinsic	1.02	1.0	31	-0.7	0.49
Extrinsic	1.0	1.0	31	-0.8	0.42
General	1.4	0.5	31	-1.0	0.31
Surgical					
Intrinsic	1.6	0.4	21	2.3	0.03*
Extrinsic	2.7	0.1	21	1.9	0.065
General	2.8	0.1	21	2.9	0.009*
Speciality					
Intrinsic	1.4	0.4	42	-0.2	0.85
Extrinsic	1.5	0.4	42	-0.2	0.84
General	1.3	0.6	42	-0.3	0.77
		Selected Moos Work Environment Scales			
Medical					
Autonomy	1.2	0.6	31	-0.5	0.62
Task orientation	2.7	0.5	31	0.3	0.73
Work pressure	4.8	0.03**	15.3	1.9	0.75
Surgical					
Autonomy	4.8	0.016**	13.7	2.7	0.019*
Task orientation	1.9	0.3	21	1.1	0.27
Work pressure	2.3	0.2	21	-1.2	0.23
Speciality[b]					
Autonomy	2.0	0.1	41	1.4	0.17
Task orientation	2.0	0.1	41	1.5	0.15
Work pressure	1.2	0.7	41	0.5	0.61

[a]Medical n = 33, surgical n = 23, and speciality n = 44
[b]n = 43
*p < .05
**p < .05 separate variances used

9.24 Analysis of Selected Demographic Variables

This section studies the effects of two selected demographic variables on the dependent variables of nurse satisfaction and attitudes to the work environment. The selected variables are educational preparation and level within the Western Australian nursing career structure.

Table 7 displays the mean scale scores and standard deviations for the MSQ and the selected Moos Work Environment scales of the sample of nurses (including the staff development and area managers) by educational preparation and level in the career structure. Three levels of educational preparation were selected: Hospital based Diploma, University Diploma, and a combination of Hospital Diploma and post basic certificate. The numbers in other categories were not sufficient to allow for analysis. Once again, three levels were selected for the analysis of the effects of the level of the nurse within the career structure: Staff nurse, level one and level two.

One-way analysis of variance was used to examine separately the effects of educational preparation and level within the career structure in respect to the mean scale scores. The data were subjected to three tests for homogeneity of variance available in the SPSS/PC+ programme. It was noted on some of the scales that the populations did not appear to have equal variances for one, and sometimes two, of the tests. Even though the variances appeared to be different, one-way analysis of variance was applied as the sample sizes of the groups were similar and the test is not particularly sensitive to violations of variance under such conditions (SPSS/PC+, 1988).

Table 7

Mean Scale Scores and Standard Deviations for the Minnesota Satisfaction Questionnaire (MSQ) and the Selected Moos Work Environment Scales of the Sample of Nurses by Educational Preparation and Level in the W.A. Nursing Career Structure

	Variable					
	Education				Level	
Scale	HD[a] n=50	UD[b] n=22	HD+PB[c] n=29	S/N[d] n=33	1 n=44	2 n=22
	Minnesota Satisfaction Questionnaire					
Intrinsic						
M	45.4	43.1	46.4	45.3	43.0	48.7
SD	5.2	8.2	7.7	6.1	6.9	5.2
Extrinsic						
M	19.1	18.0	18.4	19.2	17.2	20.7
SD	4.3	4.8	5.1	4.3	3.8	6.1
General						
M	71.2	67.8	71.4	71.4	66.6	76.3
SD	8.3	13.8	12.7	10.3	10.1	10.8
	Selected Moos Work Environment Scales					
Autonomy						
M	4.9	4.3	5.3	4.8	4.3	5.7
SD	1.5	2.3	1.8	2.2	1.4	1.5
Task orientation						
M	7.1	6.7	6.4	7.1	6.9	6.4
SD	1.7	1.9	1.8	1.8	1.6	2.1
Work pressure						
M	7.0	6.6	7.3	6.7	7.2	7.1
SD	1.9	2.6	1.7	2.5	1.8	2.0

[a]HD = Hospital Diploma
[b]UD = University Diploma
[c]HD + PB = Hospital Diploma and post basic certificate
[d]S/N = Staff nurse

Table 8 presents a summary of the results of the one-way analyses of variance, with the nurses' scale scores on each instrument used as the dependent variables, and the type of educational preparation serving as the independent variable in each analysis. No statistically significant differences were found between the groups for any of the scale scores on both the MSQ and the selected Moos Work Environment scales when educational preparation was used as the independent variable.

