

Caring for patients: setting priorities
An Exploration of the Process of Prioritising Care in Nursing

Charles Hendry

A thesis submitted in partial fulfilment of the requirements of the University of Abertay Dundee for the degree of Doctor of Philosophy

This research study was carried out in collaboration with Tayside College of Nursing and Midwifery and Ninewells Hospital, Dundee.

May 2001

I certify that this thesis is a true and accurate version of the thesis approved by the examiners.

Signed 

Date *31 Oct 2001*

Director of Studies

Acknowledgements

For any PhD student, but especially a part-time one, a work such as this becomes a way of life, affecting not only the student but also so many others without whom I would have soon fallen by the wayside.

Firstly, thanks must go to my supervisors, Professor Mike Swanston, Depute Principal and Head of School of Social and Health Sciences at the University of Abertay Dundee, and Dr Anne Walker, Senior Behavioural Scientist, Health Services Research Unit, University of Aberdeen. Always supportive, always there (well, mostly!).

Thanks must also go to Dr. Catherine Robertson, who was part of the original supervisory team prior to her retirement, and also Professor Magnus Shearer who brought a nursing perspective to the supervision after Catherine's departure, and before his own early retirement.

A special word of thanks must go to the participants in the three studies that make up this research project. They gave freely of their time, were generous in their response, and always seemed interested in the work I was doing and the progress I was making.

Thanks also to Dr. Harry Staines, who gave graciously of his time to provide statistical advice and support.

I would especially like to thank Mr. Andrew Jackson and the library staff at the School of Nursing and Midwifery, Tayside Campus, University of Dundee for their sterling efforts in ensuring that I was able to access almost all the material that I requested from them.

Thanks to Douglas McLeod, for his assistance with recording equipment, and to David Nisbett for recovering the occasional lost file!

My work colleagues who were always supportive, especially Janice Rattray, Dr. Karen Smith, Ella McLafferty, Sandra Haggart, Dr. Martyn Jones and Alistair H. Farley.

A word of thanks must also go to Dundee and Angus College of Nursing and Midwifery, Tayside College of Nursing and Midwifery and the School of Nursing and Midwifery, University of Dundee for the support that I received over the lifetime of this study.

Thanks also to Duncan Edward Moir for his conscientious proofreading; any errors that remain are mine.

To my parents, Betty and Tom, who gave me the gift of life, and who were my first teachers.

To my children, Sarah, Rachel, Ruth, Katherine and James – you missed a lot over the years but you never complained.

For Shona, my wife, who sacrificed most, and kept me going.

Praise be to God, for the gifts he has given me - I trust I have not buried them (*Matthew, 25: 14-30*)

Caring for patients: setting priorities

An Exploration of the Process of Prioritising Care in Nursing

ABSTRACT

Caring for patients in an acute medical ward occurs in a complex and dynamic environment. Prioritisation of goals and activities represents one element of effective planning and delivery of care. The importance of priority setting has been highlighted in the nursing literature for over twenty-five years; however, there would appear to be no systematic study of this key skill.

This thesis explores priority setting within a novice/expert framework, using a mixed methods approach. In addition to using simulation it investigates real-time priority setting within actual clinical practice.

Study one used simulation in four groups with a range of nursing experience. This included one group of non-nurses for comparison. Participants were asked to prioritise twelve care activities presented in a simulated case-load. Analysis demonstrated that the simulation evoked priority setting behaviour, and differences in priority setting were seen. Study two combined the simulated case-load with think-aloud method. Semi-structured interview completed the data collection. Findings were consistent with Benner's novice/expert framework, suggesting that prioritisation is determined by two main characteristics, the views, values and perceptions of the nurse, and key skills, knowledge and experience. Study three used think-aloud method to examine priority setting in clinical practice, comparing junior student nurses with senior staff nurses. This was supplemented by observation and semi-structured interview. Findings from this study identified differences in cognitive processes, and priority setting strategies. Developing critical thinking skills, expert role modelling, and the use of an active apprenticeship model may facilitate skill acquisition.

This thesis highlights the complexity of priority setting in caring for patients in an acute medical ward. It explores the development of this skill in learner nurses, and demonstrated a range of methods for studying decision-making in both simulated and clinical settings.

CONTENTS

1	CHAPTER ONE: AN EXPLORATION OF THE MEANING AND CONTEXT OF PRIORITY SETTING.....	3
1.1	INTRODUCTION.....	3
1.1.1	<i>Priority Setting as a Key Function in the Delivery of Effective Nursing Care</i>	5
1.2	DELIVERING NURSING CARE: EXPLORING THE CONTEXT	6
1.2.1	<i>Ward Organisation</i>	7
1.2.2	<i>The Nursing Process</i>	9
1.2.3	<i>Philosophies, Theories and Models of Nursing</i>	10
1.3	PRIORITY SETTING	10
1.3.1	<i>What is Priority Setting?</i>	11
1.3.2	<i>Setting Priorities: A Form of Decision-making?</i>	12
1.3.3	<i>The Nature of Prioritising Care</i>	13
1.3.4	<i>Classifying Priorities</i>	16
1.3.5	<i>Strategies for Setting Priorities</i>	18
1.3.5.1	<i>Priority Setting by Mutual Agreement</i>	18
1.3.5.2	<i>Priority Setting Frameworks</i>	19
1.3.6	<i>Factors Affecting Priority Setting</i>	23
1.3.7	<i>Priority Setting: A Key Skill for Nursing?</i>	24
1.4	NOVICES AND EXPERTS.....	28
1.4.1	<i>Novices and Experts in the Nursing Literature</i>	28
1.4.1.1	<i>Benner's Five-Stage Model of Skill Acquisition</i>	33
1.4.2	<i>Novices and Experts in the General Literature</i>	33
1.4.2.1	<i>Expertise or Experience?</i>	37
1.4.2.2	<i>Can Experts Articulate the Logic and/or Knowledge Used in Decision-making?</i>	38
1.4.2.3	<i>On Being a Novice</i>	38
1.5	BROAD METHODOLOGICAL CONSIDERATIONS	39
1.5.1	<i>Methodological Framework of the Study</i>	39
1.5.2	<i>Multiple methods: confirmation or completeness?</i>	40
1.5.3	<i>Issues of Reliability and Validity in Qualitative Research</i>	42
1.6	A PRELIMINARY MODEL OF NURSE PRIORITY SETTING	42
1.7	GENERAL AIMS OF THE STUDY	43
1.8	CONCLUSION.....	44
2	CHAPTER TWO: EXPLORING PRIORITY SETTING USING A SIMULATED CASE-LOAD.....	46
2.1	INTRODUCTION.....	46
2.2	AIMS OF VIGNETTE STUDY.....	46
2.3	METHODOLOGICAL ISSUES.....	46
2.3.1	<i>The Use Of Simulation To Study Problem-Solving And Clinical Decision-Making</i> ..	47
2.4	STUDY DESIGN.....	51
2.4.1	<i>Vignette Construction</i>	51
2.4.2	<i>Simulation Tool</i>	52
2.5	PILOT STUDY.....	52
2.5.1	<i>Study Participants</i>	52
2.5.2	<i>Administration of Simulation Exercise</i>	52
2.5.3	<i>Results</i>	53
2.5.4	<i>Discussion and Amendments to Main Study</i>	55
2.6	MAIN STUDY.....	57
2.6.1	<i>Study Participants</i>	57
2.6.2	<i>Procedure</i>	58
2.6.3	<i>Analysis</i>	59
2.6.4	<i>Results</i>	59
2.6.5	<i>Discussion</i>	63
2.6.5.1	<i>Key Findings</i>	63

2.6.5.2	Other Findings	65
2.6.5.3	Strengths of Study	66
2.6.5.4	Limitations of Study	66
2.6.5.5	Implications	67
2.7	CONCLUSION	67
3	CHAPTER THREE: EXPOSING PRIORITY SETTING	70
3.1	INTRODUCTION.....	70
3.2	AIMS OF THINK-ALOUD STUDY	70
3.3	METHODOLOGICAL ISSUES.....	71
3.3.1	<i>Theoretical Basis of Think-Aloud Method and its Use in the Study of Cognitive Processes and Decision-Making</i>	71
3.3.1.1	General Introduction.....	71
3.3.1.2	Analysing Verbal Protocols.....	74
3.3.1.3	Strengths and Limitation of Think-Aloud Method	75
3.3.2	<i>The Use of Interviews in Qualitative Research</i>	77
3.3.2.1	General Introduction.....	77
3.3.2.2	Sample Size	79
3.3.2.3	Ethical Concerns.....	80
3.3.2.4	Conducting Interviews.....	81
3.3.2.5	Analysing Interviews.....	82
3.3.2.6	Reliability and Validity	84
3.3.3	<i>Expert Panels</i>	85
3.4	STUDY DESIGN.....	88
3.4.1	<i>Recruitment</i>	88
3.4.2	<i>Combining the Simulated Case-load with Think-aloud Method</i>	90
3.4.2.1	Aims	90
3.4.2.2	Equipment	90
3.4.2.3	Procedure.....	90
3.4.3	<i>Interviews</i>	91
3.4.4	<i>Expert Panel</i>	92
3.5	STUDY PARTICIPANTS	94
3.5.1	<i>Sample</i>	94
3.5.2	<i>Characteristics of Sample</i>	94
3.6	ANALYSIS.....	95
3.7	RESULTS.....	96
3.7.1	<i>Think-aloud Exercise and Interview Data</i>	96
3.7.1.1	Transcription Length	96
3.7.1.2	Summaries of Verbal Protocol Data	98
3.7.1.3	Further Analysis of Verbal Protocol and Interview Data using the Constant Comparative Method.....	102
3.7.2	<i>Expert Panel</i>	114
3.7.2.1	Clinical and Academic Panels Review of Functional Level of Participants....	116
3.7.2.2	Differences and Similarities in Expert Judgement in Respect of Participants' Functional Level.....	119
3.7.2.3	Over and Under-estimation of Functional Levels by Expert Panels.....	120
3.8	DISCUSSION.....	122
3.8.1	<i>Key Findings</i>	122
3.8.2	<i>Other Findings</i>	126
3.8.3	<i>Strengths</i>	127
3.8.4	<i>Limitations</i>	127
3.8.5	<i>Implications</i>	127
3.9	CONCLUSION.....	129

4	CHAPTER FOUR: STUDYING PRIORITY SETTING IN PRACTICE.....	131
4.1	INTRODUCTION.....	131
4.2	AIMS OF CLINICAL STUDY	131
4.3	METHODOLOGICAL ISSUES.....	132
4.3.1	<i>Simulation versus 'Real-world' Research</i>	132
4.3.2	<i>Using Think-aloud in Non-simulated Environments - Previous Work</i>	133
4.3.3	<i>Analysing Verbal Protocols Generated from Clinical Think-aloud Reports</i>	135
4.3.4	<i>Working in a Familiar Setting</i>	135
4.3.5	<i>Ethical Approval</i>	137
4.3.6	<i>Observation</i>	138
4.4	STUDY DESIGN.....	144
4.4.1	<i>General Design Considerations</i>	144
4.4.1.1	Recruitment	144
4.4.1.2	Organisational Issues	146
4.4.2	<i>Think-aloud Study</i>	148
4.4.2.1	Aims	148
4.4.2.2	Equipment	148
4.4.2.3	Procedure.....	149
4.4.3	<i>Observation Study</i>	149
4.4.3.1	Aims of Observation Study	149
4.4.3.2	Development of Activity Schedule.....	150
4.4.3.3	Procedure.....	151
4.4.3.4	Field Notes	151
4.4.4	<i>Post-study Interview</i>	151
4.5	STUDY PARTICIPANTS.....	152
4.5.1	<i>Population</i>	152
4.5.2	<i>Sample</i>	152
4.5.3	<i>Characteristics of Sample</i>	153
4.6	CHARACTERISTICS OF STUDY ENVIRONMENT	154
4.7	ANALYSIS.....	156
4.7.1	<i>Think-aloud Study</i>	156
4.7.2	<i>Observation study</i>	157
4.7.2.1	Activity Schedule	157
4.7.2.2	Field Notes	157
4.7.3	<i>Post-study Interview</i>	157
4.8	RESULT	158
4.8.1	<i>Think-aloud Study</i>	158
4.8.2	<i>Observation Study</i>	163
4.8.2.1	Activity Schedule	163
4.8.2.2	Field Notes	167
4.8.3	<i>Analysis of Post-Study Interviews</i>	175
4.9	DISCUSSION.....	190
4.9.1	<i>Key Findings</i>	190
4.9.2	<i>Other Findings</i>	193
4.9.3	<i>Strengths of Study</i>	195
4.9.4	<i>Limitations of Study</i>	196
4.9.5	<i>Implications</i>	196
4.9.6	<i>Challenges of Undertaking Clinical Nursing Research</i>	197
4.10	CONCLUSION	198

5	CHAPTER FIVE: CARING FOR PATIENTS: SETTING PRIORITIES – FUTURE DIRECTIONS	200
5.1	INTRODUCTION.....	200
5.2	SUMMARY OF FINDINGS	201
5.3	LIMITATIONS OF CURRENT STUDY	204
5.4	IMPLICATIONS FOR THEORY, PRACTICE AND EDUCATION DERIVED FROM THE CURRENT STUDY	206
5.4.1	<i>Implications for Theory and Research</i>	206
5.4.2	<i>Implications for Practice</i>	210
5.4.3	<i>Implications for Nursing Education</i>	211
5.5	FURTHER WORK.....	214
5.6	PRIORITY SETTING: ON THE AGENDA?.....	215
5.7	CONCLUSIONS	216
	REFERENCE LIST.....	219

LIST OF TABLES

Table 1-1: Stages of planning.....	15
Table 1-2: Priority setting guidelines	21
Table 2-1: Gender and age distribution of pilot study participants	52
Table 2-2: Number of discrete activities identified by participants in completing simulation.....	54
Table 2-3: Time taken (in minutes) to complete simulation.....	54
Table 2-4: Definitions of root categories.....	55
Table 2-5: Time taken (in minutes) to complete revised simulation	56
Table 2-6: Completed responses (actual versus usable) from each of the four groups.....	59
Table 2-7: Gender of participants in each participant group	59
Table 2-8: Mean ages of participants within each group.....	60
Table 2-9: Junior students' ranking of priorities for each care activity	60
Table 2-10: Level of agreement within each group regarding prioritisation of care activities.....	61
Table 2-11: Median priority for each care activity assigned by each group.....	62
Table 2-12: Extent of patient versus task orientated approaches within and between groups.....	62
Table 2-13: Task orientation versus a more person centred approach to care.....	63
Table 3-1: Frequency of terms 'panel of experts' and 'expert panel(s)' found on CINAHL, limited by year.....	86
Table 3-2: Participants in think-aloud exercise.	88
Table 3-3: Qualifications and time at respective grade of trained nurses in study.	95
Table 3-4: Length (in words) of the verbal protocol data by grade	97
Table 3-5: Length (in minutes) of the verbal protocol data by grade	97
Table 3-6: Length (in words) of the interview transcripts by grade	97
Table 3-7: Categories produced from open coding of the verbal protocol and interview data....	102
Table 3-8: Themes and their associated categories.	103
Table 3-9: Characteristics of clinical nurses' expert panel.....	115
Table 3-10: Characteristics of academic nurses' expert panel	115
Table 3-11: Functional level of each participant as assigned by clinical staff	117
Table 3-12: Functional level of each participant as assigned by academic staff	117
Table 3-13: Functional level as assigned by clinical and academic staff combined.....	117
Table 3-14: Functional level as assigned by both clinical and academic staff for each <u>grade</u> of participant.....	118
Table 3-15: Two way ANOVA with interactions.....	119
Table 3-16: Nested analysis of variance.....	120
Table 3-17: Over and under-estimating functional level by clinical and academic panels (combined)	121
Table 4-1: Duty rotas for senior staff nurses during period of study. (Light shading indicates practice session or interview; dark shading indicates TA and observation periods).	147
Table 4-2: Summary of age, and length of time in relevant positions, of senior staff nurses.....	153
Table 4-3: Summary of age and any previous 'caring experience' prior to commencing nurse training.	154
Table 4-4: Size and nominal sex of wards used in study.....	154
Table 4-5: Key ward data for each ward during each day of study.	155
Table 4-6: Patient Dependency scores (where kept). The minimum dependency score possible is 1, the maximum 4.	155
Table 4-7: Number of diagnostic categories and allocated patients per day.	156
Table 4-8: Length of each TA report (in words)	158
Table 4-9: Summary statistics for number of words in TA reports	159
Table 4-10: Categories obtained from content analysis of TA reports.	159
Table 4-11: Example of coding of TA segments.....	160
Table 4-12: Further example of coding of TA segments.....	160
Table 4-13: Percentage of segments that made reference to each category related to cognitive processes as reported by each participant in their TA reports.	161
Table 4-14: Percentage of segments that made reference to each category related to planning	

goals as reported by each participant in their TA.	161
Table 4-15: Percentage of segments that made reference to each category related to influencing factors as reported by each participant in their TA.....	162
Table 4-16: Mann-Whitney U test (two-tailed) comparing verbal protocols of senior staff nurses and nursing students.	162
Table 4-17: Time taken for category labeled ‘Interruptions’ expressed in seconds.	164
Table 4-18: Comparison of who initiated observed events for student and trained nurses.	165
Table 4-19: Time taken (in seconds) by student and trained nurses per observed episode (Mann-Whitney U test (two-tailed) $U=178625.5$, $p \leq 0.009$).....	166
Table 4-20: Field notes associated with observation of participants SN1/St1.....	170
Table 4-21: Field notes associated with observation of participants SN2/St2.....	170
Table 4-22: Field notes associated with observation of participants SN3/St3.....	171
Table 4-23: Field notes associated with observation of participants SN4/St4.....	172
Table 4-24: Field notes associated with observation of participants SN5/St5.....	173
Table 4-25: Priority setting themes and their associated categories.	176
Table 4-26: Aims of priority setting.	177
Table 4-27: Level of confidence in priority setting skill.	179
Table 4-28; Criteria used make priority setting decisions.	180
Table 4-29: Importance of medical diagnosis in priority setting.....	182
Table 4-30: Managing interruptions to plan of care.	183
Table 4-31: Changes in priority setting skill over time.	185
Table 4-32: Importance of priority setting skills for nursing practice.	187
Table 4-33: Developing priority setting skill in learners.....	188
Table 4-34: Factors that facilitate or inhibit priority setting in clinical practice.	189

LIST OF FIGURES

Figure 1-1: Terms associated with 'decision making' and their CINAHL definitions (where provided).....	12
Figure 1-2: Definition of priority setting	13
Figure 1-3: Preliminary model of priority setting: the process of planning care is represented within the circle, whereas factors that may impinge upon this process surround the circle.....	43
Figure 3-1: Information Processing Model (from Ericsson & Simon (1980) and Jones (1989)).....	73
Figure 4-1: Range of participation possible in observation methods (Johnson 1992)....	139
Figure 4-2: Range of involvement in observational methods (Couchman and Dawson 1995).	140
Figure 4-3: Interruptions to work of student and trained nurses as a proportion of all observed events.....	163
Figure 4-4: Source of demands – indication of person responsible for initiating observed event for student nurses.....	164
Figure 4-5: Source of demands – indication of person responsible for initiating observed event for senior staff nurses.	165
Figure 4-6: Time taken (in seconds) by student nurses per observed event.	166
Figure 4-7: Time taken (in seconds) by staff nurses per observed event.	167
Figure 5-1: Two layered model of priority setting	207
Figure 5-2: Priority setting model illustrating process and determinants.....	209

LIST OF APPENDICES

Appendix I:	Benner's levels of skill acquisition.
Appendix Ia:	Simulated case-load (pilot study)
Appendix II:	Simulated case-load.
Appendix III:	Letter to nursing students in pilot study.
Appendix IV:	Instruction sets in pilot study.
Appendix V:	Vignette response sheet.
Appendix VI:	Feedback response sheet.
Appendix VII:	Biographical information response sheet.
Appendix VIII:	Letter from collaborating institution (College of Nursing) confirming support for study.
Appendix IX:	Vignette response grid.
Appendix X:	Vignette response grid (specimen).
Appendix XI:	Simulated case-load with lay definition of terms.
Appendix XII:	Letter to behavioural science students.
Appendix XIII:	Letter from collaborating institution (Acute Hospital) confirming support for study.
Appendix XIV:	Letter to trained nurses inviting their participation.
Appendix XV:	Letter to nursing students inviting their participation.
Appendix XVI:	Reminder letter to participants in study regarding completion of exercise.
Appendix XVII:	Coding grid for simulated exercise.
Appendix XVIII:	Practice exercises for think-aloud method.
Appendix XIX:	Interview guide.
Appendix XX:	Instructions for expert panels.
Appendix XXI:	Example of think-aloud transcript.
Appendix XXII:	Example of interview transcript.
Appendix XXIII:	Letter to Secretary of Local Research Ethics Committee.
Appendix XXIV:	Response from Secretary of Local Research Ethics Committee.
Appendix XXV:	Letter to Clinical Nurse Manager informing her of proposed study.
Appendix XXVI:	Letter to Senior Charge Nurses informing them of proposed study.
Appendix XXVII:	Letter to all participants in clinical study requesting their assistance.
Appendix XXVIII:	Letter to senior staff nurses in clinical study.
Appendix XXIX:	Memorandum to link teachers.
Appendix XXX:	Observation schedule.
Appendix XXXI:	Interview guide (clinical study).
Appendix XXXII:	List of medical diagnoses.
Appendix XXXIII:	Coding schedule for think-aloud reports (clinical study).
Appendix XXXIV:	Example of think-aloud transcript (clinical study).
Appendix XXXV:	Results of independent samples t test comparing verbal protocols of senior staff nurses and nursing students.
Appendix XXXVI:	Patient information sheet.
Appendix XXXVII:	Example of interview transcript (clinical study).
Appendix XXXVIII:	List of conference presentations given in respect of current study

"Philosophy means looking at things which one takes for granted and suddenly seeing that they are very odd indeed."