Table 9 presents a summary of the results of the one-way analyses of variance, with the nurses' scale scores on each instrument used as the dependent variables, and their level within the career structure serving as the independent variable in each analysis. The Scheffé test, used for groups of unequal sizes, was used in post-hoc comparisons to identify specific contrasts for those analyses with a significant F value, with $p < .05$.

Significant differences were found on the intrinsic, extrinsic and, general satisfaction scales for the MSQ and, on the autonomy scale for the selected Moos Work Environment Scales. The Scheffé test identified the difference to be significant between the level one and level two nurses on these variables at $p < .05$. It is interesting to note the staff nurses were not significantly different from the level two nurses on these scales. Despite the differences between level one and level two on the MSQ and autonomy scales, the three groups were similar in their levels of task orientation and work pressure.

Table 8

Effects of Educational Preparation on Mean Scale Scores for the Minnesota Satisfaction Questionnaire (MSQ) and the Selected Moos Work Environment Scales of the Sample of Nurses using Analysis of Variance

Scale Group	Source of Variation	df	SS	MS	F	p
		Minnesota Satisfaction Questionnaire				
Intrinsic						
HD[a]	Between	2	143.5	71.7	1.59	.209
UD[b]	Within	98	4425.2	45.1		
HD + PB[c]	Total	100	4568.6			
Extrinsic						
HD	Between	2	21.5	10.8	0.49	.611
UD	Within	98	2129.3	21.7		
HD + PB	Total	100	2150.9			
General						
HD	Between	2	202.4	101.2	0.83	.440
UD	Within	98	11984.8	122.3		
HD + PB	Total	100	12187.2			
		Selected Moos Work Environment Scales				
Autonomy						
HD	Between	2	12.6	6.3	1.88	.158
UD	Within	98	329.4	3.4		
HD + PB	Total	100	342.1			
Task orientation						
HD	Between	2	8.9	4.5	1.41	.248
UD	Within	98	309.2	3.1		
HD + PB	Total	100	318.1			
Work pressure						
HD	Between	2	6.5	3.3	0.77	.465
UD	Within	98	413.4	4.2		
HD + PB	Total	100	420.0			

[a]HD = Hospital Diploma
[b]UD = University Diploma
[c]HD + PB = Hospital Diploma and post basic certificate

Table 9

Effects of Level in the W.A. Nursing Career Structure on Mean Scale Scores for the Minnesota Satisfaction Questionnaire (MSQ) and the Selected Moos Work Environment Scales Using Analysis of Variance

Scale Group	Source of Variation	df	SS	MS	F	Contrasts at $p < .05$
			Minnesota Satisfaction Questionnaire			
Intrinsic						
S/N[a]	Between	2	484.0	242.0	6.1381*	1 with 2
1	Within	96	3784.9	39.4		
2	Total	98	4268.9			
Extrinsic						
S/N	Between	2	196.2	98.1	4.7077*	1 with 2
1	Within	96	2000.4	20.8		
2	Total	98	2196.6			
General						
S/N	Between	2	1448.9	724.4	6.8026*	1 with 2
1	Within	96	10223.4	106.5		
2	Total	98	11672.3			
			Selected Moos Work Environment Scales			
Autonomy						
S/N	Between	2	29.2	14.6	4.7455*	1 with 2
1	Within	96	295.0	3.1		
2	Total	98	324.2			
Task orientation						
S/N	Between	2	6.4	3.2	1.0131	
1	Within	96	305.3	3.2		
2	Total	98	311.8			
Work pressure						
S/N	Between	2	6.0	3.0	0.6639	
1	Within	96	435.8	4.5		
2	Total	98	441.8			

[a]S/N = Staff nurse
*$p < .05$

10.0 Discussion

10.1 Major Findings

This section discusses the findings for phase one of the Primary Nursing Project.