(Iris Murdoch, 1919-1999, Irish Novelist)

Chapter One

An Exploration of the Meaning and Context of Priority Setting

1 Chapter One: An Exploration of the Meaning and Context of Priority Setting

1.1 Introduction

In many of the settings in which nurses practise, they are expected to provide care for several patients at the same time. In clinical practice, when caring for a group of patients, they will have to make decisions about who to see to first, then second, and then third, and so on. In order to care for their patients in an efficient manner, that is, a manner that meets the patients' needs and maximises patient outcomes, some temporal organisation of the nurse's case-load is required. This means that decisions have to be made about the order in which these patients are cared for. This ordering of care involves the nurse in making decisions regarding the priorities of care with respect to the individual patients, and also various aspects of each patient's care. The higher the priority that a nurse assigns to an aspect of care then the more likely, it may be postulated, that they will attend to this aspect of care sooner rather than later.

A consideration of priority setting in nursing raises many interesting questions. What is a priority in nursing? What does it mean to 'set' priorities? How important a skill is this for nursing? Do nurses agree in their priorities? What happens if there is a conflict of priorities between nurses, doctors and patients? Two key questions are - what is the process by which priorities are decided, and how does this skill differ, if at all, between learner and trained nurses?

The researcher's interest in clinical priority setting by nurses was stimulated by his experience of supervising nursing students during their clinical practice. Both as a staff nurse, and later as a clinical teacher, the author had responsibility for supervising pre-registration nursing students whilst on clinical placement. These students were present in the author's clinical areas for periods of varying length during their three years of training. It was during this supervision that the author became aware of the concept of priority setting from two perspectives. Firstly, as students progressed through their training, it was not uncommon for them to state on their clinical assessments that they recognised the need to develop priority-setting skills. Secondly, trained nurses who acted as preceptors for the students whilst on clinical placement, and who completed a clinical assessment of their progress would, not infrequently, comment on the development of priority-setting skills in their students.

Anna, a third year student, identified one of her personal learning objectives during a clinical placement as,

'To organise patient case load effectively using prioritisation skills.'

One preceptor commented regarding a third year student,

'Edith prioritises her workload appropriately.'

On another occasion, a preceptor in reviewing a student's progress indicated that,

'Katie has highlighted areas where she would like to improve, including being more aware of prioritising care.'

One student's assessment gives the impression of skill development when his preceptor suggests that,

'Colin requires more practice in prioritising his workload.'

However, two months later whilst on a different ward another preceptor now comments,

'Colin prioritised his work well.'

Sarah's preceptor makes an interesting suggestion when she appears to link high standards of nursing care with the ability to be able to set appropriate priorities,

'Sarah has achieved a high standard of care and has shown herself able to prioritise that care.'

And finally, Morag's preceptor makes similar links with competent practice when she declares,

'Morag is a competent student who was able to assess, plan and prioritise care.'

Other students' assessments include reference to organisational skills, to planning appropriate care and to being 'more forward thinking', all of which might imply an element of priority setting.

The above comments were unsolicited, and were noted by the author when routinely reviewing students' clinical assessments. Therefore, they may be regarded as typical of the views of students and their preceptors regarding the importance of priority setting for competent and skilled nursing practice.

1.1.1 Priority Setting as a Key Function in the Delivery of Effective Nursing Care

Caring for patients takes place in a complex, dynamic environment, and as such nurses must impose structure and order on this environment if they are to provide an acceptable standard of care. To what extent can priority setting be considered a key skill for professional nurses in respect of providing a high standard of patient care?

For Hughes & Young (1990) and Taylor (2000), the ability of nurses to provide safe, competent care, depends on good clinical problem-solving skills; clinical decision-making being the nurse's most critical function. Fowler (1997) states that clinical reasoning is the hallmark of nursing expertise. Clinical thinking is defined by Fowler as thinking that involves an interaction between the nurse's cognition, the subject matter, and the context of the situation. Indeed, Watson (1994) suggests that nurses are increasingly faced with complex decision-making tasks often in areas that were previously not regarded as nursing.

Priority setting, it will be argued in section 1.3.2, is a subset of clinical decision-making and problem-solving. Priority setting is a skill that is associated with highly skilled decision makers in nursing, and that in clinical practice requires sophisticated skill in identifying and considering the effects of numerous situational variables (Feldman, Monicken, & Crowley, 1983; Itano, 1989). Furthermore, this skill is associated with experience and expertise. Field (1987) states that at the level of advanced beginner, nurses do not generally have the experience to choose appropriately among priorities. Tanner, Padrick, Westfall, & Putzier (1987) and Watson (1994) propose that nursing needs more research into the way that nurses actually make decisions in clinical practice.

Chapter one will continue with a brief consideration of the context within which nurses deliver care to patients, as the decisions made by nurses about patient care take place

within, and may be influenced by, a particular setting. Within that setting a number of elements such as the manner of ward organisation, and philosophies of care may influence the priorities set. Subsequently, a more detailed review of priority setting will be undertaken, in order to elicit a contemporary understanding of the concept and its importance in relation to both the education of student nurses, and the clinical practice of qualified nurses. As this study is concerned not just with the concept of priority setting *per se* but also in how this skill develops in student nurses, the next section will go on to explore the notion of experience and the development of expertise. Chapter one will conclude with a brief look at some broad methodological issues pertinent to the current study, prior to describing a preliminary model of priority setting and outlining the general aims of the study.

1.2 Delivering Nursing Care: Exploring the Context

In considering the setting of patient care priorities by a nurse who has been allocated a case-load of two or more patients, it is necessary to consider the context in which that care is delivered. Across the United Kingdom, professional nursing care is delivered in a wide range of settings; acute hospitals, long stay hospitals, community care, nursing homes, schools, workplaces, and in many other settings. In all of these settings nurses are required to make decisions regarding priorities of care. This study is concerned with priority setting in the context of an acute hospital medical ward. The reasons for choosing to study priority setting in this context are essentially threefold. Firstly, this particular setting is one in which priority setting is likely to be very demanding due to the inherent nature of this environment. Acute medical wards are dynamic, busy places, often with extremely ill patients who are experiencing a range of complex nursing and medical problems (Effken, 2001). Secondly, this area was one familiar to the researcher in relation to his own clinical practice and as a teacher, and thirdly, student nurses spend a considerable period of time during their training in acute hospital settings.

In order to provide some sense of the environment within which such decision-making is taking place, some of the factors that may underpin the general context in which patient care occurs will now be considered, specifically ward organisation, the nursing process, and philosophies, theories and models of nursing. Gaining an appreciation of the environment within which nurses deliver care should help make more explicit some of those features that may impact upon a nurse's priority setting behaviour.

1.2.1 Ward Organisation

Hospital wards are complex places. They are semi-autonomous units working within the context of a hierarchy of larger units, i.e., the hospital, the trust and the National Health Service. The organisation of nursing practice at ward level can occur in a number of ways. Each of these will now be discussed.

Berry & Metcalf (1986) describe two ways in which nursing practice can be organised, namely, task allocation and patient allocation. There is also the suggestion that team nursing is an alternative means of implementing patient allocation (Berry & Metcalf, 1986; Turnock, 1987). Thomas & Bond (1990) suggest that there are three different ways of organising nursing work:

1. Task allocation or functional nursing.
2. Team nursing.
3. Primary nursing.

A brief look at each of these ways of organising nursing care may be helpful.

Task allocation

This is a method of delivering nursing care where the care of patients is reduced to a set of individual tasks to be performed for each patient. A nurse is allocated to carry out a specific task for all patients in the ward; for example, the nurse may be given the task of observing and recording the temperatures, pulse and blood pressure of every patient in the ward. Among the major criticisms of task allocation are that nursing care becomes fragmented, communication between staff is poor, and that the nursing care given fails to focus on the needs of the individual patient (Kratz, 1979). For these reasons, this form of organisation of nursing care was gradually replaced by other, more holistic approaches, and is unlikely to be found in many clinical areas today as the principal means of organising care, at least not overtly.

It is interesting to note however, that in the mid to late 1990's a shortage of qualified nurses contributed to the temporary revival of task allocation as a system of working in some areas, as nurses attempted to respond to the constraints within which they were working (Garbett, 1996a; Hilton & Goddard, 1996). The increasing use of support workers, working under the direction of a qualified nurse, necessitated the allocation of

tasks to these nurses' assistants. Garbett (1996b) further suggests that a reversion to task allocation may be necessary in emergencies and it may even be the case that there are some tasks that do not fit neatly into other models of organising care, e.g., checking resuscitation equipment.

Patient allocation

In patient allocation, the care is carried out by the allocation of patients to an individual nurse, or small groups of nurses; the nurse, or team of nurses, are then responsible for carrying out all aspects of patient care. The allocation of patients to a nurse may vary on a day-to-day basis, as can the composition of the group providing the care. The number of patients per nurse may be one-to-one in specialist units such as intensive care, but in general medical/surgical wards this may vary between three and eight patients, or even higher.

Team Nursing

In team nursing, nurses are formed into teams and allocated to groups of patients for variable, but usually considerable lengths of time, working together to care for the same group of patients, over several days (Garbett, 1996b). A qualified nurse, who is responsible for the work of their team, leads the team, although individual team members continue to be accountable for their actions. This form of organisation has much in common with patient allocation above; namely, the team provides all of the care required by patients in their area for that shift, or series of shifts. The main difference between the two being that the care is organised around the team rather than a group of named patients. In addition, the team may be organised around the physical environment, in which patients are grouped together, rather than a group of named patients who may be located in different parts of the ward. Even here, there is the possibility of allocating tasks to team members. Where this happens team nursing is not being practised (Kron & Durbin, 1981).

Primary nursing

Giovannetti (1981) cited in Thomas & Bond (1990, pg.1108) defines primary nursing as:

'A mode of nursing organisation at the unit level in which one registered nurse is designated as the primary nurse for a small number of patients upon their admission and for the duration of their stay in that unit; the primary nurse takes responsibility for planning and evaluating all aspects of their nursing care.'

In 1991, the Patient's Charter introduced the concept of the named nurse (UK, Department of Health, 1991) whereby one qualified nurse is responsible for the care of particular patients. This development is associated with the rapid growth in the use of primary nursing as the principal form of ward organisation in many areas of the United Kingdom. In this form of organisation the patient is allocated to a named 'primary' nurse, who is responsible for assessing, planning, and evaluating care but may not necessarily carry out the prescribed care. In association with each primary nurse there is usually also a 'secondary' or 'associate' nurse to share the responsibility when the primary nurse is off-duty. The primary nurse is both accountable and responsible for their patients, and the care they receive, for the complete duration of their stay.

It would also seem that some wards do not fit neatly into any single category of organisation, that is, the organisation seems to consist of components of different organisational modes, or, may even move between different modes at different times (Thomas & Bond, 1990).

Most, if not all, wards could describe their system of organisation in one of the terms depicted briefly above i.e., patient allocation, team nursing, or even primary nursing (Heath, 1995). However, it may be the case that, how a ward describes its organisation, and how in practice it actually organises the nursing care for patients, may not be the same. A further consideration is that, regardless of how the ward is formally organised, the individual nurse may organise his or her own case-load in a different manner.

In summary, a number of different forms of ward organisation are possible, each involving varying levels of autonomy and responsibility in respect of caring for patients. These different levels of autonomy and responsibility are likely to have an effect on the nurse's freedom to set priorities of care.

1.2.2 The Nursing Process

The nursing process, with its structure of assessment, planning, implementation and evaluation, is the principal framework around which the organisation and delivery of nursing care takes place (Heath, 1995; Leddy, 1998; Roper, Logan, & Tierney, 1999). However, Taylor (2000) states that although the nursing process is a valuable tool in clinical nursing, it is essentially used to plan care-giving activities and is a different process from the one in use during the provision of care. Nevertheless, the nursing process provides a systematic framework within which most, if not all care is provided, and as such will impact upon priority setting.

1.2.3 Philosophies, Theories and Models of Nursing

Orme & Maggs (1993) propose that a major factor in effective decision-making is a clearly defined philosophy of care. The term 'philosophy' within nursing, has come to be used in an everyday sense by clinical nurses to refer to an ideal statement of values, beliefs and aims regarding what nurses and nursing are trying to achieve in a particular clinical area (Romhanyi, 1990; Dunwell & Hanson, 1998). Such a philosophy may be formal or informal; it may be constructed at the level of the institution or the individual.

One example of such a philosophy that may have an impact on priority setting is the ward or unit philosophy where the nurse works. A further influencing philosophy may of course be the personal philosophy subscribed to by the nurse. These 'philosophies' together with others, such as those of the organisations that employ and regulate nurses and nursing, as well as the prevailing philosophy held by the profession as a whole, will all undoubtedly have an influence on each practitioner (Hall, 1990).

A further influence upon nursing practice will be the predominant theories and models of nursing to which the individual nurse, and the area in which he or she works, subscribe (Marriner-Tomey, 1998). Theories of nursing, such as the work of Peplau, Rogers, Orem, Roy, and Benner and Wrubel, help to guide nurses in their practice, because they lead to the nurse having a particular view of the world of nursing, and how they should interact with this world (Barnum, 1998). Growing out of theories of nursing, nursing models provide frameworks and direction for the provision of clinical nursing care (Pearson, Vaughan, & Fitzgerald, 1996).

In summary, the context within which a nurse will set patient care priorities will inevitably be, at least in part, determined by type of organisation, ways of working, as well as philosophies, theories and models of care. These can impact at both the level of the individual as well as at the level of the ward, unit or even hospital in which an individual nurse works.

1.3 *Priority Setting*

This section will explore a number of definitions of priority and priority setting as the terms are used within nursing practice. The place and nature of priority setting, as it is currently understood within the context of nursing practice, will then be considered.

1.3.1 What is Priority Setting?

Before proceeding further it is important to consider what is meant by a 'priority' and by the term 'setting priorities.'

The everyday use of the term 'priority' generally refers to the notion of having precedence in rank, importance, or time, something that requires or merits attention before some competing alternative(s) (Gove, 1971; Allen, 1990). Setting priorities, then, is the action of assigning such precedence.

Fonteyn (1998, pg.28) defines setting priorities in nursing as

'ordering concepts in terms of importance or urgency.'

She suggests that nurses use the strategy of priority setting in relation to two distinct areas, namely 'plans of action' and 'clients concerns.'

For Kron & Durbin (1981) prioritising is focussed upon identifying what problems exist that are amenable to solution. The nurse must assign an order of importance to those problems, determining what is most important (Potter & Perry, 1993), and what has to be done or decided before moving on to other work. Similarly, Bailey & Claus (1975) also suggest that in determining priorities it is necessary to rank in order of importance the objectives of a patient care plan.

Kozier, Erb, Blais, Wilkinson, & Van Leuven (1998) provide a slightly different slant when she suggests that priority setting is the process of establishing a preferential order for nursing strategies. However, it must surely be possible to indicate a preference without that preference necessarily representing the most important problem or concern.

For others, priority setting means identifying, ranking and ordering of problems and concerns into those that require immediate actions and responses, and those that can be delayed until a later time (Leahy, 1998; Alfaro-LeFevre, 1999).

To summarise then, priority setting by nurses in clinical practice can be seen to be the ordering of nursing problems, using notions of urgency and/or importance, in order to establish a preferential order for nursing actions. However, a note of caution should be expressed in that, to date, no empirical work regarding nurse priority setting in clinical practice appears to have been conducted.

1.3.2 Setting Priorities: A Form of Decision-making?

What is priority setting? In theory, priority setting involves making decisions about the significance of patient problems and needs, and about the actions that should be made in response. If this is so, then priority setting is a type of decision-making. The term decision-making is frequently poorly defined, and it is often used interchangeably with a number of other related terms such as problem-solving, clinical judgement, and diagnostic reasoning (Offredy, 2000). This general imprecision in the use of terms can lead to difficulties for a researcher attempting to explore a topic systematically, especially in relation to conducting thorough reviews of the pertinent literature.

In order to facilitate a comprehensive review of the literature in respect of priority setting, the term ‘decision-making’ was explored using the thesaurus function of the Cumulative Index of Nursing and Allied Health Literature database (CINAHL). This function identifies the standard terms and their definitions used by that database. It allows the identification of synonyms and related terms thus permitting the creation of a network of terms used by the database around a central concept. Figure 1-1 shows the relationship between the term decision-making and other related terms. The stem from which this and all other related terms arise is that of ‘thinking.’ CINAHL does not itself define this term, but ‘thinking’ leads to a number of terms that do contain helpful definitions. Nowhere in this network is the term ‘priority setting’ or any related term to be found.

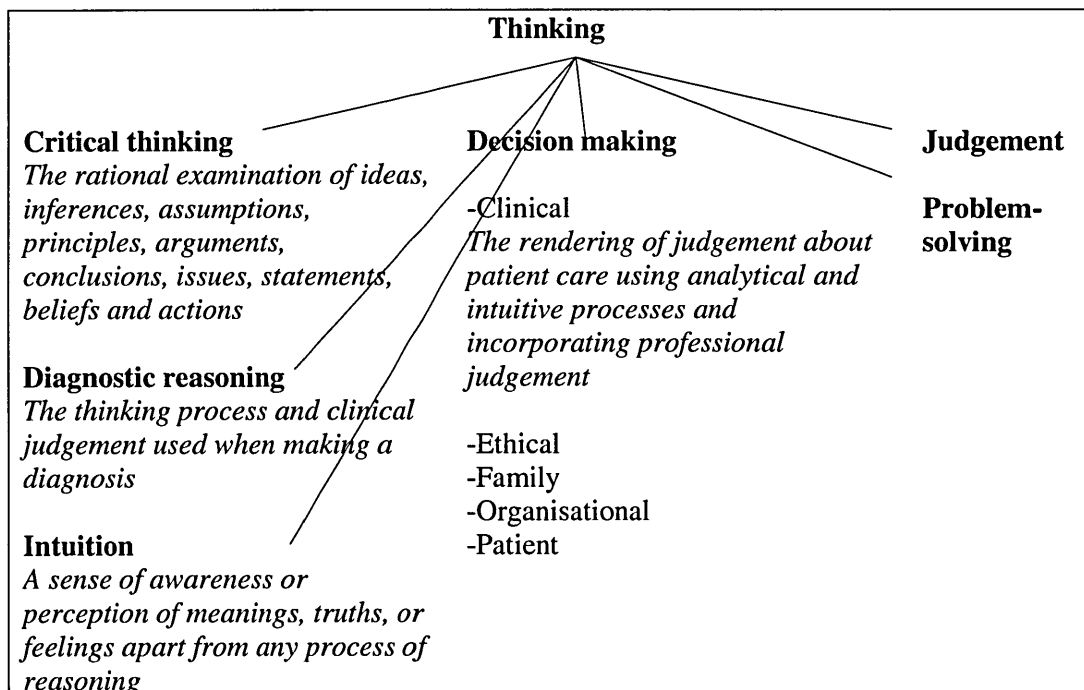


Figure 1-1: Terms associated with ‘decision making’ and their CINAHL definitions (where provided)

Clearly, priority setting requires cognitive activity, and therefore it would seem appropriate to include it within this framework, as a subset of the term ‘thinking.’ Priority setting in nursing practice would also seem to be related to problem-solving and clinical decision-making. Furthermore, related fields such as judgement, critical thinking, diagnostic reasoning and intuition are also likely to be related to priority setting. Figure 1-2 proposes priority setting as a subset of clinical decision-making and problem-solving, and suggests a working definition of priority setting derived from section 1.3.1.

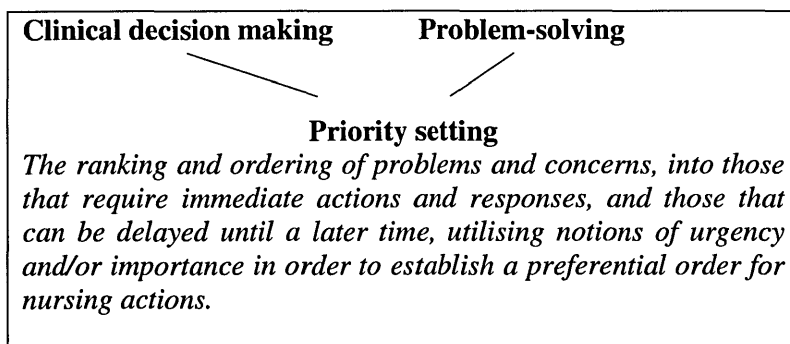


Figure 1-2: Definition of priority setting

1.3.3 The Nature of Prioritising Care

In this section the place of priority setting in nursing will be considered. Firstly, the relationship between priority setting and planning will be explored, prior to exploring what it is that may be happening when a nurse prioritises care.

Priority setting can be seen as an essential element of planning (MacStravic, 1978; Kron & Durbin, 1981; S. A. Corcoran, 1986b, 1986a; Kron & Gray, 1987; Long & Phipps, 1989; Lewis & Collier, 1992; Royle & Walsh, 1992; Potter & Perry, 1993; Christensen, 1995; Long, 1995; Rubenfeld & Scheffer, 1995; McCash, 1996; Potter & Perry, 1997; Walsh, 1997; Kozier et al., 1998). Planning requires critical thinking, decision-making and problem-solving (Christensen, 1995). It is clear that in delivering care for a group of patients, demand for such care may often exceed the resources available to the nurse to provide that care. In these circumstances the nurse will not be able to do everything that they would like to do for the patient, or indeed everything that should be done for them. At times of crisis this may even include the essential elements of patient care (Kron & Durbin, 1981; Kron & Gray, 1987).

Priorities of care are established to identify the order in which nursing interventions will be provided when an individual has multiple problems (Carpenito, 1989; Royle & Walsh, 1992; Carpenito, 1997). Indeed, as the care of patients becomes more complex, planning becomes more important (Kron & Durbin, 1981). Priorities are set to provide direction for nursing interventions (Walsh, 1997). Failure to plan adequately, including setting priorities, can result in confusion, disorganisation and poor patient care, with potentially severe consequences for the patient (Bailey & Claus, 1975; Kron & Durbin, 1981; Alfaro-LeFevre, 1999).

For Rubenfeld & Scheffer (1995) setting priorities is the way nurses and patients make the best use of their time, energy and health care dollars. They go on to suggest that it is not only during planning that nurses set priorities but also during many aspects of care, however, they do not explore this further.

It is interesting to note that the importance of priority setting in nursing practice has been identified in the literature for at least the last twenty-five years, however, none of the body of literature reviewed demonstrates any empirical basis for claims regarding either the nature of priority setting in nursing, or the use of appropriate strategies to guide its use. It is this lack of such an empirical basis that led to the current study.

What does planning for patient care involve, with particular reference to setting priorities? Several authors suggest that planning requires a series of discrete steps or stages. Table 1-1 outlines the proposed stages of planning as described by a number of authors.

<i>(Kron & Durbin, 1981; Kron & Gray, 1987)</i>	<i>(Christensen, 1995)</i>	<i>(Long, 1995)</i>	<i>(Walsh, 1997)</i>	<i>(Kozier et al., 1998)</i>
Assign priorities after problem diagnosis	Judging priorities	Setting priorities after problem identification	Set priorities	Setting priorities
Decide objectives/outcomes for nursing assistance	Establish long term outcomes Establish short-term outcomes Identify strategies	Determine goals of care for each problem	Establish goals Identify intervention strategies Weigh alternate actions and predict outcomes	Establish client goals/expected outcomes Selecting nursing strategies
Select specific actions to achieve outcomes	Specify nursing orders for implementation	Select specific nursing actions	Determine nursing interventions	Develop care plans
Record information on care plan			Write care plan	

Table 1-1: Stages of planning

These planning stages include a number of common features. All assume that the nurse has already identified patients' problems, and that priorities have been set regarding these problems. Furthermore, goals or outcomes are identified prior to selecting or specifying those particular nursing actions necessary to achieve the stated goals.

It can also be seen that Walsh (1997) is alone in identifying the need to consider and choose from among alternative courses of action. Finally, it is perhaps surprising to see only Kron & Durbin (1981); Kron & Gray (1987) and Walsh (1997) identifying the need to develop a written plan of care.

However, these planning stages fail to include the prioritising of those nursing strategies and interventions that have been selected subsequent to the determination of desired patient outcomes. Early in the planning process it is important to identify and prioritise a

patient's main problems at a global level. However, it must also be necessary to prioritise those specific strategies and interventions that will be employed in order to help the patient achieve their desired goals and outcomes. That is, once goals have been identified and appropriate interventions selected, it must then be necessary to impose a temporal structure upon the care plan(s) prior to their implementation.

1.3.4 Classifying Priorities

In order to provide effective nursing care, it is necessary for the nurse to classify, or categorise, the care priorities that have been identified. For Lewis & Collier (1992) the nurse must decide on the urgency of intervention needed. By this is meant that nursing diagnoses of the highest priority are those that require immediate intervention, however, those that can be dealt with at a later time can be assigned a lower priority. In this way, the sorting of priorities allows the nurse to impose a temporal structure on the patient care plan. Adair (1987) also suggests prioritising using the notion of urgency, however, in addition he further distinguishes priorities by their importance. In this way priorities can be described as urgent, important, or urgent and important.

Priorities may be classed as high, intermediate, or low (Potter & Perry, 1993, 1997). Intermediate priority nursing diagnoses involve non-emergency, non-life threatening needs of the patient. Low priority nursing diagnoses are client needs that may not be directly related to a specific illness or prognosis.

Gordon (1987, 1994) suggest that those nursing diagnoses, which, if left untreated, could cause harm, should have the highest priority. These nursing diagnoses may include psychological as well as physiological dimensions. Furthermore, priorities can change as the patient's level of wellness changes (Lewis & Collier, 1992; McCash, 1996). Gordon also proposes that priorities depend upon the urgency of the problem, the nature of the treatment indicated and the interactions among the diagnoses. McCash (1996) also proposes that the nurse must decide priorities on the basis of urgency. Furthermore, she suggests using the patient's perception of what is important.

Kron & Gray (1987) recommend that the nurse must first determine which problems can be resolved, and then assign an order of importance to those problems. It makes little sense to waste valuable time, effort and resources trying to resolve patient care problems that are not amenable to solution. Furthermore, this effort, wrongly focussed, may preclude the nurse from attending to problems that the nurse can do something about. They further suggest that, when organising and managing care for a number of patients,

it is essential that the nurse determine which care or nursing activities are most important. This is necessary if patients are to receive the care most important to them at the proper time, and in the most effective way.

Instead of rank ordering diagnoses, nurses could group them as having high, medium or low priority (Kozier et al., 1998), i.e., high – life-threatening, medium – health threatening, low – arises from normal developmental needs or requires only minimal support. Kozier emphasises the point that priorities do not remain fixed but rather are amenable to change as the patient's condition and the current situation change.

McCash (1996) and Walsh (1997) state that emergency and life-threatening situations readily dictate those priorities that require the immediate response of ABC (Airway, Breathing, Circulation).

For Chandler (1991) and Leahy (1998) priority setting means deciding which needs or problems require immediate actions and which can be delayed until a later time because they are not urgent. Leahy suggests that one possible tool to assist in the priority setting process is to use Christensen's guidelines (Christensen, 1995).

Bailey & Claus (1975) identify a two-point classification system of priorities -

1. Those that are absolutely critical or essential to the welfare or purposes of the organisation or person at that time, and
2. those that are nonessential but desired.

In this system, objectives can be classified as –‘musts’ and ‘wants.’ The former are the critical objectives, and set maximum and minimum limits on critical resources and required results. The latter are non-critical and express relative desirability but do not define absolute limits.

Garratt (1985), Bittel (1991), Mackenzie & Mackenzie (1995) and Moon (1998) all suggest that the key criteria to apply in classifying priorities are those of importance and urgency. Fontana (1993) adopts a similar approach indicating that there are three kinds of priority, that is, priorities of time, of importance, and of both time and importance. Moon also indicates that people do not always adopt an entirely rational or logical approach to priority setting, often being influenced by factors such as who is making the request, how demanding they are, what power they have over us, and how we feel towards them. The effect upon prioritisation of who was making the request was also

highlighted by Bowers, Lauring, & Jacobson (2001). In this it is possible to see the beginnings of the notion that the setting of priorities is not as straightforward as simply identifying the most important or most urgent action.

To summarise then, a number of different approaches can be taken to classifying priorities. The practitioner may consider factors of urgency or immediacy. The nurse may review the relative importance of identified goals classifying them as being of high, intermediate or low importance. Priorities may be classified according to whether the nurse is confronted by an emergency or life-threatening situation or one that includes the potential for harm, as opposed to a non-emergency or non-life threatening one. They may be determined by the extent that they are seen as essential to the welfare or purposes of the organisation or person. Finally, priorities can only be set in respect of problems that are capable of resolution.

1.3.5 Strategies for Setting Priorities

The literature suggests a number of strategies and guidelines for setting priorities. In this section an overview of these will be given. One particular strategy for prioritising patient care will be mentioned briefly here. Triage is the sorting of patients for treatment on the basis of their need for treatment and available resources. It is principally a method of assessing patients and prioritising treatment in Accident and Emergency centres, usually carried out by an experienced nurse (Woolwich, 2000). It is also used to decide on the most appropriate course of action at the site of a major incident. Triage is a specialised form of priority setting aimed at ensuring appropriate medical treatment and will therefore not be considered further here.

1.3.5.1 Priority Setting by Mutual Agreement

A number of authors identify a strategy that could be called priority setting by mutual agreement. Here the nurse and patient discuss and reach agreement about what the most significant problems are, and assign these the highest priority. If the patient's condition does not permit their participation in this process then it may be appropriate for a member of their family to represent them (Feldman et al., 1983; Kron & Gray, 1987; Potter & Perry, 1993; Rubinfeld & Scheffer, 1995; Potter & Perry, 1997; Walsh, 1997).

The involvement of the patient and family in priority setting is assumed to lessen conflict and enhance active co-operation in care activities (Royle & Walsh, 1992; Walsh, 1997). Indeed, the involvement of patients in their care improves outcomes

(Neistadt, 1995). Communicating the reasons for priorities is thought to help in establishing mutual goals, whereas the failure to consider what is important to the patient may create conflict and delay in achieving health goals.

However, consulting with, and taking cognisance of the wishes of the patient and their significant others, does not relieve the nurse of their responsibility to act in the patient's best interests (UKCC, 1992). The nurse assigns priorities on the basis of nursing judgement (Kozier et al., 1998). In those situations where the nurse and patient assign different priority rankings to the nursing diagnoses, then the nurse will need to assume responsibility for setting priorities where the client's physiological and emotional needs are at stake (Potter & Perry, 1993, 1997).

1.3.5.2 Priority Setting Frameworks

Rubinfeld & Scheffer (1995) state that setting priorities is no simple task because there are so many things that are unique to each patient and situation. In order to set the best priorities the nurse must blend a standard system of establishing priorities with an overview of each individual patient's situation. Setting priorities must take into account the patient as a whole person, not just as a list of problems.

A number of authors propose frameworks and guidelines for doing this, suggesting that using such frameworks will make priority setting easier. Predominant amongst them are strategies based upon the work of Abraham Maslow, often described as the basic needs approach (Feldman et al., 1983; Long & Phipps, 1989; Lewis & Collier, 1992; Royle & Walsh, 1992; Potter & Perry, 1993; Long, 1995; Rubinfeld & Scheffer, 1995; McCash, 1996; Potter & Perry, 1997; Kozier et al., 1998). However, Royle & Walsh (1992) suggest that there is no one tool or framework available that assists in making decisions on priorities of care in all situations. Emergency and life-threatening circumstances readily dictate priorities for intervention, whereas, other situations may require different considerations. Maslow's framework, which presents an ordered classification of human needs, may be used to rank patient problems. Lawler (1983) however, cautions against the use of Maslow's framework in nursing. She suggests that there are major flaws in Maslow's theory, which principally lie in his method of inquiry and biased sampling. Furthermore, she suggests that in any case, as Maslow's theory fails to recognise the individuality of each person, it is inappropriate for a profession that espouses a philosophy in which each person is valued as an individual.

It is important to note that concurrent action is possible; in setting priorities it is not necessary that one concern be resolved before moving on to the next (Lewis & Collier, 1992; Christensen, 1995). Interestingly, Christensen (1995) also indicates that formerly, plans were normally based upon the patients' medical diagnoses. In this model the nurse's role is not one of autonomous professional but rather it is one in which the nurse completes tasks assigned by a medical practitioner. However, she suggests that nursing care plans today may still reflect the patient's medical problems but also equally address nursing concerns. This view is supported by Field (1987).

A number of authors suggest general guidelines to assist the nurse with priority setting, and these are illustrated in table 1-2.

<i>(Kron & Durbin, 1981; Kron & Gray, 1987)</i>	<i>(Christensen, 1995)</i>	<i>(Long, 1995)</i>	<i>(Rubinfeld & Scheffer, 1995)</i>	<i>(Alfaro-LeFevre, 1999)</i>
Problems related to basic survival and safety come first - the more life-threatening the problem the higher its priority must be.	Actual or imminent life threatening concerns are considered before health threatening concerns.	Immediate life-threatening problems.	Life-threatening issues.	First-level or immediate priorities such as ABC's, vital signs.
		Physiological or psychological threats for which the person is at high risk.		Second-level priority problems - these include mental status changes, acute pain, acute urinary elimination problems, and untreated medical problems requiring immediate attention.
		Physiological or psychological threats for which the person is at low risk.		
		Health maintenance needs.		Third level – health problems that don't fit into above categories.
	Temporal, human and material resources are examined deliberately.		Safety issues.	
Actual needs and problems with which the patient or their family has requested help come next.	Patient is involved in determining priority concerns.		Patient-identified priorities.	
Nurse identified needs and problems, which may have serious implications for the patient, come next. They may take precedence over those in 2 above.			Nurse-identified priorities.	
Actual needs and problems with which the patient or their family may want or need some assistance in the future follow.				
	Scientific and practice principles provide rationale for decisions.			

Table 1-2: Priority setting guidelines

For Long & Phipps (1989) and Long (1995), priority setting does not mean numbering each problem from 1 to N in order of importance, but rather the most important problems are selected to be principally addressed. Long et al's distinction between these two positions seems confused. How can a nurse select the most important nursing problem to attend to if they have not at least made relative judgements between a set of nursing problems? Furthermore, how can they go on to make decisions regarding what to do when, if they have not placed these relative judgements into some sort of order? Unfortunately, this distinction between numbering the most important items, and selecting those to be principally addressed, is not illustrated with an example, and it is difficult therefore to be sure what they mean by this.

In contrast, Potter & Perry (1993, 1997) suggest that nurses establish priorities among the diagnoses by ranking them in order of importance, however they indicate that establishing priorities is not merely a matter of numbering the nursing diagnosis on the basis of severity or physiological importance. However, once again the reader is left to determine what else is involved in setting priorities, as this distinction is not explored further.

Alfaro-LeFevre (1999) states that it is an important aid to clinical judgement that the nurse determine a strategy that helps them to make a decision about what must be done now, and what can wait until later. She proposes that it is essential to assign management of causes of problems a high priority. Problems may have a cascade like effect, with a single problem contributing to, or causing several more problems, and so on. In order to break into this cycle of decline, it is therefore important to place a high priority on problems that contribute to, or cause other problems.

Kron & Durbin (1981) and Kron & Gray (1987) propose that the nurse should determine the priorities of problems and then work only with those three or four most important ones first, whereas Lewis & Collier (1992), suggest that when setting priorities, nurses should first intervene for life-threatening problems. Then the nurse may use several guidelines to assist in priority setting.

It can be seen then, that in setting priorities, a number of different approaches have been proposed. Firstly, priorities can be determined by negotiation and agreement with patients themselves or with their significant other. Furthermore, the use of an established hierarchy of needs such as that described by Maslow may be used to identify priorities of care. Alternatively, other frameworks or strategies for making such judgements can

be used. All such frameworks reviewed here, identified life-threatening problems as assuming the highest priority. Most also suggest giving a high weighting to priorities identified by the patient.

1.3.6 Factors Affecting Priority Setting

It is clear from the literature that a number of factors may directly, or indirectly, affect the priorities determined by the nurse.

Royle & Walsh (1992) and Walsh (1997) propose that setting priorities requires the application of knowledge, experience, and, in some critical situations, intuition. Related to this is the nurse's level of proficiency (Christensen, 1995). Kron & Gray (1987) also identifies the nurse's knowledge and understanding of the physiologic and behavioural sciences as being an important factor. Furthermore, it must be remembered that the nurse does not practice in a social vacuum, and therefore nursing care standards, local and national guidelines, policies, procedures, laws and regulations can all have an influence on how the nurse determines, and sets, priorities of patient care (Feldman et al., 1983; Kron & Gray, 1987; Christensen, 1995).

Kron & Gray (1987), Rubenfeld & Scheffer (1995), Kozier et al. (1998) and Bowers et al. (2001) suggest that a key element to affect priority setting is the availability of time and other resources, such as number of staff and their capabilities, availability of equipment, and the philosophy and aims of the organisation.

As indicated previously, the patients' values and priorities, the urgency of the health problem, and the medical treatment plan, may all have an impact on the priority setting process. Furthermore, the acuity of the patient's condition will also have an impact upon which priorities are assigned a high ranking (Kron & Gray, 1987)

Finally, the number of problems each patient has, and the number of patients that make up the nurse's case-load, are also likely to be a significant factors in determining priorities of care. Identifying problems does not necessarily imply that the nurse is in a position to be able to treat them all (Potter & Perry, 1997). The factors suggested here might not be exhaustive, and neither is there any indication of the extent of their effect on determining priorities.

1.3.7 Priority Setting: A Key Skill for Nursing?

How significant a skill is priority setting for nurses in providing patient care? It is possible to argue that some aspects of patient care provided by nurses do *need* to be done before other things; for example, a patient who has been incontinent *needs* to be attended to before someone who requires a wash simply to ‘freshen’ them up. However, the question arises of what exactly constitutes a need. Furthermore, it is also likely that nurses and patients may not always agree as to what their needs are. Additionally, it is also possible that nurses would agree, in principle, that some aspects of patient care require, or ought to be attended to before others, but it is not altogether certain that nurses would agree as to which aspects of care these would be. Matters may be further complicated because there would not necessarily be agreement between doctors and nurses, or between nurses and relatives, as to the patient’s greatest needs.

Accepting that patients have a variety of different needs, and that some of these may take precedence over others, inevitably leads to the conclusion that the nurse must prioritise the care that he or she provides for the patients in his or her care. The researcher’s previous experience, and feedback provided by students and their preceptors through clinical assessments, seems to suggest that students, especially the most junior, appear, at least at times, to be at a loss as to how to carry out this prioritisation. The impression given is that they will often resort to simply carrying out the first piece of care that they stumble across, or they will respond to whomsoever makes the loudest or most recent plea. Discussion with the researcher’s academic and senior clinical colleagues provided support for this initial impression.

Benner (1984, pg. 146) who describes expert nurses as having the ability to *‘juggle and integrate multiple patient requests and care needs...’* provides some support for this suggestion. The implication of Benner’s observation being that, nurses who have not yet attained the rank of ‘expert’ are less able to deal with multiple patient care requests. She also goes on to suggest that experienced nurses will restructure priorities in the face of a dynamic and fluid patient care situation. Benner (1982) also indicates that the difficulty of those who are inexperienced in nursing is that they treat all attributes and aspects of a patient care situation as equally important. These inexperienced nurses, novices or advanced beginners in Benner’s classification (Appendix I), need help in setting priorities, since they operate on general guidelines and are only beginning to perceive recurrent meaningful patterns in their clinical practice.

The judgements that nursing students make in respect of setting priorities may be labelled as 'wrong' by more experienced staff. Decisions and judgements perceived as wrong by senior nurses may result in a reprimand, or poor clinical assessment. If so, learners may be made to feel that they are inefficient, uncaring, or even incompetent. Do nursing students recognise in themselves an inability to successfully co-ordinate and organise patient care, that is, set priorities, and are the judgements they make, any less 'correct' than those of experienced professional nurses? Once again evidence from students' clinical assessments will, on occasion, suggest that some learners recognise the need to develop priority setting skill. Greenwood & Winifreyda (1995) also support this view that student nurses lack prioritising skills, suggesting that there is evidence that nursing students within Australian pre-registration nurse education have poor prioritising skills. Brown & Wilson (1987) state that exerting control over schedules is a skill that does not come easily to most nurses. Furthermore, unless the activities of the day are prioritised, time will be ill spent.

It is possible to see how 'incorrect' decisions and judgements about patient care priorities may have serious implications for patients. If a nurse decides, for example, not to attend to a patient who appears to be agitated and unable to rest (a possible indication of pain), in favour of cleaning another patient's dentures, then it is possible that the first patient may not receive essential treatment at the point when it is likely to have a beneficial, even life-saving, effect. What seems blatantly obvious to an experienced nurse might escape the attention of the inexperienced.

Benner (1984) further seems to suggest that as they progress through their training, and later, as they progress through their professional life, a nurse's ability to make 'correct', 'efficient', or 'safe' judgements about the priority in which to administer patient care improves, often to the point at which they are no longer aware they are making these judgements. She also suggests that if you were to question nurses as to why they carried out a particular sequence of care for a group of patients, then it may be that they would find it hard to verbalise this. However, she offers no empirical evidence to support this suggestion.

Alfaro-LeFevre (1999) proposes three reasons why prioritisation is important -

1. Delays can lead to severe consequences for patients.
2. By identifying relationships between problems and treating the ones that are contributing to other problems nurses can avoid the quick fix and develop a safe effective plan, that is more likely to achieve long term beneficial results.
3. If equal attention is given to major and minor problems, nurses may not be able to devote the time they need to resolving the problems that must be addressed to meet overall outcomes.

Carnevali & Thomas (1993) describe how setting priorities assists nurses in deciding how to proceed in a given client situation. Similarly, Fonteyn (1998) suggests that when faced with a clinical dilemma, a nurse's thinking focuses on finding a way to resolve the dilemma, including deciding a plan of action. Since they cannot do everything at once they *set priorities*. Aradine & Deynes (1972) in a qualitative study of the activities and pressures of clinical nurse specialists noted that one of the most frequently cited pressures was difficulty in setting priorities.

In a study looking at decision making in critical care areas, it was demonstrated that although nurses showed some flexibility in the priority they assigned in response to a cardiac case study, key decisions were all made within a common time frame (Baumann & Bourbonnais, 1982). This finding suggests that there may not be only one correct sequence of priorities in response to a specific case-load, but rather there is a correct set of high priority tasks that should be completed within a determined period of time. Baumann and Bourbonnais also demonstrated that nurses based decisions on patient problems rather than medical diagnosis.

Pless & Clayton (1993, pg. 427) highlights the difficulties faced by nurses in practice –

'Nurses face complex patient care situations on a daily basis that are often difficult to manage. They are not clean, well-delineated case study situations presented in academia; they are the messy, practical situations that sometimes present as crises. In reality, situations often occur as a hodgepodge of contextual factors rather than as a specific problem that can be solved in a linear fashion. The first and often most difficult step is sorting out and prioritising variables to determine if a problem even exists.'

It was suggested above, that experienced nurses are able to successfully prioritise, apparently with few errors, and without consciously giving the process any conscious thought. This raises the question of what nurses are doing when they prioritise patient care. One possibility is that they may rank the patient according to severity of medical disorder. That is, they may assign a value to their illness and their physical condition, and then use this value in order to prioritise patient care.

Alternatively, they may rank the patient's needs according to an assessment of nursing need. This would require nurses to identify and separate out those specifically nursing problems, and then assign a value to these as above, using this value in order to prioritise patient care. A further possibility is that nurses use a combination of medical and nursing frameworks to decide upon the priority that they will give to the patients under their care.

Nurses may care first for those patients they like best, or least. Much has been written, over a lengthy period, about the effect of being seen as 'popular' or 'good' patient versus 'unpopular' or 'demanding' on nurse-patient interaction (Stockwell, 1972; Lorber, 1975; Kelly & May, 1982; Roberts, 1984; Podrasky & Sexton, 1988; Johnson & Webb, 1995; Nolan, Grant, & Nolan, 1995). One possible response of nurses to those patients whom they see as difficult or demanding is to avoid such patients, with the converse being true for patients that they like or find attractive. What is not clear, is the extent to which this factor may influence the process of prioritisation of care, however it seems consistent with the existing literature to assume that it will have some effect.