10.11 Base-line Equivalence

In response to the first question for study, (are the nurse job satisfaction levels of the study and control groups at the start of the Project equivalent?), a significant difference was found in the surgical units on the intrinsic and general satisfaction scales. No significant differences were found in the medical and speciality units on any of the scales. The intrinsic scale measures concepts including achievement, ability utilisation, creativity and independence, while the general satisfaction scale consists of a combination of these intrinsic factors and the extrinsic factors which include policies, practises, and job security.

In response to the second question for study, (are the attitudes to the work environment of the study and control units at the start of the Project equivalent?), a significant difference was found in the surgical units on the autonomy scale. No significant difference was found in the medical and speciality units. The autonomy scale measures the extent to which employees are encouraged to be self-sufficient and to make their own decisions, and whether people can use their own initiative to do things (Moos, 1981).

The finding of lack of equivalence in the surgical units on three scales supports the recommendation from the literature to evaluate base-line equivalence through evaluation of the pre-test measurements and establish comparability of the study units so that the research design may be strengthened (Giovannetti, 1986).

The major finding of this study of baseline equivalence is that there is a significant difference between the two surgical units in terms of intrinsic satisfaction, general satisfaction, and autonomy at the start of the Project. The level of extrinsic satisfaction is equivalent in the surgical units and the levels of nurse job satisfaction and attitudes to the work environment are equivalent in the speciality and medical units at the start of the Project.

Discussions with the clinical nursing division of the study hospital revealed a possible reason for the differences in the surgical units. The ward with lower mean scale scores, control two, for the intrinsic and general satisfaction scales, and the autonomy scale appears to be more traditional in its management, with authority being restricted to a small number of individuals. Whereas, on the other ward, study two, authority is distributed among a greater number of individuals.

The distribution of authority may lead to greater ability utilisation, more responsibility, and increased decision making, resulting in higher levels of intrinsic and extrinsic satisfaction and increased autonomy for the nurses. This finding is supported by Blair et al. (1982) who found that there is a

potential for dissatisfaction when nurses do not have the "...opportunity for self-actualisation, responsibility and sense of achievement ..." (p. 181).

10.12 Effects of Selected Demographic Variables

Analysis of the effects of educational preparation on nurse job satisfaction and attitudes to the work environment revealed that there were no significant differences in the mean scales scores of those nurses who held a hospital diploma, a university diploma or those who held a hospital diploma and post basic certificates. This result is of interest to those involved in the debate of tertiary versus hospital training programmes. Management of the study hospital may also like to regard these findings when they consider intakes of staff with different educational backgrounds. It is necessary to bear in mind that the clinical experience of the nurses was not considered in conjunction with their educational preparation. This may confound the conclusions drawn from considering educational preparation as a single factor.

The effects of level within the Western Australian career structure on nurse job satisfaction and attitudes to the work environment revealed that the level one nurses exhibited lower levels of satisfaction on the intrinsic, extrinsic, and general satisfaction scales, and decreased autonomy on the selected work environment scales than the level two and staff nurses. All three levels were similar in their levels of task orientation and work pressure.

The differences in the level of satisfaction and autonomy of the level one nurses may be due to the fluctuating levels of authority they experience.

The co-ordinator role is shared among the level one nurses in the absence of the level two clinical nurses. This allows the level one nurses the opportunity to experience the co-ordinator's role and the chance to accept added responsibility. However, this experience is often only transient, and so frustration may occur due to inconstant levels of ability utilisation, independence, and decision making opportunities, resulting in decreased job satisfaction and lower levels of autonomy (Blair et al., 1982).

The result of the staff nurses perceiving themselves to have a similar level of autonomy as the level two nurses is interesting and may be explained perhaps by them having lower expectations than the level one nurses in terms of ability utilisation and authority; they are not frustrated with the level of responsibility, self-actualisation, and sense of achievement that they are experiencing.

10.13 Reliability and Validity

Evaluation of the instruments used in the study gave evidence of reliability and validity. The Cronbach's alpha reliability coefficients for both instruments were slightly lower than those reported in the literature but as previously stated this may be due to the smaller sample size. A further possible explanation for this was given by the respondents of the study when they indicated confusion with the word "supervisor" which is used in the published scale; this was not revealed in the pilot study.