Perhaps one of the most intriguing aspects of this, from an educational perspective is, how do nursing students become skilled at setting patient care priorities, particularly when caring for more than one patient? Fonteyn & Flaig Cooper (1994) states that as nurses' problem-solving processes are poorly understood, it makes teaching them to nursing students problematic. By trying to understand what these processes are, i.e., what nurses do when they set priorities for a group of patients allocated to their care, then it may be possible to better prepare nurses for this aspect of their role. Furthermore it may be possible to help qualified nurses to make decisions more efficiently, and in a way that is maximally beneficial to the patients under their care.

Nursing, and learning to nurse, is associated with stress and distress, and a number of strategies have been described to help nurses cope with the resulting stress (Jones & Johnston, 1997, 2000a, 2000b). Kahn & Cooper (1990) in a study looking at

occupational stress in those working in the financial markets found that the use of prioritising and planning work as coping strategies were both associated with job satisfaction and mental health.

In conclusion, priority setting is an important attribute of professional and skilled nursing. It is necessary for both patient care and also for the well-being of the practitioner. However, what appears to be lacking from the literature is an evidence base that underpins practice in relation to this particular skill. Numerous authors highlight the key role that priority setting has in caring for patients. What is now needed is research into this particular strand of clinical decision making.

1.4 Novices and Experts

The successful transition from junior student nurse to qualified professional nurse requires the development of an adequate knowledge base, and exposure to a range of clinical placements (Marsden, 1999; UKCC, 1999). In the course of the student nurse's training it is assumed that these will lead to improvement in a wide range of skills, both cognitive and psychomotor (UKCC, 1986).

In this section the concepts of experience, expertise, novice and expert will be explored. How these concepts are used within the context of nursing will be considered prior to a review of the more general literature. The section will conclude with a consideration of some of the inherent difficulties in the use of the terms 'novice' and 'expert.'

1.4.1 Novices and Experts in the Nursing Literature

There is a wealth of literature that examines novice-expert differences in a range of clinical settings, domains of expertise, or in relation to specific activities. It is not the intention in this section to undertake a comprehensive review of all of the literature in nursing that touches upon expertise or novice/expert practice. Rather, the researcher will attempt to identify some of the predominant perspectives represented in the literature.

Clinical decision-making and expert practice have been studied from two major, but contrasting, theoretical perspectives: the phenomenological perspective and the rationalist (Harbison, 1991; dela Cruz, 1994).

Phenomenological perspective

In particular, the work of Patricia Benner has been predominant in the literature regarding novice/expert practice in nursing. Gatley (1992) notes that the work of Benner and others, (Benner & Wrubel 1982; Benner 1984; Benner & Tanner 1987 and Benner, Tanner, & Chesla 1992), in which skill is described as progressing along a continuum from novice to expert, has had a growing influence in the final two decades of the twentieth century.

For Benner (1984), the key to being an expert lies in the exposure to experiences that enable the nurse to develop an intuitive grasp of the situation. Experience thus permits the expert to 'see' the world in a different way from the novice, with a greatly heightened perceptual awareness (Benner et al., 1992). Benner (1982) also suggests that advanced beginners perceive clinical situations as they appear in the immediate present. Similarly, Benner & Tanner (1987) state that experts see a relevance in their observations that eludes the less experienced. One could regard novices and advanced beginners as 'here and now' people, bound to respond to the vagaries of the moment. Benner also describes skill acquisition as gaining an increasingly differentiated world of judgement, perceptions and distinctions of worth or goods (Benner, 1982).

Experience can be defined as the transformation of preconceived notions and expectations, by means of encounters with actual practice situations (Benner & Wrubel, 1982). If these encounters do not occur in a way that leads to some change on the part of the nurse then experience has not been gained. Experience is necessary for moving from one level of expertise to another. It is also necessary in order to develop the perceptual grasp of an expert clinician. It is through the interaction between the nurse and the experience, in a given context or domain, that one becomes expert. This distinction between 'becoming expert' and 'becoming an expert' appears to be a crucial one in Benner's eyes. So, for Benner, the development of expertise is negotiated through experience, although this is not simply the passage of time. Lamond & Farnell (1998) suggest that it may take as long as 10 years to become an expert, and emphasises the importance of examining expertise within the context of a specific domain. Benner's view of experience and expertise is not, however, without its critics (English, 1993; Cash, 1995).

Crow & Spicer (1995) supports the work of Benner and others, who see experts as being characterised by the ability to grasp a situation as a whole. However, they appears to be reluctant to adopt the predominant description of this as intuition, and suggests that nursing judgement is probably based upon a well-developed process of categorisation

acquired through clinical experience. In a similar vein, Offredy (1998) suggests that 'intuition' involves drawing upon experience and linking perceptions from the past with an anticipated future. English (1993) is further concerned about the apparent central role of intuition in Benner's view of expertise. He sees the concept of intuition as a defining characteristic of experts, as being somewhat ambiguous. Hams (1998) too, is sceptical of the value of relying too much on intuition as the hallmark of expertise when the nursing profession is attempting to establish itself as an 'evidence-based' profession.

However, for Davis & Burnard (1992) the key question is not so much about becoming an expert *per se*, but rather it is one of engaging in a cyclical process of developing expertise in particular aspects of practice. Cash (1995) criticises Benner on a number of fronts. Firstly, he notes that Benner appears to contradict herself by stating that the label 'expert' cannot be attached to a person, as it is the context within which expertise occurs that is important. Later, however, Benner goes on to say that the individual expert is characterised by a specific way of thinking. This debate, or distinction, between having expertise, and being an expert appears, to be particularly strong. Cash also raises a methodological concern in respect of Benner's use of expert panels to determine or identify other experts, suggesting that this is an example of a problem of infinite regress. Conway (1998) also suggests that the first problem in studying expert practice is identifying experts and in her study used peer review. In Conway's view, identifying experts is likely to be a subjective process, reflecting the norms and values held within the organisation, rather than anything more real. Cash, for his part, sees the concept of expertise as completely arbitrary, legitimated by groups or individuals whose status is defined socially. He also challenges one of Benner's fundamental premises in questioning whether it is only the expert who thinks intuitively.

English (1993) is strongly critical of Benner, stating that she describes aspects of expertise but fails to clearly define expertise itself. He further criticises Benner for not studying negative incidents, nor examining non-experts for evidence of intuitive judgements. Farrington (1993) also highlights the difficulties in relying upon exemplars and paradigm cases in drawing conclusions about expert practice, suggesting that it is also necessary to look at mistakes and errors in judgement.

Finally, Jasper (1994) hints at the overuse of the term 'expert' in the literature, stating that it has been somewhat fashionable to use the term, and that in any case, it is poorly defined in the existing literature, lacking a common definition. Using concept analysis, Jasper identifies the defining attributes of an expert as having –

1. Possession of a specialised body of knowledge or skill.
2. Extensive experience in a field of practice.
3. Highly developed levels of pattern recognition.
4. Acknowledgement by others.

Benner's approach to the study of novice/expert practice has been a phenomenological one, and she suggests that information processing theory and statistical decision theories are not helpful in understanding expert clinical practice (Benner & Tanner, 1987). However, others including Gordon (1980); S. Corcoran (1986) and S. A. Corcoran (1986a) believe these approaches can illumine the nature of expert practice.

Rationalist perspective

Other authors have adopted an empirical approach to the study of expertise and novice/expert differences. Crandall & Getchell-Reiter (1993) see an expert as one who possesses the ability to make rapid, accurate assessments of patient status and needs, often under conditions of extreme time pressure, uncertain diagnostic information and high risk. The ability of experts to recognise patterns in the situation has been identified as a key expert-novice difference in nursing practice (Grossman & Wheeler, 1997; Offredy, 1998). The ability to detect and identify patterns being dependent upon the clinician's knowledge store of prior experiences.

In their study of orthopaedic nurses Greenwood & King (1995) found that novices were more likely to adopt the cognitive strategy of 'collecting information' than were experts. They also noted that nurses in their study focused almost exclusively on physical aspects of care. Greenwood and King's findings must be treated with caution however, because of their poor use of think-aloud technique. In contrast, Itano (1989) suggests that experienced nurses normally collect significantly more cues than student nurses. She notes that not all cues carry an equal weight in every situation and that the skill of the expert is in deciding how much weight to give to a particular cue in a particular case. Interestingly, this characteristic may not be consistent across all situations. In her study looking at the effects of patient acuity on clinical decision-making Henry (1991) noted that both inexperienced and experienced nurses collected less data when dealing with a more acute situation.

A very different view of what it is to be an expert is proposed by Broderick & Ammentrop (1979), stating that expert behaviour involves the capacity to structure complex problems such that rules or treatments of known power can be applied to them. Corcoran (1986b, 1986a) suggests that experienced nurses examine problems from a broad perspective, compared to novices or inexperienced nurses who employed a limited problem-solving approach, and that experts develop better final plans than novices.

Holden & Klingner (1988), in their study, using computer-based simulation, explored the ability of novice and expert nurses to diagnose the reasons why infants cry. Their findings highlighted the central role of domain specific experience in the development of particular expertise. In support of this Watson (1994) in his study of nurses' actual clinical decision-making noted that 83% of observed decisions were based upon prior experience. In contrast however, Henry (1991) states that the relationship between experience and clinical decision-making outcomes is less clear.

In reviewing the nursing literature, a number of differences between novices and experts were identified. From a phenomenological perspective the key element of developing expertise appears to be the emergence of intuition as the hallmark of expert practice. In contrast, the view of expertise from within the rationalist perspective highlights differences in the cognitive strategies used such as pattern recognition, the amount of information collected, and the extent to which the decision-maker adopts a broad versus narrow problem-solving approach. Where both perspectives appear to be in accord is in relation to the importance of prior experience in the development of expertise, and in the belief that the concept of expert practice is domain specific.

As will be discussed in greater detail in section 1.5.2, to approach clinical decision-making and the study of novice/expert differences from a perspective of either one methodological standpoint or the other, that is, either qualitative or quantitative approaches, will certainly provide some insight into the phenomenon of interest. However, it may also be limiting, in that by using only a single approach a complete understanding may not be possible. Both traditions appear to be, superficially at least, very different in their epistemological underpinnings and indeed this is often the focus of much debate in this regard. However, it is important to consider not just the ways in which they are different but also their common purposes, namely to increase understanding and knowledge in respect of the topic being studied. An alternative position would be to suggest that by using methods drawn from both qualitative and quantitative approaches then a fuller understanding is possible than from either alone.

Indeed this 'mixing' of methods seems particularly well-suited to the study of a discipline such as nursing whose practice prides itself on being both 'art' and 'science'.

1.4.1.1 Benner's Five-Stage Model of Skill Acquisition.

A number of different models of skill acquisition exist, such as that of Fitts (1964), Fitts & Posner (1967) and Anderson, (1982). Whilst these models may have something to say regarding the way in which nurses acquire a range of psychomotor and cognitive skills it is the more general model of skill acquisition proposed by Patricia Benner that will be used to explore the development of priority setting skill in this study.

As indicated in the previous section, the work of Patricia Benner has been hugely influential upon modern nursing (Benner, 1982; Benner & Wrubel, 1982; Benner, 1984; Benner & Tanner, 1987; Benner & Wrubel, 1989; Benner et al., 1992; Tanner, Benner, Chesla, & Gordon, 1993; Benner, 1996; Benner, Tanner, & Chesla, 1996). Her work has been incorporated into many spheres of nursing including academic assessment and clinical grading.

In this model, which is based upon the work of Dreyfus & Dreyfus (1986) the development of expertise is seen as the transition between five stages of skill. In this model of skill acquisition the practitioner progresses from the use of the formal rule systems of novices, to the use of implicit, intuitional modes of thinking, characteristic of experts. The five stages of this model as described by Benner can be seen in appendix I. Benner does not propose that a nurse will move steadily from novice to expert, nor does she suggest that the levels are equidistant from each other. It should also be noted that, according to Benner, there is a qualitative distinction between level four (proficient) and level five (expert). She further states that it is not inevitable that every nurse will become an expert.

1.4.2 Novices and Experts in the General Literature

Outwith nursing (and professions allied to medicine) the literature in respect of expertise and novice/expert judgements is almost exclusively rationalist in perspective. Shanteau (1992b) states that the first known analysis of experts was by Hughes (1917) in which the expert judgements of agricultural judges were studied. The predominant approach in the study of expertise has been that of contrastive, cross-sectional studies, comparing 'experts' with 'novices' although some studies involve a range of intermediate groups (Gilhooly, 1990). Gilhooly emphasises an important point, often not acknowledged by

others, that novices are not necessarily 'naïve' players.

Gilhooly (1990) and Green (1992) identify a number of key expertise maxims that emerge as typical findings from research in this area, namely –

1. Experts remember better.
2. Experts work forwards.
3. Experts have better problem representations.
4. Experts are superior in knowledge, not basic capacities.
5. Experts become experts through extensive practice.

The first of these maxims refers to memory for new information in their particular field – a finding first derived from studies of chess skill (De Groot, 1965; Chase & Simon, 1973; Charness, 1979, 1981). Similar results have been reported in a range of other skills, e.g., reading of electronic circuit diagrams, bridge, the game 'Go', computer programming, and map reading (Reitman, 1976; Charness, 1979; Egan & Schwartz, 1979; McKeithen, Reitman, Reuter, & Hirtle, 1981; Gilhooly, Wood, Kinnear, & Green, 1988). This finding that experts remember better suggests that experts have built up a rich repertoire of schemata that enable them to encode new information rapidly and efficiently.

The second maxim, drawn from the physics problem-solving work of Larkin, McDermott, Simon, & Simon (1980), suggests that experts work forwards from the starting point to the goal, whereas novices typically use means-end analysis to work backwards. Gilhooly suggests that this implies that for novices, problem-solving is search driven, but schema driven for the expert.

The third, that the superior schema of experts enables them to build better problem representations suggests that, for experts, most problems are not new, but rather are examples of familiar types. Commenting on the work of Elstein, Shulman, & Sprafka (1978) that appears to contradict this maxim, Gilhooly suggests that this inconsistency may have been the result of a lack of sufficient information at the outset of the problem-solving task, thereby preventing the development of an adequate representation of the problem.

Chi (1985), cited in Zeitz & Spoehr (1989) suggests that the cornerstone of expert problem-solving is a large body of well-structured domain knowledge. In the expert, knowledge is organised into meaningful units called chunks. This means that experts manage their domain knowledge more efficiently as they are able to view a complex situation in terms of a smaller number of chunks of information. Zeitz & Spoehr (1989) suggest that an expert is someone who easily forms representations or mental models of problems within their particular domain. They contend that the well-structured presentation of information can affect the knowledge organisation of the user, and that in turn this can result in superior performance involving application of this knowledge, thus improving problem-solving. Anderson (1982) claims that when solving a new kind of problem, slow interpretations of one's declarative knowledge, that is, all of the individual units of knowledge one has about the skill, result in often-repeated sequences becoming compiled, that is associated with one another, into what Anderson refers to as procedural knowledge. The result of this development of procedural knowledge is that the problem appears to require fewer steps to reach solution. This process of compilation reduces the workload on working memory, as long-term information may no longer be held there whilst problem-solving. However, Anderson suggests that this chunking and organisation of knowledge is not sufficient by itself to produce expert problem-solving.

It is argued that the reason that experts are superior problem solvers is that the working representations of experts are abstract conceptualisations of the original problem statement, whereas those of novices are less abstract and focus more on surface features (Lewis, 1981; Chi, Glaser, & Rees, 1982; Adelson, 1984). Adelson suggests that this abstraction enables experts to more easily work with a problem's elements, thus facilitating the finding of an optimal solution.

In what appears to be anomalous examples of non-experts performing better than experts, Gilhooly (1990) observes that a number of studies have shown that, when presented with a short text outlining a patient case, those participants functioning at an intermediate level of expertise recall more information than either the novice or expert. Gilhooly (1990) suggests that this represents a difference in depth of processing, with novices processing shallowly because they cannot do otherwise, experts also process shallowly because they do not need to do more, however, those at intermediate level process deeply because they can, and that is their best hope of solving the problem. This explanation would appear to be confirmed by the work of Schmidt & Norman (1988) which demonstrated that when time was limited, the intermediate-level subjects could not engage in deeper processing and had poorer recall, and by later work by Gilhooly et

al. (1997) that demonstrated that intermediate participants, who do not have extensive experience of real patients, will tend to adopt a slow elaborate reasoning from first principles when constrained by time.

Gilhooly et al. (1997) further suggests that experts have, through extensive experience, developed knowledge in the form of 'illness scripts' containing prototypical information about cases. They suggest that in a wide range of domains, a need to reach conclusions rapidly leads to a favouring of short-cut methods over methods based upon deeper explanations in terms of underlying processes and structures. However, experts will adopt a 'reason from first principles' approach when recognition methods do not suffice.

In their study examining how participants with varying levels of expertise differ in their structures of concepts, Murphy & Wright (1984) asked participants to describe typical characteristics of an aggressive, depressive and disorganised child. The number of features described per category increased systematically with expertise. It is also interesting to note that experts agreed most frequently with the experienced group and novices with beginners, suggesting a continuum of expertise characterised by increasingly complex concepts. The study can be criticised however, in that, whereas the experts were qualified clinical psychologists, the experienced and beginner groups were represented by students who were participating in a short-term residential treatment programme for emotionally disturbed children, and the novice group was a group of psychology students who participated in the study as part of their course requirements.

Wright & Bolger (1992), pose an intriguing problem regarding expertise by asking the question 'When is an expert *expert*?' The suggestion here is that an expert will only function as an expert in particular instances, that is, in those situations in which they possess the relevant expertise. In other situations they will function at a level below that of expert.

Interestingly, a review of the decision-making literature suggests that experts are often inaccurate and unreliable (Ettenson, Shanteau, & Krogstad, 1987; Shanteau, 1992b). They may attend to irrelevant information and rely excessively on heuristics that may lead them into error (Shanteau, 1992a).

Shanteau (1992a) further suggests that what novices lack is the ability to distinguish relevant from non-relevant cues. They further suggest that what is deemed relevant is also determined by the task context. The 'non-use' of information by experts reflects skilled omission rather than a cognitive limitation (Ettenson et al., 1987).

Finally, Einhorn (1980) raises an interesting question in respect of how one learns to make effective decisions, namely, how does one initially learn which alternative to choose when learning to make choices, suggesting that reinforcement from trial and error learning will be significant.

1.4.2.1 Expertise or Experience?

What is the relationship between experience and expertise? At times, the literature appears to be lax in its use of the terms experience and expertise. Thompson, Ryan, & Kitzman (1990) raise concerns regarding the definition of expertise. Is it actual performance, ability to perform, or simply domain knowledge? How do you identify characteristics underlying expertise? How do you measure it? Those who possess expertise in a finite field may be regarded as experts, having an advanced level of knowledge and skill, and performing their craft better than most others. There is little agreement on the nature of expertise, except that it is a characteristic of experts, with experts being seen to be both effective and efficient in their area of expertise. The terms may be used interchangeably, and are often not defined.

As a result of having no clear definition of expertise, there is inevitably a difficulty in attempting to identify and measure the characteristics indicative of both expertise and experts. Criteria for defining experts vary enormously across studies. An expert as defined in one study might be regarded as a novice in another. The study of expertise relies heavily on observation of behaviours and their outcomes. However, observation alone is not helpful, as it gives little insight into rationale. Much nursing work would be difficult to observe, leading Lamond, Crow, Chase, Doggen, & Swinkels (1996) to suggest the use of think-aloud methods or verbal protocols, in order to explore the reasoning behind clinical decision-making.

For Benner (1984), expertise is underpinned by knowledge, although she prefers to see expertise in the situation rather than the individual. Expertise is defined by Benner (1982) and Benner & Tanner (1987) as the ability to perform appropriate actions rapidly after recognising a minimal number of situational cues. The essence of expertise is an ability, the ability to accurately perform the required mental or physical activity rapidly

and with the fewest number of cues. This ability develops over time as a result of relevant clinical and educational experience.

According to Watson (1991), experience has a number of attributes, namely, passage of time, the gaining of skills or knowledge, and exposure to an event. He too however, struggles with the question of how much experience is required to become an expert.

1.4.2.2 Can Experts Articulate the Logic and/or Knowledge Used in Decision-making?

Benner (1982) suggests that it is not possible to recapture from the expert in explicit, formal steps, the mental processes or all the elements that go into his or her expert judgement. Benner & Wrubel (1982) further states that some of the expert's most valuable clinical knowledge is so taken for granted that the expert cannot describe it. Indeed Benner (1984) and Dreyfus & Dreyfus (1986) suggest that an expert's skill level will actually fall if they are asked to verbalise whilst completing a decision-making task. However, Corcoran, Narayan, & Moreland (1988) do not share this specific concern, although they suggest that experts have great difficulty in describing what they know and do. Field (1987) also suggests that many expert practitioners cannot explain the basis for their actions, however, she presents no evidence to support this statement.

According to Thompson et al. (1990) the development of expert systems assumes that an expert is able to articulate the logic and/or knowledge used in decision-making. However they do distinguish between knowledge and process suggesting that whereas expert knowledge is perhaps available to knowledge engineers, expert processes are not.

A number of authors, however, do suggest that expert thinking is amenable to study. Corcoran et al. (1988) and Shanteau (1992b) propose that expert thinking can be studied using think-aloud techniques. Meerabeau (1992) suggests that a range of methods may need to be applied to capture expert knowledge. Notwithstanding Benner's previous concerns, Benner & Wrubel (1982) do suggest however that participant observation may permit access to expert function.

1.4.2.3 On Being a Novice

Just as there are many different suggestions regarding the point at which a practitioner has become an expert, so too, questions can be posed about what it means to be a novice. It is generally the case in the literature that a novice is defined relative to someone who

is not a novice. In some instances this comparison is made between novices and experts, whereas in other cases intermediate levels of increasing expertise are also identified (Dreyfus & Dreyfus, 1980; Benner, 1982, 1984; Murphy & Wright, 1984; Dreyfus & Dreyfus, 1986). In all cases, novices are relatively inexperienced in the area, or domain, under investigation. However, this is not to say that they are in fact lacking in any relevant experience. Indeed, in much of the literature, novices are qualified and experienced nurses, often with several years experience (Corcoran, 1986a; Greenwood & King, 1995; Cioffi & Markham, 1997), however in other studies, novices may also be drawn from the student body, and compared with qualified nurses with varying levels of expertise.

For the purposes of this study, student nurses will be regarded as novices, or advanced beginners, as per Benner's novice to expert model (section 1.4.1.1). This is consistent with a number of other studies (Benner, 1982, 1984; Murphy & Wright, 1984; Holden & Klingner, 1988; Itano, 1991; Tschikota, 1993; Taylor, 1997; Ferguson & Hope, 1999).

1.5 Broad Methodological Considerations

In this section general methodological issues pertaining to the current study will be considered. In particular, consideration will be given to issues surrounding the mixing of methods, and also to those of reliability and validity in qualitative studies. Methodological considerations specific to each aspect of the study will be discussed in the relevant chapters.

1.5.1 Methodological Framework of the Study

Morse (1991a) states that the characteristics of a qualitative research problem are -

1. The concept is immature due to a lack of theory and previous research.
2. A notion that the available theory may be inaccurate, incorrect or biased.
3. A need exists to explore and describe the phenomena and to develop theory.
4. The nature of the phenomenon may not be suited to quantitative methods.

Morse further suggests that the qualitative and quantitative aspects of a research project cannot be equally weighted, as a project must be theoretically driven by one perspective or the other, to which the minor perspective can add a complementary component.

As has been demonstrated earlier in this chapter, nurse clinicians, educators, and managers have over many years, repeatedly identified priority setting as a key skill for nursing practice, and yet it has not been the subject of systematic study. As a result there is a need to explore and describe priority setting, attempting to uncover the nature of priority setting in clinical nursing practice, and to make comparisons between those who could be regarded as novices or beginners, and those who are experienced. As a consequence, a predominately qualitative approach will be adopted. However, where appropriate, quantitative approaches will also be included.

Weiss (1968, pg. 344) cited in Jick (1979) makes a bold statement, suggesting that

'Qualitative data are apt to be superior to quantitative data in density of information, vividness and clarity of meaning, characteristics more important than precision and reproducibility.'

1.5.2 Multiple methods: confirmation or completeness?

According to Steckler, McLeroy, Goodman, Bird, & McCormick (1992), both qualitative and quantitative perspectives have inherent weaknesses that are, at least in part, compensated by the other. Steckler et al have further stated that some authors have argued that the purposes of quantitative and qualitative approaches are so fundamentally different that using them together is not possible, or desirable. Any reconciliation between them, it is argued, will destroy the epistemological foundations of each. Nonetheless, Steckler et al. (1992) recommend the adoption of a pragmatic approach, subscribing to the philosophy of one paradigm whilst employing methods of the other. They further propose that complex phenomena require the application of multiple methodologies, in order to properly understand or evaluate them. Mitchell (1986) suggests that the purpose of using multiple methods is to overcome the deficiencies and biases that stem from any one method. Using multiple methods allows the researcher to tap the various dimensions, and generate a rich and comprehensive picture of the subject under study. By combining both qualitative and quantitative methods, a more complete picture of a phenomenon is seen than if either method was used alone. Similarly, Duffy (1987) supports the use of multiple methods, suggesting that relying solely on a quantitative approach has serious limitations. Corner (1991) and Couchman & Dawson (1995) propose that nursing research must move beyond the qualitative versus quantitative debate; become less constrained by the methods that researchers adopt, and more inventive and flexible. In so doing, the researcher can, by looking at a problem

from an alternative research approach, gain a different perspective. Carey (1993, pg. 315) state that the main point to remember is -

'... not whether one method is "better" than the other but, rather, that we use all available techniques as tools to answer questions of substantive importance. Why discard a useful tool just because it is qualitative or quantitative in nature?'

This use of multiple methods is referred to as triangulation. Morse (1991a) proposes that when a single method is inadequate, triangulation is used to ensure that the most comprehensive approach is taken to solve a research problem. Triangulation involves the use of a range of different strategies intended to accomplish one of two distinct purposes, either confirmation or completeness (Knafl & Breitmayer, 1991; Couchman & Dawson, 1995). As confirmation, triangulation involves the use of multiple measures to converge on a single, discrete construct, or phenomenon of interest. (Sim & Sharp, 1998) hint at the power of triangulation to raise the status of qualitative research, proposing that triangulation is a research strategy that aims to enhance the process of empirical research by using multiple approaches. Alternatively, it has been proposed that another use of triangulation is to achieve completeness in respect of the object of study (Fielding & Fielding, 1986; Sim & Sharp, 1998). In this way, multiple methods, data sources, theories and/or investigators aim to reveal the varied dimensions of an area of interest, as each measure, source, or investigator, contributes another piece of the puzzle. The goal of triangulation according to Breitmayer, Ayres, & Knafl (1993) is to increase confidence in the trustworthiness of the researcher's data and its interpretation. Carr (1994) proposes triangulation as a valuable means of discovering the truth about nursing.

However, for Sim & Sharp (1998), the use of multiple methods is based on a faulty assumption, which is that different measures have different patterns of error associated with them. There is also an epistemological paradox in using triangulation as a means of achieving validation in qualitative research, namely that this suggests that there is a single, objective reality upon which it is possible to agree. Alternatively, Denzin & Lincoln (1994, 2000) suggest that triangulation is not simply a tool or a strategy of validation, but rather is an alternative to validation. They suggest that triangulation acts like a prism to shed new light on the phenomena under study.

Achieving similar findings from similar sources does not in itself guarantee validity; however, it may increase the scope of the study's findings, i.e., improve content validity. The use of only a single method may result in an incomplete picture. Jick (1979)

suggests that 'within-method' triangulation involves cross-checking for internal consistency or reliability while 'between-method' triangulation tests the degree of external validity. It allows researchers to be more confident of their results, and it can stimulate the creation of inventive methods.

Patton (1990) suggests that whilst triangulation is ideal, it is also very expensive both in terms of cost and time, however, Robson (1993) states that especially for real world research, multiple methods have considerable advantages. Sim & Sharp (1998) further caution that triangulation is not always appropriate, as some research questions may be adequately answered by a single method. Using triangulation is recognition that the researcher needs to be open to more than one way of looking at things. Steckler et al. (1992) highlight that one serious difficulty in the use of triangulation may be that few researchers are sufficiently experienced in a range of quantitative and qualitative methods to be familiar with all of their strengths and weaknesses.

As the topic of priority setting is not one that has been previously the subject of systematic study, this work will use a range of different methods, with the aim of achieving a more complete exploration of the phenomenon in question.

1.5.3 Issues of Reliability and Validity in Qualitative Research

Qualitative approaches to research are increasingly recognised and valued, particularly for studying phenomenon or events about which little is known, thus providing rich and detailed descriptions of previously unexplored phenomena (Field & Morse, 1985; Morse, 1991b; Cutcliffe & McKenna, 1999). However, a number of authors have highlighted the need to address issues of reliability and validity in qualitative research (Hinds, Scandrett-Hibden, & McAulay, 1990; Sandelowski, 1993; Appleton, 1995; Seale & Silverman, 1997).

Throughout this study, issues of reliability and validity will be considered as they arise, in each of the relevant chapters.

1.6 A Preliminary Model of Nurse Priority Setting

Following the review of the literature in this chapter, it is possible to propose a model of priority setting (Fig 1-3). In section 1.2, it was argued that the context in which nursing care is provided can and does influence priority setting, especially ward organisation, and the formal and informal philosophies and theories of nursing held by both the

individual nurse and by the organisation. The possible strategies and frameworks that the nurse might use in deciding priorities were explored in section 1.3.5.2. In section 1.3.4, the influence of the severity of the patients' illness upon prioritisation was noted. Section 1.3.6 indicated the impact that insufficient resources might have on prioritising care. The value of experience is generally agreed upon as being central to effective decision making and problem-solving, despite the fact that the terms experience and expertise are often inadequately defined (section 1.4).

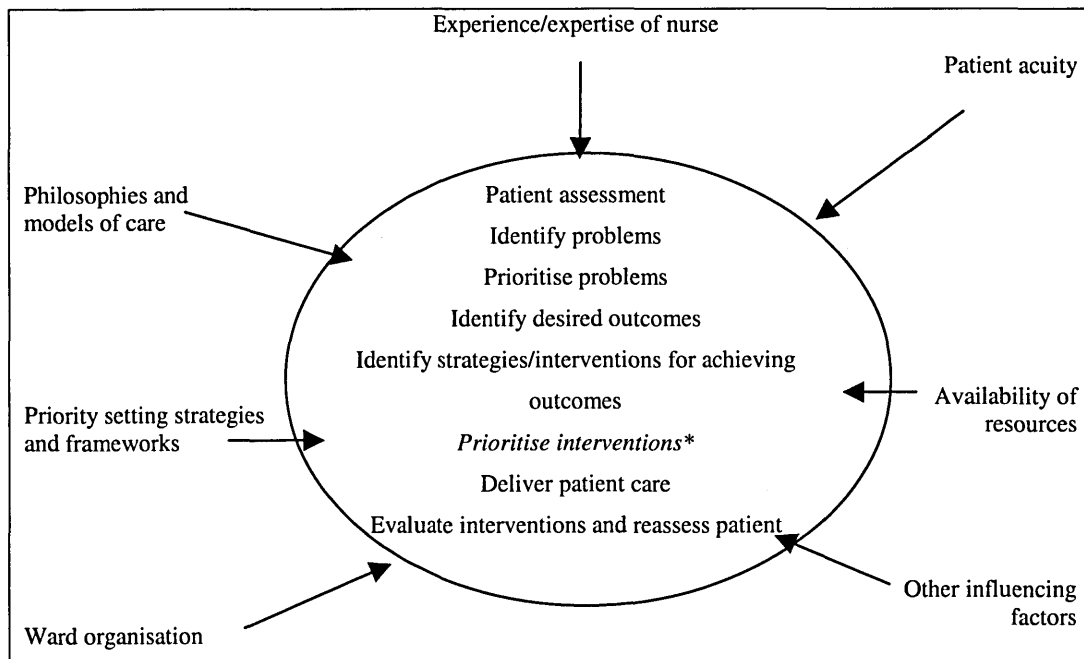


Figure 1-3: Preliminary model of priority setting: the process of planning care is represented within the circle, whereas factors that may impinge upon this process surround the circle.

* This additional element of the process of prioritising care is proposed subsequent to the literature review.

1.7 General Aims of the Study

The general aims of this study are to explore priority setting in relation to a nurse's ability to 'juggle and integrate multiple patient requests and care needs...' (Benner, 1984) when that nurse is caring for more than one patient. Furthermore, the study will explore priority setting in nurses who are operating across a range of functional levels related to varying levels of experience. Finally, the study will attempt to expose those factors that to varying degrees facilitate or hinder the nurse in priority setting.

Study one will use a simulated caseload to confirm that priority setting does occur and is different in participants with varying levels of nursing experience. In study two the simulated caseload will be combined with think-aloud method in order to try and

understand what is happening when nurses set priorities of care. Furthermore, study two will enable a preliminary analysis of those factors that influence priority setting. Semi-structured interview will supplement the use of think-aloud method. The final study will build upon studies one and two, and examine priority setting in clinical practice using think-aloud method, participant observation and semi-structured interview. In this way those findings elicited during studies one and two can be compared with what actually occurs in clinical practice.

1.8 Conclusion

In this chapter it has been argued that priority setting is a key skill for nursing. It has also been suggested that this skill is neither well described nor adequately studied. The nature of priority setting, the concept of experience, and novice expert differences were also explored.

In the remainder of this study, priority setting is explored in an incremental fashion, with each stage, in part, informing the next. In chapter two, a simulated case-load, or patient vignette, is used to examine priority setting in a range of participants with varying levels of experience. Chapter three continues this work by combining a simulated case-load with think-aloud method, and semi-structured interview. In the final phase of the study priority setting is explored 'in situ' with the use of think-aloud in actual clinical settings, supplemented with participant observation, and semi-structured interviews. Lastly, chapter five will draw this research study together, identifying key findings, reviewing the research methods used, and identifying relevant implications for theory, practice, and further research.

Chapter Two

Exploring Priority Setting Using a Simulated Case-load

2 Chapter Two: Exploring Priority Setting using a Simulated Case-load

2.1 Introduction

From chapter one it was seen that priority setting could be regarded as an important and possibly key nursing skill. It was also seen from the existing literature that this is a nursing skill that does not appear to have been studied to any significant extent previously. Setting priorities in the context of caring for several patients is about making decisions in respect of those patients and the care that they require. It is also about giving temporal structure to those care activities, taking into account the time available to provide that care, and making judgements about the relative importance of such care activities to one another. As such, priority setting can be regarded as a form of clinical decision-making or problem-solving. In view of the lack of prior studies on priority setting it was decided, in the first instance, to explore this skill by the use of a simulated patient case-load or vignette. The reasons for choosing this method will be discussed in section 2.3.

2.2 Aims of Vignette Study

In order to investigate priority setting by nurses, it was hypothesised firstly, that nurses do prioritise care when dealing with several patients, and secondly, that the process of prioritisation differs between 'novice' and 'expert' nurses. The purpose of this study was firstly, to see if evidence of priority setting could be identified in a clinical decision making exercise, and secondly, to explore the view that this is a skill that differs in experienced and inexperienced nurses (Benner, 1984).

2.3 Methodological Issues

In this section, a review of the literature regarding the use of simulation to study clinical decision-making and problem-solving will be undertaken. The construction of vignettes for use in such simulations will also be considered.

2.3.1 The Use Of Simulation To Study Problem-Solving And Clinical Decision-Making

Simulations have been increasingly used as a research method in the study of decision making and problem-solving by nurses since the 1960's, (Roberts, While, & Fitzpatrick, 1996), and are now one of the most frequent methods used to study nurses (Misener, 1986; Shelley, Zahorchak, & Gambrill, 1987; Tanner et al., 1987; Degner & Russell, 1988; Peternelj-Taylor, 1989; Forrester, 1990; Lanza & Carifio, 1991; Abbott & Sapsford, 1993; O'Neill, 1994; Gould, 1996; Johannsson & Wertenberger, 1996; Lamond et al., 1996; Lanza, Carifio, Pattison, & Hicks, 1997; Ludwick, 1999).

A simulation can be defined as 'the imitation of a particular event or topic to be studied', (Lanza, 1990, pg. 410), or as a representation of elements of physical or social reality, which are used in order to achieve a clearer understanding of an actual situation (Duke, 1986). The goal of a simulation is the presentation of a life-like scenario, vignette, or case study, which reflects a real setting, whilst allowing the researcher an element of control (Lamond et al., 1996). A simulation, then, is a portrait of an event, experience, task, or series of tasks, to be completed by the person undertaking the simulation. It can be used to teach and illustrate concepts and skills, to assess performance, and to study decisions and the processes by which such decisions are arrived at. Holzemer et al reported that simulation is useful for measuring nurse practitioners' abilities to problem-solve (Holzemer, Schleutermann, Farrand, & Miller, 1981). It has been used extensively as a research technique in medicine (Barrows, 1968; Elstein et al., 1978; Fielding & Page, 1978; Kassirer, Kuipers, & Gorry, 1982; Grant & Marsden, 1987, 1988), and as was indicated above, simulations have also been more recently used to study nurse decision-making and problem-solving. There are a number of reasons why this is the case.

Simulations can take a variety of formats, from a simple verbal description or paper and pen exercise, or use of computer simulations (Lowdermilk & Fishel, 1991; Henry & Holzemer, 1993), through to the more sophisticated use of video, using actors or actual clinical scenes and data. The advantage of simulations as a research method, it is argued, is that they are controllable, highly structured, and replicable (Lanza, 1988; Lanza & Carifio, 1990, 1992; Abbott & Sapsford, 1993; Gould, 1996; Lanza et al., 1997). They permit the possibility of systematically varying aspects of the simulation allowing subsequent observation of the effects of these changes (Lanza, 1988, 1990; Lanza & Carifio, 1990; Gould, 1996; Ludwick, 1999). Additionally, large numbers of participants can complete a simulation, thus generating large amounts of data (Bryans & McIntosh,

2000), and it may be done relatively cheaply. Simulations also avoid some of the potential ethical difficulties that are inherent in studying clinical practice 'in situ', such as ensuring patient/participant anonymity and confidentiality, as well as not putting patients at risk. Finally, simulations are often a simpler representation of an event or task than the reality, however, they can be extremely complex, e.g., a flight simulator for a large commercial aircraft.

The extent to which the transfer of training to real situations is successful will depend, in part, upon the fidelity, or closeness of the simulation to reality (Sherman, Miller, Farrand, & Holzemer, 1979). It is important to note that there may be a cost here, as in general terms, the more life-like a simulation, the more expensive it is to produce. The difference in the 'reality' of simulated tasks as compared with actual practice has led some to question the validity of such methods. Furthermore, this has directed others to strive to ensure that simulations are as close a representation of the 'reality' that they attempt to portray, as it is possible to achieve (Lanza, 1990; Lamond et al., 1996). With regard to the latter, a key element is the content validity of the simulations, that is, the extent to which the content of the simulation 'adequately represents the phenomenon being studied' (Parahoo, 1997, pg. 270). One important aspect here is the notion of 'adequate representation.' Consider the example of a student nurse learning to give an intra-muscular injection. It would be potentially dangerous to learn this skill 'in situ', that is, on a live patient. A degree of preparation using simulation is the norm prior to giving one's first injection. One common model for practising such a skill is the use of the humble orange. Clearly the orange does not look like an area of human tissue, however upon injecting the orange, the student feels the initial resistance of the orange skin, and then the give as the outer skin is breached by the needle. It is this feel of what happens, as the needle punctures the skin, which is being represented by the orange, and experience tells us that this element of the representation is an adequate one. For Henerson, Morris, & Fitz-Gibbon (1987) assessing content validity involves a systematic review of the content, in order to ensure that it includes everything it should and does not include anything that it should not.

Tanner et al suggest that the content validity of clinical simulations has two components (Tanner et al., 1987). The first is the extent to which the simulation is representative of encounters that a nurse may experience in clinical practice. The second component is the extent to which the nurse's response to a simulation is representative of their actual response in a real patient encounter. By this is meant, whether the simulation participants are asked to undertake, represents a realistic decision-making or problem-

solving activity (i.e., one that represents their day-to-day work), and whether their response to this exercise mirrors that which would occur in an actual clinical setting. Basing simulations on real patients, and constructing the simulation in such a way that it represents the nature of the task under study should, according to Tanner et al, '*assure some degree of content validity*' (Tanner et al., 1987, pg. 361). They do, nevertheless, acknowledge that simulations are unlikely to represent the total content domain for nursing judgement. In suggesting further work they conclude by stating that '*research using natural observation of beginners and experts as they perform clinical judgements in practice is clearly warranted.*'

Expert panels have also been used as a means of establishing the content validity of simulations (Lanza, 1990; Roberts et al., 1996; Crawford, Meana, Stewart, & Cheung, 2000). Lowdermilk & Fishel (1991) describe how, in the development of computer simulations, the review process aims to ensure accuracy, relevance and current clinical applicability, or content validity. In their own study, the simulations were ones that had been produced by a commercial company. During their production the simulations were written by a nurse educator prior to being reviewed by other nurse educators and practitioners; in effect, an expert panel.

The issue of face validity, that is, the extent to which the given scenario mirrors the real-life situation, as a key challenge is also highlighted. In this context, face validity refers to the extent to which the simulation feels real to the participants, the extent to which it resonates with their experience of the topic under investigation (Miller, 1987; Roberts et al., 1996). The importance of face validity is that it may affect the way in which the participants view the exercise and influence the level of earnestness with which they respond.

For some, the difficulties inherent in using simulation methods are that they are clearly artificial, and as such participants' responses cannot be assumed to be the same as their responses to an actual event (Davis & Slater, 1989; Lanza, 1990; Lanza & Carifio, 1990; Taylor, 2000). Generalisation of findings from simulation research must therefore be tentative initially, and the simulation's external validity must be established before its use (Flaskerud, 1979).

Simulations may be more useful as a research tool in the study of planning analysis, and risk-taking behaviour in nursing, than they are in teaching nurses (Klein & Fleck, 1990). Johannsson & Wertenberger (1996) used simulation to describe the critical thinking

ability of nursing students. Their research used video, and paper and pen exercises. Once again expert panels were used to determine 'content-related validity'. Johannsson and Wertenberger concluded that simulations are an appropriate way to assess some components of critical thinking, and are an effective way to assess students' ability to problem solve. However, once again, they note that it cannot be assumed that students would react the same way in 'real life.'

There is little evidence to support the notion that response to simulation will reflect behaviours in practice (Padrick, 1991; Henry & Holzemer, 1993). Nonetheless, there are several reasons for using simulation (Henry & Holzemer, 1993). Simulations allow the researcher to standardise the stimulus, and thus make comparisons between groups. A potentially key benefit of simulations is that they allow for the study of decision making without threat to patient safety. They also allow for the study of rarely occurring, but perhaps critical, decision making events. Clinical simulations that are consistent and comparable allow for valid measurement of problem-solving and decision-making skills (Farrand, Holzemer, & Schleutermann, 1982). Farrand et al also suggest that in their own work, their findings support their claim of construct validity for their simulations, due to the finding of expected differences between two levels of nurse. The issue of validity may be a function of the extent to which realism is achieved (Miles & Huberman, 1984).

In summary then, simulations raise concerns in respect of their representativeness, or fidelity to, actual clinical situations. To what extent is the phenomenon under study 'caught' in the simulation? If the fit of reality and simulation is not good then confidence in the results will be limited. This estimate of the fit between the simulation and reality is often made by using expert panels to review the simulations. However, as will be considered in chapter three, the use of such panels of experts is not without its own problems. Similarly, in considering the results from simulation based studies, one must think about the extent to which the stated responses of the study participants would be consistent with their responses in a problem-solving or decision-making task in actual clinical practice. Nevertheless, well constructed simulation studies, can suggest or indicate the processes, strategies and responses that may be typical of the group under study, and are an appropriate method for exploratory studies, and preliminary hypothesis testing, prior to more extensive investigation of a topic.