The word "supervisor" is used frequently in the Moos Work Environment Scales and the Minnesota Satisfaction Questionnaire. The

implementation of the Western Australian Career Structure introduced four streams in the career pathway for nurses, commencing at the level two tier (area manager, clinical nurse, staff development, and research nurse). In this system, nurses are no longer directly responsible to just one individual, such as the charge sister in the previous system, but have obligations to fulfil to persons within their selected stream along with those outside of this stream.

A high positive correlation was revealed between the general satisfaction scale and the visual analogue scale. The convergence of findings indicates construct validity for the MSQ and supports further use of this instrument for times two and three of the Project.

10.2 Limitations

Limitations of the study and Project have been discussed in the body of this text where appropriate. An unforeseen limitation for the Project is the finding of lack of equivalence in the surgical units when, after careful matching, it was expected that they would be comparable. However, it is possible to take this into consideration in further analysis for the completion of the Project.

A further limitation of the Project is the combination of two speciality areas to form one unit, study three. The unequal numbers of nursing staff in the selected speciality areas created the need to combine one of the units with another speciality area. However, the paired units are comparable in patient population and speciality, and are similar in size.

10.3 Conclusions

It is premature to comment on the conceptual framework at the completion of phase one of the Primary Nursing Project. It will not be possible to comment on the usefulness of the conceptual framework until the completion of the project when primary nursing has been implemented.

Phase one of the Project incorporates the recommendations derived from the review of the literature. The five points recommended to improve the research design and method that were integrated into the study include; (a) strategies to strengthen the research design, (b) evidence of reliability and validity of instruments, (c) reports of statistical tests and levels of significance, (d) identification of independent and dependent variables, and (e) adequate passage of time before post-tests are conducted. Two of these recommendations warrant additional comment.

The highest level of research design possible in the study environment has been incorporated in the Project to maximise control and validity of the findings. The strategies used to improve the research design include; pre- and post-test measurements of the dependent variables, comparability of experimental and control units (patient and nurse groups), and evaluation of base-line equivalence of nurse study groups through the analysis of pre-test measurements. It was not possible to randomise the independent variable of primary nursing due to problems experienced within one of the study units. However, careful matching of the units was used as the most precise alternative to achieve the highest degree of control.

Post-test measurements are to be conducted at twelve months and two years following the implementation of primary nursing. Lancaster (1982) states that "the wheels of change move slowly, innovations take time for introduction, acceptance, and implementation. Generally the larger the group involved, ... and the greater the incompatibility with past procedures, the greater the amount of time involved" (p. 13). The introduction of primary nursing is a major change from the current system used to deliver nursing care at the study hospital. It is possible that the resistance and anxiety brought about by this change may adversely affect the levels of nurse satisfaction, attitudes to the work environment, and other outcome variables in the initial period (McGovern and Rogers, 1986). Conducting post-test measurements at twelve months and two years will permit the adequate passage of time to allow for 'settling in' problems and adjustment to the change. At twelve months, it will be possible to measure how changes have affected the outcomes and at two years it will be possible to estimate if change is on-going or if it has been stabilised.

The strategies included to improve the research design and method of the study and Project, derived from the literature, should result in objective evidence of the effects of the implementation of primary nursing. This evidence will assist the study hospital in the search for the most appropriate delivery of nursing care system for its establishment. At the conclusion of the Project the clinical nursing division will have evidence available to assist them in reaching a decision as to the introduction of primary nursing into other areas of the hospital as the preferred mode for giving nursing care.

10.4 Recommendations for Completion of the Project

The finding of lack of equivalence in the Surgical units will need to be taken into consideration for the remaining two phases of the Project. The study hospital is now aware of the difference and can incorporate a correction factor in the analysis at times two and three when comparison is made between the units.

Confusion resulting from the use of the word supervisor may be overcome by the inclusion of a clearer explanation of who the word refers to on the instruction sheet of the questionnaire (Appendix A). An alternative to this would be to canvas a group of nurses to find a suitable substitute for the word supervisor.

Inclusion of the staff development nurses and area managers in the study population did not prove useful as they are not allocated to one specific ward area. It is recommended that they be excluded from the remainder of the Project to avoid unnecessary use of their valuable time.