2.4 Study Design

A simulated case-load was the main tool used to elicit priority setting behaviour in participants with a range of nursing experience. The simulation consisted of four patient vignettes that formed the basis around which the priority setting exercise was constructed.

2.4.1 Vignette Construction

The use of patient vignettes in the form of a simulated case-load was the principal method to investigate priority setting for this phase of the study. It was important, therefore, that the case-load represented as realistically as possible, the patients, and information about patients, which the nurses in the study would typically encounter in the clinical setting. In order to maximise the content and face validity of the patient scenarios, they were constructed from actual cases obtained from routine handover reports. At the time of the study, the researcher was a Clinical Teacher in several acute medical wards in a local teaching hospital, and as part of his teaching and learning strategies with student nurses would occasionally sit in on such handover reports with students. These handover reports would normally form the basis of a later tutorial session with the student(s). With the permission of the Charge Nurse one of these routine handover reports was audio taped. Following the handover report, the clinical teacher and student would normally walk around the ward introducing themselves to their allocated patients, noting any pertinent observations as they went, e.g., patient resting on bed, or nasogastric feeding in progress. The taped handover report was subsequently transcribed verbatim. Patients' names and other potential identifying features were removed in the process of transcription thus ensuring patient confidentiality.

From this handover report, combined with the observations made of patients, a case-load of four patients was created that became the simulated case-load for this phase of the study (Appendix Ia). Each of the four cases was equivalent in size and clinical complexity so that no one case dominated the simulation.

2.4.2 Simulation Tool

The patient vignettes formed the basis of the simulation exercise. The complete tool consisted of a brief introductory letter outlining the study, the simulated case-load with instructions regarding the exercise, a response sheet and a sheet for recording some basic biographical information (Appendices Ia, III, V, VII).

2.5 Pilot Study

Prior to conducting the main study a pilot study was carried out. The aims of the pilot study were -

- To investigate the feasibility of using simulation to study priority setting, and to test the proposed format.
- To explore the face validity of the vignettes and the simulation as a whole.
- To consider how best the data from such a simulation study might be analysed.
- To provide the researcher with experience of using this method.

2.5.1 Study Participants

The pilot study participants (n=28) were a convenience sample of nursing students who were currently attending Tayside College of Nursing and Midwifery, for one of several theoretical study periods during their course. They were in the final five months of their training (1982 modular scheme). As permission had previously been given to conduct the research study by the School Principal (Appendix VIII) the class were approached via their class tutor. A brief explanation was given, stressing their right not to participate without detriment should they so wish, and requesting their assistance.

Their age and gender are given in table 2-1.

<i>Age group</i>	<i>20-25</i>	<i>26-30</i>	<i>31-35</i>	<i>36-40</i>	<i>46-50</i>	<i>Total</i>
Female (N)	14	7	0	3	2	26
Male (N)	0	0	1	0	1	2
Total	14	7	1	3	3	28

Table 2-1: Gender and age distribution of pilot study participants

2.5.2 Administration of Simulation Exercise

The complete research tool as described in section 2.4.2 was administered to the participants. As this was a pilot study some additional questions relating to the research tool itself, and its completion, were also included (Appendix VI).

The participants were asked to read brief reports on four patients, which they had to imagine they had been allocated for that morning (Appendix Ia). In addition to each patient's handover report, several observations were included that the participants were to assume they had noted on first 'seeing' their patients, e.g., patient resting on bed, or nasogastric feeding in progress. Once familiar with 'their patients' each participant was then required to describe, in writing, the care they would provide for their patients for the remainder of that morning.

One group (GP1) was asked to 'Describe your morning in as much detail as you can, saying what you would do.' The second group (GP2) was asked to 'Describe your morning in as much detail as you can. Try to describe the mornings work in the order in which you think you would actually deliver it, i.e., what you would do **first**, then **second**, then **third** and so on.' The reason for this difference was to see if the wording of the instructions regarding completion of the exercise would encourage the participants to focus upon the order in which they gave care, rather than simply describing care given regardless of sequence (Appendix IV).

The original intention had been to distribute and complete the simulation exercise during a timetabled classroom period that had been given to the investigator by the class tutor, and to wait whilst the participants completed their responses. However, the participants soon began asking the investigator questions about the vignette and therefore, in order to reduce the risk of biasing their responses, the investigator decided to withdraw and allow them to return their completed response sheets the following day.

2.5.3 Results

Of the twenty-eight vignettes distributed, all were returned completed (100%). Ninety-six percent of the participants (n=27) completed the feedback questionnaire related to the simulation exercise.

The results from the feedback questionnaire showed that 26 participants thought that the instructions were clear and easy to follow. Twenty-four thought that the four patients represented in the vignette would be typical of the allocation they might expect in a real medical ward, whilst the remainder suggested that they would be allocated more than four patients to care for. In respect of the adequacy of information provided, 10 participants felt that they had been given enough information about 'their patients' to be able to plan their care, with 7 participants not making any comment either way. The remainder all expressing a desire for additional information, including the time that any

tests or investigations were due, the time that the drug Captopril had been given, and the time nasogastric feeding was due to finish.

The response of each participant to the simulation was analysed using content analysis. Initially, the analysis consisted of identifying each separate action or activity described by the participant in his or her response, and for whom the activity was intended, that is, which of the four patients in their case-load. Any clarifying or relevant comments made by the participant were noted in the margin. This first stage of the analysis allowed for the identification of the total number of activities described by each participant. Overall, the number of activities ranged from 6-82 with a mean of 32.7 and a standard deviation of 18.6. The results from the two groups, GP1 with GP2 are shown in table 2-2.

<i>Group</i>	<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>Range</i>
GP1	14	36.57	22.37	13-82
GP2	14	27.43	13.23	6-56

Table 2-2: Number of discrete activities identified by participants in completing simulation

An independent samples t-test confirmed that there was no significant difference between the number of activities identified by either group in table 2-2 ($t=1.367$, $df=26$, $p=0.183$).

It was also considered important to determine the length of time that would be needed to undertake the simulation as this might affect the completion rate in the main study. It is likely that an exercise that took a considerable period of time would be associated with a poor completion rate (Fife-Shaw, 1995). The following table (Table 2-3) indicates the length of time that participants took to complete the exercise.

<i>Group</i>	<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>Range</i>
GP1	14	54.29	49.30	10-210
GP2	13	36.15	17.7	10-70

Table 2-3: Time taken (in minutes) to complete simulation

An independent samples t-test confirmed that there is no significant difference in the time taken between the two groups to complete the exercise ($t=1.252$, $df=25$, $p=0.22$).

The second round of the analysis involved trying to locate each of the activities previously identified in the plan of care by the participants, into a root category, or theme. These categories were identified and drawn from the participants' responses and are described in table 2-4.

<i>Category</i>	<i>Definition</i>
Information gathering	any nursing action whose prime purpose is to seek out information pertaining to or related to the patient and/or his care/treatment
Information giving	any nursing action whose prime purpose is to provide information to the patient; or to other members of the team providing care that is directly concerned with the care/education/treatment of the patient.
Direct care	any nursing action that requires the nurse to directly and personally provide a service of care for the patient.
Indirect care	any nursing action which supports the category 'direct care.'
Facilitating	any nursing action that is given in support of self-care activities; e.g., assisting, encouraging, supporting patients in a variety of activities.
Administrative	activities that are primarily of an administrative nature; e.g., updating computer, referring to other agencies, writing reports.
Miscellaneous	anything that was not covered by any of the other categories

Table 2-4: Definitions of root categories

Further analysis did not proceed beyond this point as it was decided that the aims of the pilot study had been achieved, for reasons that will be discussed in the next section.

2.5.4 Discussion and Amendments to Main Study

The feedback on the structure of the simulation exercise was fairly positive, with most finding the format easy to follow. A large number felt that the allocation of patients represented the allocation they would expect in a real medical ward, certainly in type, although a small number felt that they would normally have more than the four patients indicated. It was felt that, in the main study, it would be acceptable to restrict the number of patients allocated to four, in order to allow the participants to focus on the activity required, rather than expend a lot of effort in simply managing a large amount of information. However, it is recognised that in clinical practice there may be times when the nurse has to provide care for more than four patients.

A Pearson correlation coefficient was calculated which demonstrated a significant correlation between the time taken to complete the exercise and the number of activities described ($r = 0.771$, $p = 0.01$). It was, nevertheless, clear that the exercise was taking a

considerable period of time to complete. Excluding the one outlier of 210 minutes the time taken to complete the exercise ranged from 10-90 minutes (mean 39.4, sd 19.4). Furthermore, it was also clear that whilst an unstructured open response format as used in the pilot study allowed the participants to express themselves freely, and provided the researcher with a wealth of interesting material, it did make the central task of trying to identify the priority-setting activities of participants very demanding. In some instances, participants were providing very detailed descriptions of what they would do, covering several sides of A4 paper, whereas other participants were giving very little information, simply indicating which patient they would attend to first, then second and so on.

To address these issues the vignettes were modified so as to present each participant with a limited list of interventions required by each patient (Appendix II). Furthermore, the participants were required to say in what order they would carry out the care for 'their patients.' They were provided with a separate response grid for this purpose (Appendix IX). A worked example was also provided, as an illustration of what was required (Appendix X). Additionally, some of the information that participants in the pilot study had indicated was needed to help them make their decisions was provided, e.g., John has been given his first dose of Captopril. Following these amendments the simulation exercise was once again administered to a convenience sample of senior nursing students (n=27) specifically for the purpose of testing its ease of use. Seventeen completed simulations were returned of whom twelve completed the feedback questionnaire.

<i>Mean</i>	<i>SD</i>	<i>Range</i>
14.2	5.6	5-20

Table 2-5: Time taken (in minutes) to complete revised simulation

In this format the exercise would take approximately fifteen minutes to complete (see Table 2-5). An exercise that could be completed in a reasonable period of time would be a key factor in ensuring a high completion rate in the main study. Furthermore, eleven participants found the instructions clear, and ten did not feel that any further information was required to enable them to complete the exercise.

The use of vignettes in the form of a simulated case-load to investigate the priority setting of nursing care was shown by these pilot studies to be feasible. The initial pilot study was also helpful in identifying that, in this phase of the study at least, a structured response format would be more appropriate and would facilitate useful analysis.

Additionally, during the pilot studies, the investigator was left with the strong sense that participants may be responding to the simulation in two different ways. Some participants appeared to adopt a task-oriented approach to the completion of the exercise, in that their primary unit of decision-making seemed to be the particular care activities. Others adopted a more people-oriented approach, organising their decision-making around individual patients. This impression would be considered further.

2.6 Main Study

The pilot studies described in section 2.5, and the refinement of the simulated case-load that resulted from them, permitted the main study to compare priority setting between participants with different levels of nurse training and experience.

2.6.1 Study Participants

Four groups of participants were recruited to test the hypothesis that novice and expert nurses prioritise care, and that this prioritisation differs between them. The first was a group of junior nursing students (n=40) undertaking a Project 2000 Diploma level nursing course. Students were selected at random from a class list of students (n=142) who were at that time present in the School of Nursing and Midwifery for the theoretical input of their second term. At this point in their course they had no hospital experience, and had therefore not had to deal with the situation outlined in the simulation. In this sense they could be regarded as novices. The second group consisted of senior nursing students (n=37) undertaking a 1982 modular scheme, first-level training course, in the School of Nursing and Midwifery. These participants had already gained clinical experience in a number of different hospital settings including medical nursing, and therefore, had a degree of experience and familiarity with the activity that they were being asked to attempt in the simulation exercise. In Bennerian terms this group could be said to be functioning at advanced beginner level. The third group was composed of all first-level qualified nurses (n=50), working full-time day duty, on general medical wards in an acute general hospital. Thus, this group represented experienced nurses. The fourth and final group consisted of first year behavioural science students (n=87) attending the University of Abertay Dundee. This latter group was to function as a control for the possibility that people without any nurse training can identify similar patient care priorities.

2.6.2 Procedure

Permission to recruit the nursing students had previously been given by the Principal of the School of Nursing and Midwifery, and therefore, the class were approached at a time agreed with their class tutor. Similarly, the behavioural science students were recruited at the end of a scheduled lecture, as previously agreed with their course tutor. As the trained nursing staff worked across six different medical wards, and at any point in time could be on one of four shifts, it was not possible to gather them all together in order to undertake the recruitment and administration of the simulation. Therefore, postal recruitment was judged to be the most appropriate approach for this group.

Each participant was provided with an introductory letter outlining the study and what was required, the simulated case-load with written instructions, a response grid (with worked example) and a sheet recording some basic biographical information (Appendices II, IX, X, XII, XIV, XV). This was particularly important to exclude any nursing students who had undertaken a previous training, and also any of the behavioural science students who had any significant caring experience, either trained or untrained. In this way, one could be confident that the groups actually represented the levels of experience assumed in the study design. The simulated case-load was modified for the behavioural science students to include brief lay definitions of some of the medical/nursing terms (Appendix XI). The participants were reassured that there were no correct answers and that what the researcher was interested in was their particular response. This reassurance was given to try and minimise the potential for any distortion in the participants' responses (Barker, 1991b), reducing the likelihood that the participants would give the researcher the answer that they felt was being sought, thus minimising social desirability bias. In addition, the participants were asked not to discuss the exercise with one another or with any family or friends, as this might result in responses that were not the participants own.

To control for any effects of the order of presentation of care activities or patients in the simulation, the presentation of patients, and care activities, was randomised. A number of different versions of the vignette were prepared which all contained the same 'patients' and the same 'care activities', however, they differed in that the order in which patients were described varied, and additionally, the order in which each patient's care activities were listed also varied.

A reminder to return the exercise was sent out approximately three weeks after the exercise was distributed in order to improve return rates (Appendix XVI).

2.6.3 Analysis

The results from the exercise were tabulated and entered into SPSS for Windows version 9.00 for subsequent analysis.

2.6.4 Results

The number of completed simulations returned was broadly similar for each group, although the percentage return rate was particularly disappointing for the behavioural science students. Table 2-6 indicates the simulation completion rates, identifying both the actual number of completed responses and those that were suitable for analysis. Seven responses were discarded from the behavioural science group, as four had previous caring experience, and three were incorrectly completed. Three of the junior students' responses were also incorrectly completed. Similarly for the senior students, five were second level nurses undertaking conversion to first level, and four responses had been incorrectly completed. Six of the responses from the trained staff were also incorrectly completed, and so were not included in the analysis.

<i>Group</i>	<i>Actual responses: Usable responses:</i>	
	<i>N (%)</i>	<i>N (%)</i>
Behavioural science students	27 (31.0)	20 (23.0)
Junior students	25 (62.5)	22 (55.0)
Senior students	25 (67.6)	16 (43.2)
Trained nursing staff	33 (66.0)	27 (54.0)

Table 2-6: Completed responses (actual versus usable) from each of the four groups

The following tables (Tables 2-7, 2-8) indicate the proportion of female/male participants in each group and also the mean age of participants.

<i>Group</i>	<i>Female:</i>	<i>Male:</i>
	<i>N (%)</i>	<i>N (%)</i>
Behavioural science students	17 (85)	3 (15)
Junior nursing students	19 (86)	3 (14)
Senior nursing students	16 (100)	0
Trained nursing staff	27 (100)	0

Table 2-7: Gender of participants in each participant group

<i>Group</i>	<i>Age (years)</i>
	Mean (SD)
Behavioural science students	22.9 (8.4)
Junior nursing students	24.7 (5.8)
Senior nursing students	28.5 (9.8)
Trained nursing staff	28.5 (6.9)

Table 2-8: Mean ages of participants within each group

The senior nursing student and trained nursing staff groups were exclusively female with approximately 15% of the other two groups being male. The groups were also fairly similar in age. It should also be noted that the amount of experience since qualification for the trained staff ranged from 1 month to 23 years (median-14 months).

Participants' responses were coded so that each patient and care activity had a unique identifier, i.e., helping Fred with his shower became 1a, checking John's blood pressure became 2c and so on (Appendix XVII). Once coded, the results were tabulated for each group. Table 2-9 gives an example for the junior students.

	<i>Care activity</i>											
	1a	1b	1c	2a	2b	2c	3a	3b	3c	4a	4b	4c
Participant Identifier	<i>Assigned rank</i>											
1	9	7	8	10	12	11	5	4	6	1	2	3
2	11	1	12	9	8	3	2	10	5	7	4	6
3	5	4	6	3	2	1	9	8	7	11	12	10
4	6	3	11	12	2	1	8	7	10	5	9	4
5	3	6	11	10	5	2	1	8	8	4	12	7
6	9	3	10	2	11	1	4	12	5	7	6	8
7	5	4	9	1	2	3	12	11	10	8	7	6
8	9	8	12	1	6	2	5	4	3	7	11	10
9	4	2	12	5	6	1	3	10	9	8	11	7
10	5	3	12	1	4	2	8	7	6	10	9	11
11	2	8	12	4	5	3	7	6	1	9	11	10
12	3	7	11	10	4	8	6	5	12	2	9	1
13	7	3	8	2	6	1	10	11	9	4	12	5
14	1	2	9	6	5	7	12	10	11	4	8	3
15	4	5	6	2	1	3	12	10	11	8	9	7
16	4	2	12	8	9	1	3	10	11	5	7	6
17	5	2	9	7	6	8	4	3	1	11	12	10
18	7	8	4	1	11	6	3	2	12	9	5	10
19	8	7	12	1	3	2	4	10	11	5	9	6
20	10	11	6	1	2	3	5	4	9	12	7	8
21	9	4	8	2	10	1	6	11	5	7	3	12
22	9	2	11	8	7	1	4	10	3	12	6	5

Table 2-9: Junior students' ranking of priorities for each care activity

Kendall's coefficient of concordance (W) was used to determine the extent of the agreement within each group in respect of the priorities assigned to the care activities for the simulated case-load (Table 2-10). Kendall's W can range from 0 (no agreement), to 1 (complete agreement) (Howell, 1992). Siegel & Castellan (1988) suggest that this statistic is particularly useful in studies of interjudge reliability.

	<i>Behavioural science students</i>	<i>Junior students</i>	<i>Senior students</i>	<i>Trained nurses</i>
N	20	22	16	27
Kendall's W ^a	.305*	.238*	.406*	.281*
Chi-Square	67.115	57.602	71.436	83.579
df	11	11	11	11

^aKendall's Coefficient of Concordance

* p ≤ 0.0005

Table 2-10: Level of agreement within each group regarding prioritisation of care activities

It can be seen that, within each group, there is a greater level of agreement regarding the ranking of the care activities than would occur by chance.

By identifying the median order, or priority given by each group to each care activity, the identification of a representative response from each group for each of the care activities was possible. This is shown in table 2-11. A Kruskal-Wallis test, a non-parametric ANOVA, was used to test for significant differences between the groups, in respect of each care activity. Siegel & Castellan (1988) state that non-parametric tests are appropriate for analysing data that are inherently in ranks. This technique tests the null hypothesis that the *k* samples come from the same population, or from identical populations with the same median. If the alternative hypothesis is true, at least one pair of groups has different medians (Siegel & Castellan, 1988).

	<i>Care Activity</i>											
	<i>1a</i>	<i>1b</i>	<i>1c</i>	<i>2a</i>	<i>2b</i>	<i>2c</i>	<i>3a</i>	<i>3b</i>	<i>3c</i>	<i>4a</i>	<i>4b</i>	<i>4c</i>
<i>Group</i>												
Behavioural science students	8.0	3.0	10.0	8.0	6.0	2.0	3.5	6.0	8.5	10.5	5.0	6.0
Junior students	5.5	4.0	10.5	3.5	5.5	2.0	5.0	9.0	8.5	7.0	9.0	7.0
Senior students	6.5	5.0	12.0	2.0	8.0	1.0	5.0	8.0	8.5	7.5	7.5	8.0
Trained nursing staff	9.0	4.0	7.0	2.0	9.0	2.0	4.0	8.0	7.0	7.0	9.0	7.0
H	6.89	1.94	7.91	16.56	7.76	10.44	3.56	6.47	1.39	7.85	3.11	2.1
p	0.075	0.584	0.048	0.001	0.051	0.015	0.313	0.091	0.707	0.049	0.375	0.553
df	3	3	3	3	3	3	3	3	3	3	3	3
			*	**		*				*		

Table 2-11: Median priority for each care activity assigned by each group

* p<0.05, ** p<0.01

From table 2-11 it can be seen that significant differences are associated with care activities 1c, 2a, 2c, and 4a (Appendix XVII).

A further observation was that within all groups there were participants who tended to organise the care activities by patient, whilst others tended to take a more task-orientated approach. This was defined by looking at those care activities that were carried out consecutively for a given patient, i.e., if care activities 3a, 3b, and 3c were carried out fourth, fifth, and sixth then this was categorised as being patient-oriented. Table 2-12 indicates the extent to which this was apparent in each of the four groups.

<i>Group</i>	<i>Care focussed on patient rather than task for -</i>	<i>All patients</i>	<i>3 patients</i>	<i>2 patients</i>	<i>1 patient</i>	<i>No patients</i>
Behavioural science students		2	0	0	2	16
Junior students		3	1	4	5	9
Senior students		2	1	4	4	5
Trained nursing staff		6	4	8	7	2

Table 2-12: Extent of patient versus task orientated approaches within and between groups

From table 2-12 it can be seen that across all groups there are some individuals who are completely task or patient orientated, however, with increasing nursing experience there is a move towards a more patient centred approach. In order to analyse this data further, the categories were collapsed into those that represented a totally task-oriented approach

and those that did not (Table 2-13). A Chi squared test gave a statistically significant difference of $p < 0.001$, indicating a trend away from a task-oriented approach with increasing experience.

	<i>Care focussed on patient rather than task for -</i>	<i>One or more patients</i>	<i>No patients</i>
<i>Group</i>			
Behavioural science students		4	16
Junior students		13	9
Senior students		11	5
Trained nursing staff		25	2

Table 2-13: Task orientation versus a more person centred approach to care

$\chi^2=26.15$; $df=3$; $p<0.001$.

2.6.5 Discussion

The aims of this study were to explore the decision-making associated with the management of several patients, and specifically to consider if it was possible to detect the priority setting behaviour that is said to be so essential to competent and professional nursing practice. A further aim was also to elicit differences between ‘novice’ and ‘expert’ nurses. The conclusions from this study are presented below.

Throughout the following chapters, the discussion section of each will be considered under the headings - Key Findings, Other Findings (where appropriate), Strengths of the Study, Limitations of the Study, and Implications.

2.6.5.1 Key Findings

The exercise required the ordering of twelve care activities in terms of temporal sequence, that is, the participants in each group were asked to say what they would do first, then second and so on. Kendall’s coefficient of concordance (Table 2-10) indicates that there is a level of homogeneity of responses within each group in this regard. To put it another way, there is a certain level of agreement within each group about the order that the care activities should be placed in. However, within each group there are also differences in the order in which care has been allocated.

Kendall’s coefficient of concordance suggests that this agreement is greatest in the senior student group. According to Benner (1984) nurses at novice/advanced beginner levels are directed to a large extent in their decision making by a repertoire of rule-based

actions. It is also the case that the senior students have sufficient clinical experience to permit them to recognise certain aspects of the cases in the simulation. Taken together, the agreement in this group may indicate that they are applying similar rule-based actions to the resolution of the problem presented to them. This contrasts with the junior student group who have at this stage very limited clinical experience, and who might yet have to develop an understanding of the rules that govern practice at this level. Correspondingly, a much lower level of agreement is noted in this group. The trained nurses also have a surprisingly low level of agreement. Nurses at this level who may be expected to be functioning at competent, proficient, or even expert level, are no longer as dependent upon rule-based actions to guide their decision making (Benner, 1984), and may seek to develop novel and unique solutions to the problems they face in practice whilst still broadly agreeing what these problems are. Furthermore, there may be an element of disagreement in respect of the strategies and interventions required to reach a satisfactory solution, and the order in which this is best achieved, whilst still acknowledging the solution to be an acceptable one. However as the numbers in each group are small, caution must be exercised in attributing too much to these results. It should also be noted that the non-nursing group, i.e., the behavioural science students had a level of agreement that was greater than both the junior students and trained nurses. This may indicate a failure in the simulation to discriminate between nurses and non-nurses.

Having noted that there was a significant level of agreement within the four groups studied, it is also clear that there are a number of differences between groups. An analysis of variance showed that there were significant differences in the ranking of the care activities between groups, and that these differences relate to care activities 1c, 2a, 2c, and 4a (Table 2-11). Whilst the results indicate that differences do occur, and where these differences are located, they are unable to identify what these differences signify.

It is also interesting to note that there appear to be many more similarities than differences between groups. It is important to consider what may account for these similarities between groups. It is possible that some aspect of the structure of the simulation 'encourages' certain care activities to be undertaken before others. If this is so, then the data do not represent the participants' prioritisation but instead are an artefact of the simulation structure. However, there is no evidence that this in fact occurred, and this hypothesis would require further study. It is also possible that certain care activities do not require a significant degree of nursing knowledge or skill, and therefore, do not adequately challenge the more experienced participants, thus masking

real differences in priority setting between groups. Furthermore, even though different groups may have placed certain care activities in a similar order, this does not imply that they have decided to do so based upon the same information, or using the same criteria. It is also unclear to what extent differences between groups represent a higher priority being given to particular care activities rather than to a particular patient.

One explanation for the differences between novice and expert may be, that a novice attends to those activities that they feel competent to undertake, leaving the more difficult until later. A further possibility is that participants may attend to those activities, or patients, which they like or dislike, either seeing to them first or last. This latter possibility is reminiscent of the literature on 'good and bad patients' such as Stockwell (1972), Lorber (1975) and Kelly & May (1982).

2.6.5.2 Other Findings

It was interesting to find that certain individual participants in all groups appear to favour a person orientated approach to caring, that is, they would attend to all the required care for a particular patient at the same time (Tables 2-12, 2-13). This was despite the obvious emphasis placed in the simulation instructions on tasks/care activities. This tendency to adopt a person-orientated approach over a task orientated approach increased with greater nursing experience. This may suggest a number of possibilities. Firstly, as some participants in all of the groups studied adopted this approach, it suggests that some individuals favour a more holistic problem-solving strategy over a more incremental approach. Secondly, as there was a shift towards a person orientated solution with greater nursing experience, this may suggest that some feature of increasing clinical experience and/or nurse training provokes a change in the approach adopted when faced with such problems. However, as this was not a longitudinal study, care must be taken in respect of this finding.

2.6.5.3 *Strengths of Study*

The main strength of the study was that the study design allowed comparisons between groups with demonstrably different levels of nursing experience, including a group of non-nurses. This permitted the testing of the initial hypotheses, that prioritisation in care planning does occur, and that there are differences in priority setting between nurses with varying levels of experience.

A further strength of this study lies in the fact that the simulated case-load was created from patient vignettes drawn from actual clinical practice. As discussed in section 2.3.1 the issue of the validity of vignettes in simulation methods is a key one, and steps must be taken to ensure the reality of such tools if the results and conclusions are to be meaningful. By drawing the vignettes from real cases the validity of the current study was increased.

2.6.5.4 *Limitations of Study*

As noted previously the range of experience of participants in the trained group varied from 1 month to 23 years (median-14 months). In respect of Benner's five-stage model of skill acquisition, this group possibly contained representatives from the competent, proficient, as well as expert levels of nursing skill. The trained nurse group, therefore, may not represent a single level of experience but rather several. It is likely that more rigid criteria for inclusion into this group could have produced greater differences. One readily available set of criteria that could be employed in future work is that of the current nurse grading system which separates clinical nurses into four main grades, namely junior staff nurses (D grade), senior staff nurses (E), Charge Nurses (F) and Senior Charge Nurses (G).

It also cannot be assumed that the responses given in the simulation reflect the decision-making that would occur in actual clinical practice. There may be more stress placed upon the individual when dealing with 'live' patients, with real problems, in a situation in which the consequences of making decisions are concrete rather than abstract. In addition, extraneous or unexpected factors in a clinical setting may interfere with, or indeed facilitate, the ideal solution in a way that is not present in a simulation exercise.

A note of caution must also be included regarding the sample sizes and response rates for the study. It is important to be aware that small samples increase the risk of making type I and type II errors. The sample sizes were small and may not be representative of

their parent populations. Poor response rates may also be associated with bias, as those who respond to questionnaires may not represent a truly random subset of the population (Parahoo, 1997; Polit, Beck, & Hungler, 2001). However, Fife-Shaw (1995) suggests that there is no absolute answer to what constitutes a good response rate, and that data from studies with lower response rates may still yield useful information.

A final limitation of this initial study is that the method did not permit access to the cognitive processes of the participants as they set their priorities, nor did it allow exposure of the influencing factors that are taken into account when setting priorities.

2.6.5.5 Implications

This study confirms that priority-setting behaviour associated with nurses' clinical decision-making can be identified and studied. It has also shown that this can be elicited through the use of simulated case-loads. Furthermore, it has been demonstrated in this study that priority setting differs between nurses with varying levels of experience. These findings are important because they suggest that the current position, in which priority setting is regarded as an important nursing skill, and yet has not been subject to systematic study, is no longer acceptable.

2.7 Conclusion

It is intended to build upon the work done to date, and to explore further the processes by which student and trained nurses set clinical priorities in a number of ways. It is necessary to identify more clearly, sub-categories of participants within the trained nurses group. This is not a homogenous group and it may be important that future work is more exact regarding membership of this category. The suggestion has been made that in UK studies this should be done through the current clinical grading structure.

In further exploring priority setting, think-aloud methods may have something to offer. Think-aloud techniques have been used to elicit differences in problem-solving in a number of different fields, and it has been suggested that this would be an appropriate research technique for nursing (Jones, 1989). By thinking aloud whilst undertaking a problem-solving activity a verbal protocol of the decision-making process is generated. These verbal protocols would permit a more detailed study of the strategies and criteria being used by participants as they attempt resolution of the priority-setting problem. Again a comparison between student and trained nurses will be possible. Fonteyn, Kuipers, & Grobe (1993) suggest that the think-aloud method provides 'rich, in-depth

data from a small sample' and it is therefore intended that the sample will consist of two participants in each of the following categories; junior students, senior students, recently qualified first level nurses; experienced first level nurses. This study will be the focus of chapter three.

It is also necessary to examine priority setting as it occurs within the 'real' environment of the clinical area. In taking the study of priority setting into the clinical area it will allow a comparison between the stated responses of participants in a controlled, safe, laboratory-type setting, with the reality of planning and implementing care for several patients in a clinical setting. This study will be presented in chapter four.

Chapter Three

Exposing Priority Setting

3 Chapter Three: Exposing Priority Setting

3.1 Introduction

From chapter two it was seen that the use of vignettes, in the form of a simulated case-load, has established that priority setting can occur in relation to the temporal organisation of care. The findings also suggested differences between learner and trained nurses. However, these findings do not permit detailed examination of what is happening when nurses set priorities of care, nor do they help in understanding the factors and influences that may affect decision making in relation to clinical priority setting.

The second study will therefore explore these aspects of priority setting. It will use the vignettes from the previous phase of the study combined with think-aloud methods to explore the nature of the decision making of learner and trained nurses when setting priorities. Priority setting will then be further explored using qualitative research interviews.

3.2 Aims of Think-aloud Study

The principal aims of this phase of the study were to –

1. Identify and investigate the criteria and strategies used by learner and trained nurses to prioritise care when they are presented with a simulated case-load of four patients.
2. Explore those factors that influence this prioritisation.

These were investigated using two approaches, namely think-aloud method and semi-structured interviews. Both of these research methods will be reviewed in the following section.

As previously stated, a number of concerns have been raised regarding the validity of simulation methods (Lanza, 1990; Lamond et al., 1996). It was considered important, therefore, to investigate further, the validity of simulation methodology as a tool for exploring novice/expert differences. This was undertaken using expert panels. In addition, the results from this phase of the study would inform the aims and planning for the final phase of the study that would investigate priority setting in actual clinical practice.

3.3 Methodological Issues

In this section three methodological issues particular to this phase of the study will be examined, namely –

1. Think-aloud method as an approach to the investigation of decision-making.
2. The use of interviews as a research method.
3. The construction and use of expert panels as a means of validating research techniques and findings.

3.3.1 Theoretical Basis of Think-Aloud Method and its Use in the Study of Cognitive Processes and Decision-Making

In this section a review of the theoretical basis of think-aloud method will be carried out prior to evaluating approaches to the analysis of think-aloud data. The section will conclude with a discussion of the possible limitations of think-aloud method.

3.3.1.1 General Introduction

From the early 1930's, psychologists have used think-aloud (TA) method for investigating problem-solving (Ericsson & Simon, 1984, 1993; Someren, Barnard, & Sandberg, 1994; Gilhooly & Green, 1996). In TA, the participant is asked to verbalise overtly all thoughts that would normally be silent. They are not asked to explain or justify what they are doing, nor are they asked to report their strategies (Gilhooly & Green, 1996). The job of making sense of the think-aloud data is that of the researcher (Dube, 1995; Gilhooly & Green, 1996). The action of thinking aloud whilst completing a task is one that is fairly common in young children and not unknown in adults (Gilhooly & Green, 1996), for example, consider a child engaged in some mental arithmetic, or an adult similarly learning to drive a car. In both examples it is not uncommon for the learner to think out loud whilst attempting to work their way through the 'problem.'

There are two possible approaches to using think-aloud method; the first is to use concurrent verbalisation, and the second is to use retrospective reporting. In the former the participant thinks aloud whilst completing the task, whereas in the latter the reporting takes place after completion of the task. Concurrent reports are considered to be a more valid and reliable source of internal cognitive processes than retrospective reports (Ericsson & Simon, 1993). Ericsson and Simon suggest that these reports identify information of immediate concern to individuals whilst engaged in reasoning

about a problem. Retrospective reporting is potentially less reliable for a number of reasons: the delay between task and reporting is likely to result in incomplete reports, as the participant experiences forgetting (Someren et al., 1994; Gilhooly & Green, 1996); the participant may include in their reporting, information that was gained prior to, or subsequent to, the actual cognitive task (Ericsson & Simon, 1993); there is also a tendency in retrospective reporting to explain rather than just to report (Someren et al., 1994). However, retrospective reporting may be accurate for tasks that can be completed in 0.5 – 10 seconds, and may be particularly appropriate for the study of certain psychomotor tasks where even the minimal delay associated with concurrent reporting might have real and dangerous consequences, e.g., formula one racing. The resultant data generated from think-aloud activity is referred to as a verbal protocol (VP).

The theoretical origins of TA method lie within the Information Processing Model and human cognition (Newell & Simon, 1972) (see figure 3-1). This model depends on the staged theory of memory in which information is stored in memories having different capacities and accessing characteristics. Short term, or working memory, has a limited capacity with intermediate duration, and long-term memory has a very large capacity and relatively permanent storage, but which, however, has slow fixation and access times. A modern analogy would be that of the PC. The hard disk drive of a computer can hold a vast amount of information but access to that information takes a perceptible amount of time; in computer terms it takes a very long time. In contrast, the system RAM can hold much less information but it is almost immediately available to the CPU.

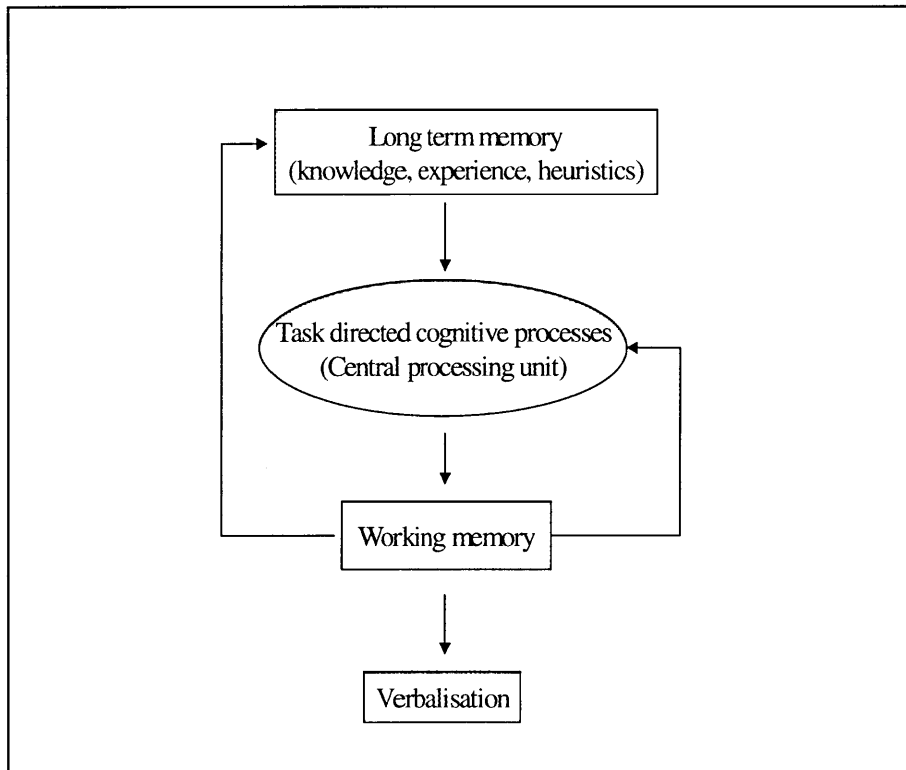


Figure 3-1: Information Processing Model (from Ericsson & Simon (1980) and Jones (1989))

Due to its limited capacity, working memory holds the information that is the current focus of attention, plus recently heeded material that is highly accessible. When solving a problem, concurrent verbalisation allows a researcher to gain access to information held in working memory and central processor. Verbalisations are seen to be a reflection of the subject's cognitive processes as they come to the level of consciousness whilst problem-solving.

Hayes (1981) has suggested that the use of TA method is '*cognitive psychology's most powerful tool for describing psychological processes*' (p51). It has also been suggested that this would be an appropriate research technique for nursing (Jones, 1989). Fonteyn et al. (1993) state that the TA method provides 'rich, in-depth data from a small sample.' For Jones (1989) this method allows the nurse's cognitive behaviour to be exposed, something which may not be possible in a 'real world' setting. In addition, think-aloud permits inferences to be made about an individual's accumulated knowledge and experience, as well as about the cognitive processes and strategies used.

A TA session is usually preceded by a practice session, giving the participants the opportunity to practice the TA technique (Ericsson & Simon, 1993; Green & Gilhooly, 1996). This practice exercise involves thinking aloud whilst trying to solve a problem

unconnected with the area of study. This is not usually tape-recorded. The participants are reassured that solving the puzzle is not important but rather the main reason for this activity is to practise thinking out loud. In the instructions that precede the TA exercise, participants are impressed with the need to think aloud all thoughts going through their head whilst completing the task. They are also informed that should they pause during this activity the researcher will remind them to verbalise their thoughts (Afflerbach & Johnston, 1984; Allwood, 1990).

Following the practice session the researcher will either move immediately to the main exercise or arrange to return at a mutually convenient time for this purpose. This part of the session is tape-recorded. It is best if the gap between the practice session and actual exercise are kept to a minimum so as not to lose the benefits of the former activity.

3.3.1.2 Analysing Verbal Protocols

A number of different approaches have been used to extract meaning from VP data (Dube, 1995). A brief outline of these is given in this section. All require the transcription of the TA reports, usually verbatim.

Referent Phrase Analysis (Kuipers, Moskowitz, & Kassirer, 1988; Grobe, Drew, & Fonteyn, 1991; Fonteyn et al., 1993; Fisher & Fonteyn, 1995; Fonteyn & Fisher, 1995)

In this form of analysis the verbal protocols are reviewed to identify specific nouns and noun phrases which represent the concepts that subjects were attending to whilst problem-solving. These are then coded, defined and redefined in an iterative process. Protocols are further examined to identify the types of relationships that subjects form between codes. The protocols are finally reviewed globally in the light of the concepts and relationships identified above, in order to reach a better understanding of the cognitive strategies and reasoning processes employed by the subjects under study.

Construction of a Problem Behaviour Graph (Jones, 1988, 1989)

In this approach the VP's are segmented according to meaning, each segment representing a single statement. Furthermore, each segment represents a higher level of knowledge than that held previously, and each new knowledge state is given a number code. The move from one knowledge state to another involves the application of an 'operator', that is, a mental process generating or transforming knowledge. Operators are identified by a task analysis of a sample of the verbal reports. The step-by-step progression of a subject through a problem can be shown diagrammatically as a Problem Behaviour Graph.

Content Analysis (Gilhooly, 1990; Gilhooly & Green, 1996; Green & Gilhooly, 1996; Gilhooly et al., 1997)

Verbal reports are segmented into discrete chunks or phrases. These segments are then coded. The coding may be derived from a prior theoretical framework, or it may be necessary to extract the coding categories from the data (Greenwood & King, 1995). The process of categorisation is an iterative one with similar categories being grouped together as major categories or themes. The coded protocols may then be subjected to statistical analysis if this is appropriate, or alternatively the approach to analysis may be more qualitative in nature, adopting a position somewhere between description and interpretation as appropriate. Someren et al. (1994) suggest that this approach to analysing VP's is not dissimilar to the analysis of interview texts.

The approach to analysis that one chooses to use is to a large extent dependent upon the nature of the research question(s) one is attempting to answer.

3.3.1.3 Strengths and Limitation of Think-Aloud Method

A key strength of think-aloud method is that it provides the researcher with access to the cognitions of participants whilst they are actually engaged in a problem solving activity. Concurrent think-aloud permits the externalisation of the moment-to-moment changes in the contents of working memory, and thus avoids these difficulties. Ericsson and Simon propose that the data that are generated during such think-aloud method accurately reflect the information that is being attended to by the participant during a cognitive task (Ericsson & Simon, 1980, 1993), and therefore, this method gives the researcher a 'window' on the processes, and other factors involved in respect of the problem solving task.

Other approaches to studying cognitive processes, such as observation or interview, inevitably require the researcher to engage in interpretation of, sometimes to a considerable degree, what they have seen or what their respondent has told them. Furthermore, attempting to expose the rationale that underpins a participant's decision-making by de-briefing them afterwards will be subject to the problems of forgetting, as well as the possible inclusion of additional material that was not part of the original decision-making effort. It is also worth restating that TA method does not disrupt normal processing and therefore one can be confident that the data generated by this method is representative of the cognitive activity engaged in by the problem solver during the task in hand (Ericsson & Simon, 1993; Gilhooly et al., 1997).

Graves (1995) suggests that when used to study real-time clinical practice, TA can provide a better understanding of the cognitive processes used in actual practice and the way in which domain specific knowledge is used. A further strength of this method is that by looking at how nurses reason whilst they engage in caring for patients, it can improve not only our understanding of how nurses provide such care (Fonteyn & Fisher, 1995), but can also suggest strategies for improving such reasoning.

Despite these strengths however, no method is without its limitations and think-aloud method is no exception. A number of criticisms have been made of this method and these will be considered here.

It has been suggested that TA is a flawed approach in the study of cognitive processes because the very act of verbalisation requires a cognitive effort which will preclude the subject from attending to the cognitive task under study (Nisbett & Wilson, 1977). However, Ericsson and Simon have largely repudiated this argument and have demonstrated that concurrent verbalisation does not interfere with the cognitive task in hand (Ericsson & Simon, 1980, 1984, 1993). White (1988) has also provided a substantial critique of Nisbett and Wilson's assumptions

The nature of the task itself may also have an effect on the generation of TA reports. The more complex the problem-solving activity then the more difficult it may be for a respondent to sustain a detailed verbal output. The real world of clinical nursing is normally much more complex and dynamic than any laboratory setting. There is pressure of time and recurrent interruptions. Often there are staff shortages to contend with, and multiple demands. The objects of care are real people, with real lives. Not least, decision making in the real world has immediate and potentially irreversible consequences. For these reasons it may be that the study of some problem-solving tasks may not be suitable for study in actual clinical practice, nor may TA always be the most appropriate method.

The reliability and validity of TA as a method for studying cognitive processes and problem-solving will, in part, be restricted by the limitations of the associated context in which the TA is being used. For example, if one is using TA along with patient vignettes in the form of simulation, then the limitations of simulation methodology will restrict the usefulness of TA approaches. Additionally, participating in a simulated activity for the purposes of someone else's research may result in a degree of stress that may limit their

performance. Clearly, stress also exists in the clinical environments in which participants normally function, however, there it is familiar and to an extent expected.