The use of a modified version of Dillman's Total Design Method (Crosby et al., 1989), was verified by the enhanced response rate engendered in the the data collection period. The response rate was elevated from 57% to a final response of 86% through the application of this technique. This was a simple manoeuvre and for the small effort required and the tremendous response it generated, it is recommended that it be used at times two and three of the Project.

NURSING SATISFACTION AND THE WORK ENVIRONMENT

Dear _____;

This study investigates the effects of the implementation of a new modality of nursing care. The results will be used to assist the Hospital in the selection of the appropriate delivery care system. This will benefit nurses, hospital management and the patients. Your assistance and participation is very important to the success of the study.

The questionnaire is comprised of three sections and can be completed in under 20 minutes. Instructions vary for the different sections and we ask that you read them carefully. If a question is unclear, use your best judgement and pencil in a note of your interpretation of the question. There are no right and wrong answers. We want to know what **you** think.

Responses are strictly confidential. It is necessary to allocate a number to each nurse to allow for comparison at a later date. These numbers however, will be kept separate from the questionnaires at all times and be known **only to the researcher**. Please **do not** put your name on the questionnaire.

Please return the questionnaire in the attached envelope. Your time and participation in the study is greatly appreciated. Should you have any questions or difficulties please do not hesitate to contact
Julien Harris on extn 3431.

NURSING SATISFACTION AND THE WORK ENVIRONMENT

STUDY NO._____

SECTION I

The Work Environment

There are 90 statements on this section. They are statements about the place in which you work. The statements are intended to apply to all work environments. However, some words may not be quite suitable for your work environment. For example, the term supervisor is meant to refer to the manager or the person or persons to whom an employee reports.

You are to decide which statements are true of your work environment and which are false. Make all your marks in the boxes provided.

If you think the statement is TRUE or mostly TRUE of your work environment, make an X in the box labelled T (true).

If you think the statement is FALSE or mostly FALSE of your work environment, make an X in the box labelled F (false).

Please be sure to answer every statement.

		T	F
1.	The work is really challenging.		
2.	People go out of their way to help a new employee feel comfortable.		
3.	Supervisors tend to talk down to employees.		
4.	Few employees have any important responsibilities.		
5.	People pay a lot of attention to getting work done.		
6.	There is constant pressure to keep working.		
7.	Things are sometimes pretty disorganised.		
8.	There's a strict emphasis on following policies and regulations.		
9.	Doing things in a different way is valued.		
10.	It sometimes gets too hot.		
11.	There's not much group spirit.		

		T	F
12.	The atmosphere is somewhat impersonal.		
13.	Supervisors usually compliment an employee who does something well.		
14.	Employees have a great deal of freedom to do as they like.		
15.	There's a lot of time wasted because of inefficiencies.		
16.	There always seems to be an urgency about everything.		
17.	Activities are well planned.		
18.	People can wear wild looking clothing while on the job if they want.		
19.	New and different ideas are always being tried out.		
20.	The lighting is extremely good.		
21.	A lot of people seem to be just putting in time.		
22.	People take a personal interest in each other.		
23.	Supervisors tend to discourage criticisms from employees.		
24.	Employees are encouraged to make their own decisions.		
25.	Things rarely get "put of till tomorrow".		
26.	People cannot afford to relax.		
27.	Rules and regulations are somewhat vague and ambiguous.		
28.	People are expected to follow set rules in doing their work.		
29.	This place would be one of the first to try out a new idea.		
30.	Work space is awfully crowded.		
31.	People seem to take pride in the organisation.		
32.	Employees rarely do things together after work.		
33.	Supervisors usually give full credit to ideas contributed by employees.		
34.	People can use their own initiative to do things.		
35.	This us a highly efficient, work-orientated place.		

		T	F
36.	Nobody works too hard.		
37.	The responsibilities of supervisors are clearly defined.		
39.	Supervisors keep a rather close watch on employees.		
39.	Variety and change are not particularly important.		
40.	This place has a stylish modern appearance.		
41.	People put quite a lot of effort into what they do.		
42.	People are generally frank about how they feel.		
43.	Supervisors often criticise employees over minor things.		
44.	Supervisors encourage employees to rely on themselves when a problem arises.		
45.	Getting a lot of work done is important to people.		
46.	There is no time pressure.		
47.	The details of assigned jobs are generally explained to employees.		
48.	Rules and regulations are pretty well enforced.		
49.	The same methods have been used for quite a long time.		
50.	The place could stand some new interior decorations.		
51.	Few people ever volunteer.		
52.	Employees often eat lunch together.		
53.	Employees generally feel free to ask for a raise.		
54.	Employees generally do not try to be unique and different.		
55.	There's an emphasis on "work before play".		
56.	It is very hard to keep up with your work load.		
57.	Employees are often confused about exactly what they are supposed to do.		
58.	Supervisors are always checking on employees and supervise them very closely.		
59.	New approaches to things are rarely tried.		

		T	F
60.	The colours and decorations make the place warm and cheerful to work in.		
61.	It is quite a lively place.		
62.	Employees who differ greatly from the others in the organisation don't get on well.		
63.	Supervisors expect far too much from employees.		
64.	Employees are encouraged to learn things even when not directly related to the job.		
65.	Employees work very hard.		
66.	You can take it easy and still get your work done.		
67.	Fringe benefits are fully explained to employees.		
68.	Supervisors do not often give in to employee pressure.		
69.	Things tend to stay just about the same.		
70.	It is rather drafty at times.		
71.	It's hard to get people to do any extra work.		
72.	Employees often talk to each other about their personal problems.		
73.	Employees discuss their personal problems with supervisors.		
74.	Employees function fairly independently of supervisors.		
75.	People seem to be quite inefficient.		
76.	There are always deadlines to be met.		
77.	Rules and policies are constantly changing.		
78.	Employees are expected to conform rather strictly to the rules and customs.		
79.	There is a fresh, novel atmosphere about the place.		
80.	The furniture is usually well-arranged.		
81.	The work is usually very interesting.		
82.	Often people make trouble by talking behind other's backs.		
83.	Supervisors really stand up for their people.		

		T	F
84.	Supervisors meet with employees regularly to discuss their future work goals.		
85.	There's a tendency for people to come to work late.		
86.	People often have to work overtime to get their work done.		
87.	Supervisors encourage employees to be neat and orderly.		
88.	If an employee comes in late, he can make it up by staying late.		
89.	Things always seem to be changing.		
90.	The rooms are well ventilated.		

SECTION II

Job Satisfaction

The purpose of this section is to give you a chance to tell how you feel about your present job, what things you are satisfied with and what things you are not satisfied with.

On the following page you will find statements about your present job.

- Read each statement carefully.
- Decide how satisfied you feel in general, about the aspect of your job described by the statement.

Keeping the statement in mind:

- if you feel that your job gives you more than you expected, circle the number 5 for "very satisfied";
- if you feel that your job gives you what you expected, circle the number 4 for "Satisfied";
- if you cannot make up your mind whether of not the job gives you what you expected, circle the number 3 for the "Neither Satisfied nor Dissatisfied";
- if you feel that your job gives you less than you expected, circle the number 2 for "Dissatisfied';
- if you feel that your job gives you much less than you expected, circle the number 1 for "very Dissatisfied".

Remember: Keep the statement on mind when deciding in general, how satisfied you feel about that aspect of our job.

Do this for all statements. Please answer every item.

Be frank and honest. Give a true picture of your feelings about your present job.

Ask yourself: How satisfied am I with this aspect of my job?

1 means I am very dissatisfied with this aspect of my job.

2 means I am dissatisfied with this aspect of my job.

3 means I can't decide whether I am satisfied or not with this aspect of my job.

4 means I am satisfied with this aspect of my job.

5 means I am very satisfied with this aspect of my job.

1 = Very Dissatisfied 2 = Dissatisfied 3 = Can't Decide
4 = Satisfied 5 = Very Satisfied

In general, on my present job, this is how I feel About:

1.	Being able to keep busy all the time.	1	2	3	4	5
2.	The chance to work alone on the job.	1	2	3	4	5
3.	The chance to do different things from time to time.	1	2	3	4	5
4.	The chance to be "somebody" in the community.	1	2	3	4	5
5.	The way my supervisor handles the nursing staff.	1	2	3	4	5
6.	The competence of my supervisor in making decisions.	1	2	3	4	5
7.	Being able to do things that don't go against my conscience.	1	2	3	4	5
8.	The way my job provides for steady employment.	1	2	3	4	5
9.	The chance to do things for other people.	1	2	3	4	5
10.	The chance to tell co-workers what to do.	1	2	3	4	5
11.	The chance to do something that makes use of my abilities.	1	2	3	4	5
12.	The way hospital policies are put into practice.	1	2	3	4	5
13.	My pay and the amount of work I do.	1	2	3	4	5
14.	The chances for advancement on this job.	1	2	3	4	5
15.	The freedom to use my own judgement.	1	2	3	4	5
16.	The chance to try my own methods of doing the job.	1	2	3	4	5
17.	The working conditions.	1	2	3	4	5
18.	The way my co-workers get along with each other.	1	2	3	4	5
19.	The praise I get for doing a good job.	1	2	3	4	5
20.	The feeling of accomplishment I get from the job.	1	2	3	4	5

Please draw a stroke through the line below to indicate where you think you are situated on your overall job satisfaction level.

VERY UNSATISFIED ——————————————— VERY SATISFIED

SECTION III

This section of the questionnaire investigates whether certain other differences between nurses are related to how they feel about their job situations.

Please tick the appropriate box.

Gender

What is your gender? M F

Age

Could you please indicate your age category.

< 25 ☐

26 - 35 ☐

36 - 45 ☐

46 > ☐

Previous Experiences

What is your country of origin?_____
In which country did you complete your basic training?_____
In what year did you complete your training?_____
Do you work full time of part time?_____

How long have you worked in this Hospital?

< 1 year ☐

13 months - 2 years ☐

25 months - 5 years ☐

49 months > ☐

What is your level within the career structure? 1 2

Have you worked within primary nursing previously? Could you please define the system as it worked and give details of your experience with this delivery system. (Briefly)

_____

_____

_____

_____

_____

Education Preparation

What kind of nursing education have you had?

Hospital Diploma ☐

University / College Diploma ☐

Post Basic Certificates ☐

Degree Award ☐

Degree Award and Post Basic Certificates ☐

Other ☐

Thankyou for completing the questionnaire. Your participation in this nursing research is greatly appreciated.

Appendix B

TO:
FROM: Julien HARRIS
DATE: 18.4.1990
SUBJECT: NURSING SATISFACTION AND THE WORK ENVIRONMENT QUESTIONNAIRE.

My records currently show that you have not returned the nursing satisfaction and the work environment questionnaire.

I would like to take this opportunity to inform you that your participation in this nursing research is very important to the success of the study on the effects of the implementation of primary nursing.

Please ring me on extension 3431 if you require a replacement questionnaire. If you have responded in the last few days please ignore this reminder.

Your time and participation is greatly appreciated.

Appendix C

NURSING SATISFACTION AND THE WORK ENVIRONMENT

Dear _____,

This study investigates the effects of the implementation of a new modality of nursing care. The results will be used to assist the Hospital in the selection of the appropriate delivery care system. This will benefit nurses, hospital management and the patients. Your assistance and participation is very important to the success of the study.

The questionnaire is comprised of three sections and can be completed in under 20 minutes. Instructions vary for the different sections and we ask that you read them carefully. If a question is unclear, use your best judgement and pencil in a note of your interpretation of the question. There are no right and wrong answers. We want to know what you think.

Responses are strictly confidential. It is necessary to allocate a number to each nurse to allow for comparison at a later date. These numbers however, will be kept separate from the questionnaires at all times and be known **only to the researcher**. Please **do not** put your name on the questionnaire.

Please return the questionnaire in the attached envelope. Your time and participation in the study is greatly appreciated. Should you have any questions or difficulties please do not hesitate to contact
Julien Harris on extn 3431.

My records show that as yet you have not responded to the questionnaire. Perhaps you have misplaced your copy or for some reason it did not reach either you or me through the internal mailing system. I would like to offer you a second opportunity to participate in this nursing research. Could you please return your response as soon as possible.

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