A potential difficulty in the analysis of VP's is that all of the approaches outlined above result in the loss of the original context in which the data was generated. In order to code and analyse verbal protocols the data is normally organised into discrete segments. In the process of segmenting the data, key information about the setting or context surrounding the problem or decision-making task may be lost. One possible resolution to this difficulty is to provide a summary of each TA report, together with any relevant field notes that would permit the context of the activity to be conveniently present whilst pursuing more detailed analysis.

Clearly, the potential use of TA in relation to developing an understanding of problem solving, reasoning and decision making of nurses is great. However, there is genuine concern regarding the use of TA in relation to the issue of confidentiality. Indeed it was for this very reason that Jones (1989) suggested that TA method was not a suitable approach for 'in-situ' study of nurses' decision making. However, with proper safeguards, it should be possible to ensure confidentiality and use TA in most clinical settings.

In summary, although the limitations of think-aloud do require that the researcher carefully consider the appropriateness of this method, the potential of the technique to expose the cognitive processes engaged in during priority setting, and those factors that may influence such processes make this method an appropriate tool. Furthermore, as suggested by (Gilhooly & Green, 1996), thinking aloud is not an unfamiliar activity to most people and with a little practice it is a method that can yield a rich source of data.

3.3.2 The Use of Interviews in Qualitative Research

3.3.2.1 General Introduction

Most people have had some experience of interviewing or of being interviewed. Indeed it would be possible for most people to identify a variety of different types of interview, for example, appraisal interviews, selection interviews, journalistic interviews, survey interviews and so on (Stewart & Cash, 1994). Interviewing can claim to be one of the most widely used research methods (Fielding, 1994; Waterman, 1998). Research interviews are usually categorised according to the degree of structure present in the interview process, i.e.,

structured ↔ semi-structured ↔ unstructured.

The structured (or standardised) interview is typified by the use of an interview schedule in which the wording and sequence of the questions is exactly the same from interview to interview. Responses can be quantified and subjected to statistical analysis. However, to permit generalisation of the findings large sample sizes are required. This type of interview is perhaps best exemplified by the opinion poll.

In semi-structured, or focussed, interviews the interviewer still has a 'script' to follow, in that major questions will have been identified, however, the interviewer has the flexibility to adapt the interview to each situation. The interviewer may alter the order of questions, and may ask follow-up questions not included in the original schedule. A key strength of this approach is that it ensures that the data collected remain relevant to the research topic (Holloway & Fulbrook, 2001).

Unstructured interviews should not be misconstrued as having no structure. Rose (1994) describes them as being unorganised rather than disorganised. Hammersley & Atkinson (1983) and Gillham (2000) state that, however open and unstructured the approach used by a researcher, any interview must be structured to some degree, by both interviewer and interviewee, because of the nature of the interaction between them. Clearly, any researcher using interviews to explore a topic already has a notion of what interests them and what they would like to find out. However, rather than asking set questions the interviewer using an unstructured technique follows a guide, indicating areas of interest. The actual questions asked, and their phrasing, is determined by the unfolding nature of the interview itself. The interviewer is free to pursue any avenue opened up during the interview that seems pertinent to the research question.

Typically, as one moves from structured to unstructured interview techniques, sample size becomes smaller, and there is lower generalisability. However, the less structured the interview the greater the resulting 'depth' of data (Fielding, 1994).

The question of whether quantitative or qualitative methods are better is not a particularly helpful one. Rather, the question should focus on which approach will be more appropriate to the research questions being asked. May (1991) indicates that semi-structured and unstructured interviews are commonly used in qualitative research studies. It is important not to become overly concerned with whether one leans more towards the semi-structured rather than unstructured point on the continuum (Rose,

1994), but rather to be open and flexible in each research study and in response to each individual interview.

Kvale (1996) states that qualitative research interviews are used to try and understand the world from the interviewee's point of view. For Edenborough (1996) the interviewee can be considered an 'expert'; by this he means someone who holds knowledge or information which is not held by the interviewer, but which is desired by them. For Waterman (1998), the qualitative research interview allows the researcher to 'explore and understand' another's experience. A key strength of interviewing as a research method is that it sets out to explore the participants' views (Marshall & Rossman, 1989).

An interview is not an ordinary conversation, although in some respects it might seem so to a casual observer (Oppenheim, 1992). Kvale (1996) and Gillham (2000) describes it as a professional conversation, that is, it is not a conversation between equal partners; it has a specific structure and purpose. It is interesting to note that Kvale also suggests that interviews may also be used as an auxiliary method in conjunction with other research methods. The use of a research interview subsequent to some other research activity, e.g., participant observation, can enrich and deepen the overall research findings.

3.3.2.2 *Sample Size*

In all research designs there will be questions regarding sample size. In structured interviews the sample size can be many thousands, as the nature of the questions, and data processing techniques, facilitate the management of large sample sizes. In semi-structured and unstructured interviews large amounts of data are normally generated, which are usually initially tape-recorded and then transcribed in a verbatim account. This approach is on the one hand very time-consuming and yet on the other it yields a level of detail not available in other methods. For these reasons the answer to the question of sample size is that one must interview as many as is necessary to find out what you need to know from the interviewees. As Sandelowski (1995, pg. 179) states '*adequacy of sample size... is relative.*' However, in practice this often results in sample sizes of 15 ± 10 (Kvale, 1996). Additionally, in-depth interviews often experience the law of diminishing returns, that is, for each successive interview less and less may be added to the body of data already gathered. In grounded theory terms, 'saturation' is reached, when nothing new is added. Finally, in response to questions of sample size it is worth remembering that single case studies can yield tremendous insights; consider the work of Freud or Piaget in this regard.

3.3.2.3 *Ethical Concerns*

There are a number of ethical issues that must be addressed when considering the use of interviews as a research method, principally informed consent, confidentiality, and the role of the researcher. Smith (1992) also makes particular reference to the personal safety of the interviewer, an issue that is especially important when conducting interviews in the interviewee's own home, however, as this did not apply in the present study it will not be referred to further.

Informed consent implies that the person giving permission has:

1. **Sufficient information.** By this is meant that the potential participant has been provided with the information necessary to make a choice regarding their decision to participate, or not. However, the question of what constitutes 'sufficient' information is not an easy one. Additionally, in many qualitative studies, the exact direction the study may take depends in part upon the most recent results. In other words, the researcher may be unable to provide the potential participant with more than an outline of the proposed study. There is also the question of the extent to which the researcher may 'contaminate' the study by giving too much information.
2. **Authority.** In complex organisations there is often a hierarchical management structure within which the researcher has to find his or her way. In seeking authority or permission to conduct research interviews, one will often have to first approach a person in a senior position to gain access to the population of interest; people in this position function as 'gate-keepers.' However, it is important to be sensitive to the possibility that there may indeed be multiple 'gate-keepers' that one will have to negotiate with (Handron, 1992; Mander, 1992; Spouse, 1997; Kennedy, 1999). It is also worth noting that not everyone will have the necessary authority to grant the permissions that are needed.
3. **Freedom.** Lastly, informed consent assumes that the individual is free to give an unequivocal yes or no to your request. They should not feel under any obligation or coercion to participate. There should not be a promise of undue benefit, or fear of some punishment or loss, whether this comes from the researcher or some other person.

Unlike many other research methods, interviews are perhaps unique in the extent to which the interviewee exposes himself or herself. As qualitative interviews appear to take the form of familiar conversations, it is perhaps not surprising that the researcher is

privileged to witness often very deep and personal accounts. It is therefore important that the researcher take great care to ensure the confidentiality of the product of the interviews, namely the tape-recording of the interview, any field notes, and interview transcripts. The researcher must also endeavour to maintain confidentiality within any written reports, papers or theses that are produced as a result of the research activity.

The final ethical point to be considered here is the role of the researcher and their relationship with the interviewee. In many research settings, the researcher and the participants may have no prior relationship with one another, and therefore in certain respects theirs may be regarded as a neutral relationship. However, it is possible that the researcher may have, or may be seen to have, some degree of power in relation to the participants in the research. For example, consider a Senior Charge Nurse (SCN) who embarks upon a research project within his or her own clinical area. Let us say that the SCN wishes to investigate the reasons why trained nurses fail to follow the hospital's infection control policy with respect to hand washing. The SCN may decide to use interviews as their principal research method and begins to approach members of staff to participate in the study. It is clear that the SCN is in a position of power and authority with respect to the potential participants. The SCN has the power to affect the day-to-day working experience of the participants, to shape their hours of work, perhaps even their prospects for promotion. In such circumstances it is possible that because of the unequal power relationship between researcher and participant that the latter may not feel free to refuse to participate. In both ethical terms, and in relation to the trustworthiness of the results, it is important to emphasise the participant's right to choose whether or not to participate without either gain or detriment.

3.3.2.4 *Conducting Interviews*

Although in many respects a research interview can be likened to a normal conversation, Kvale (1996) suggests that to produce rich and detailed interview data requires the interviewer to possess a number of attributes and skills. Such qualities include the ability to pose clear questions, avoiding the use of complex language or jargon; being sensitive and open, that is, being 'in tune' with what the interviewee is saying, thus picking up on the nuances of what is said or not said; being able to 'hold on' to the interview whilst it is in progress, which involves remembering and interpreting the interview as it proceeds, thus permitting the interviewer to probe and explore aspects of the data which arise during the course of the interview. Perhaps the qualities of a good interviewer can best be summarised as 'be prepared' and 'be flexible.'

A number of practical aspects of using interviews as a research method will now be considered. Firstly, think about the interview setting. In a general sense, the best setting for conducting an interview is one in which the interviewee feels comfortable. However, the selection of the venue for the interview must also meet some basic criteria to ensure that the interview is successful (Waterman, 1998). The venue must be one that is reasonably accessible for both interviewer and interviewee; a venue that is out of the way, or hard to find, may mean that the interviewee does not arrive. It is also important that the venue is somewhere that is unlikely to experience interruption or distractions; this may mean a quiet area away from the main workplace, or it may require informing others that an interview is being carried out and should not be interrupted. The general environment should be comfortable with adequate and appropriate furniture and lighting depending upon the level of formality or informality.

Secondly, consideration must be given to how one will record the interview. Kvale (1996) suggests four possible approaches to recording interviews, namely, audiotape recording, video-recording, note taking, and remembering. The use of video-recorders does permit the capture of more information, including non-verbal communications such as puzzled looks, however its use tends to be much more intrusive, and one might also be faced with the problem of having too much data. The use of video recording may also raise concerns in respect of maintaining confidentiality. The taking of notes during an interview may distract the interviewer from giving their full attention to the interview and the interviewee, leading to the loss of important cues or information. Whilst remembering allows one to give full attention during the interview, it does mean that one might fail to recall key information subsequently, and may be prone to the effects of selective remembering.

For the reasons cited above, audiotape recording remains the most popular and practical means of recording a research interview. Waterman (1998) suggests that the tape-recorder should be small and discrete. Once again however, it is important to be prepared; to be sure that equipment is functional and that it can produce a recording of audible quality. It is prudent to familiarise oneself with the recording equipment prior to the first interview, and to make sure that you carry spare supplies of tapes and batteries.

3.3.2.5 *Analysing Interviews*

How to proceed with analysis of data is a question that is generally best considered early in any research project, and it is no less true for analysing interview data (Burnard & Morrison, 1994). A range of approaches to analysing textual data have been described,

for example content analysis, constant comparative method, and discourse analysis (Burnard, 1991; Mackenzie, 1994; Wainwright, 1994; Burnard, 1995), however, the choice of method will in part be guided by the particular research question and theoretical perspective of the study. Qualitative research interviews allow the researcher to generate an analysis that can be somewhere on a continuum between description and interpretation (Kvale, 1996).

Although it is true to suggest that the process of analysis begins during the interview itself, the first formal procedure in the analysis is usually the transcription of the audio taped interview. It is important to note that the transcript is not the raw data; that in producing a transcript one changes the raw data, the interview, given in oral form, and converts it into a printed form, the transcript. In this transformation certain features of the interview will inevitably be lost, for example aspects of speech such as tone, volume, stress and so on (Sandelowski, 1994; Burnard, 1995). In producing a transcript one faces questions as to what level of detail is required (Sandelowski, 1994). In some studies, a summary of the interview may be all that is needed to allow the necessary analysis, however, in others, the transcript may call for a verbatim record of the interview in its entirety.

All interviews, as examples of everyday human conversation, will contain many pauses, 'uhms', 'ehrs' and so on, which can make following the interview difficult. As long as these utterances are not deemed to be significant from a theoretical perspective it is not uncommon to edit these out. Field & Morse (1985) and Morse & Field (1996) refer to these superfluous elements of data as 'dross.' However, one should only edit out the minimum necessary to render accounts comprehensible and to ensure the confidentiality of participants (May, 1998).

There has been a marked increase in the availability and use of computer software packages for analysing qualitative data (Morison & Moir, 1998; Pateman, 1998). Many such packages are now available to qualitative researchers; packages such as QSR Nud.ist, Nvivo, Ethnograph, ATLAS/Ti and others. They offer the researcher many helpful tools in the management and analysis of data, and perhaps remove some of the drudgery involved. One note of caution must be mentioned regarding the use of such packages however, and that is that such packages do not supplant the role of the researcher in the analytic process. It is still the researcher who will interpret and give meaning to the data. At best, qualitative software programs can assist the researcher in the myriad of tasks associated with analysing the data (May, 1998), at worst, they can

undermine the validity of a study's findings (Morison & Moir, 1998; Kidd & Parshall, 2000). On a more pragmatic note, a researcher may decide that they cannot afford the investment required in these tools for data analysis, as clearly, there is a financial cost to the software packages that may be beyond the researcher's resources, but there is also the not insignificant cost in time needed to learn how to use such software. In summary, such software packages are a tool to assist the researcher, however, they are not an essential one. A competent researcher can do all that such packages can offer, and more besides.

3.3.2.6 Reliability and Validity

A number of scientists view qualitative research as possessing less rigour than quantitative approaches, and as such, are at risk of rejecting, out of hand, research findings that may be both relevant and applicable to clinical care (Hinds et al., 1990). Indeed, issues of reliability and validity in qualitative research are often glossed over (Appleton, 1995). Kvale (1996), Parahoo (1997) and Cutliffe & McKenna (1999) caution against the use of terms and criteria developed for judging the reliability and validity of quantitative research findings in assessing qualitative research. They suggest instead that it is more appropriate to make use of concepts such as accuracy, credibility, representativeness and confirmability. Cutliffe & McKenna (1999) suggest that the key goal is to establish the trustworthiness of qualitative research findings.

Valid interview data are those that accurately portray what the investigator is attempting to study (Hutchinson & Wilson, 1992), and rely in part upon the trustworthiness of the respondents' reports and the quality of the interviewing itself. Much depends upon the quality of the craftsmanship displayed by the researcher. This craftsmanship being evident during the preparation prior to the interview, the interview itself, and the analysis, with the researcher continually checking, questioning, and theoretically interpreting the findings. Furthermore, the credibility of the researcher may also be an important aspect of the attribution of validity to the research by others (Kvale, 1996).

However, a number of factors may threaten the validity of interview data. One such threat is that of irrelevant questions. These may arise from the researcher's past experience, favourite concepts or theories, or the existing literature, rather than cues from the respondent. Hutchinson & Wilson (1992) suggest that interview questions should flow from the general to the specific. It is also important that the interviews take place at an appropriate and convenient time, for the respondents as well as the interviewer, as well as leaving sufficient time for the interview, not forgetting

explanations, greetings, closure etc. The place in which the interview is conducted may affect the validity of the data. An environment that is comfortable, quiet, and not prone to interruptions will facilitate a successful interview and enhance the validity of the data. Interviewers must guard against unconsciously influencing respondents by inappropriate behaviours such as allowing strong feelings, positive or negative, to be evident. Nurses may have particular problems as interviewers in that they may assume the caring role at the expense of the research role. Respondent behaviours too can undermine the validity of the interview, with the respondent shifting the focus of the interview away from them and onto the interviewer.

Burnard (1991) and Appleton (1995) propose that validity can be enhanced when analysing qualitative data by enlisting the help of a colleague, asking them to act as a second rater, and/or by member checking, in which the interview transcripts and/or the researcher's analysis are reviewed by the respondents. However, Cutliffe & McKenna (1999) express concern that this may run contrary to the qualitative paradigm, as it appears to suggest that the more people that agree with the analysis and interpretation, the more 'truth' that is present in the findings.

Perhaps the most useful indicator of credibility in qualitative research findings is when the readers of the study recognise experiences, finding them meaningful and applicable (Cutliffe & McKenna, 1999; Carter & Porter, 2000).

Finally, the interviewer should not neglect practical issues, such as, ensuring that the interview can be adequately recorded and that the recording is audible, or the interviewer's notes legible. Determining validity or credibility is irrelevant if there is no interview to analyse!

3.3.3 Expert Panels

The use of experts and expert panels in many areas of life is relatively familiar. The expert witness in a court of law, for example, or the use of groups of experts to establish clinical guidelines for practice, is well established. A search of the Cumulative Index Of Nursing And Allied Health Literature (CINAHL) for the use of the terms 'panels of experts' or 'expert panel(s)' demonstrates a substantial increase in their use over the last ten years. Table 3-1 illustrates the extent of this increase.

	<i>'Panel of experts'</i>	<i>'Expert panel(s)'</i>
1990	2	8
1991	11	19
1992	17	22
1993	25	12
1994	66	35
1995	90	24
1996	110	26
1997	127	25
1998	165	23
1999	160	18
Total	773	212

Table 3-1: Frequency of terms 'panel of experts' and 'expert panel(s)' found on CINAHL, limited by year.

However, if a search is conducted using these terms within the title field of the CINAHL record, only forty-three hits are found for 'expert panel(s)' and five hits for 'panel of experts.' Of these 'hits' only eight papers appear to take the use of such panels as the main theme of the paper, with the majority of the remainder being reports produced by expert panels.

Therefore, it would seem that whilst there appears to be an increasing use of expert panels within the literature, most papers seem to take for granted the utility of such panels. Furthermore, the majority of the literature fails to address key questions regarding the construction and use of expert panels in research. Jasper (1994) seems to stand alone in raising questions about the use of the term expert. In this section a brief review of the current use of expert panels will be undertaken.

How then are panels of experts convened, for what purpose, and what are the criteria for membership of such a panel?

In considering the purposes for which expert panels are convened, a number of different ends can be identified. Expert panels may be convened for the purposes of providing expert opinion, for example, in respect of clinical practice or the efficacy of a new treatment (Coulter, Shekelle, Mootz, & Hansen, 1995; Rubenstein et al., 1995; Ayanian, Landrum, Normand, Guadagnoli, & McNeil, 1998; Wietlisbach, Vader, Porchet, Costanza, & Burnand, 1999; Scheffer & Rubenfeld, 2000). They may also be used in the development of research tools, such as in the development of vignettes or simulations

(Fielding & Page, 1978; Johannsson & Wertenberger, 1996). A further use of expert panels is in determining the validity of such tools. Cioffi & Markham (1997), used a panel of experts in order to ensure external validity when constructing the study simulation in her research on clinical decision-making by midwives. Lanza (1988, 1990); Lanza & Carifio (1990); Grobe et al. (1991) and Dowding (2001) all used a panel of experts to determine the content validity of their simulations. Flaskerud (1979) also used experts who had published research or presented conference papers on the topic of interest to establish the validity of her vignettes. Dowding (2001) also used an expert panel to assess the quality of care plans produced by participants in her study.

The criteria for membership of a panel of experts are often not reported (Fielding & Page, 1978; Lanza, 1990; Lanza & Carifio, 1990; Johannsson & Wertenberger, 1996; Cioffi & Markham, 1997). Peer review has been used to identify necessary expertise (Flaskerud, 1979). However, this may be regarded as somewhat subjective, with questions remaining over the basis upon which such judgements are made. For Lanza (1988, pg.348) the principal criterion for judging the panel members to be 'experts' in her study investigating patient assaults on nurses, was that the experts were '*intimately acquainted with the problem of patient assault.*' 'Intimately acquainted' for Lanza, meant that the panel members had either themselves been the victims of assaults, or worked in areas where this was a recurrent problem. Sherrill & Montelione (1990) established criteria for convening a panel of national experts in their study investigating the prioritising of adapted physical education goals for handicapped students. They outlined three criteria for their selection, namely, 15 years or more experience of teaching graduate courses, author of a major textbook in subject area and/or major researcher-writer in professional preparation, and involvement in national committee developing professional competencies for the speciality. Couchman & Dawson (1995) also raises the question of how up to date the so-called expert actually is.

Many studies do not report the size of their expert panel (Lanza, 1988; Sherrill & Montelione, 1990; Grobe et al., 1991; Johannsson & Wertenberger, 1996), however those that do, report panel sizes of between ten and seventeen members (Fielding & Page, 1978; Flaskerud, 1979; Lanza, 1990; Lanza & Carifio, 1990; Cioffi & Markham, 1997).

To summarise, expert panels are often used in research studies, principally to validate research tools or findings. However, the extent to which such panels possess the appropriate expertise at the required level is a question that often remains unanswered,

as many studies do not provide sufficient detail regarding the constitution of their panel of experts. Furthermore, many studies fail to clearly indicate the means by which expert panels have undertaken the task in hand.

3.4 Study Design

In this section an overview of some of the key design features of this phase of the study will be given. Firstly, the study depends upon having a range of participants who have different amounts of experience and are functioning at different levels. It is therefore important that appropriate participants are recruited, and the strategy for achieving this will be discussed. Secondly, the two principal methods, namely, combining the simulated case-load with TA, and the semi-structured interview will be described. Lastly, the construction and use of the expert panels will be outlined.

3.4.1 Recruitment

In order to explore the full array of novice/expert differences, participants representing a range of functional levels as described by (Benner, 1984) were recruited to the study (Table 3-2).

<i>Group</i>	<i>Presumed Level</i>	<i>Number (n)</i>
Junior student nurses (Term 2, P2000)	Novice	2
Senior student nurses (Term 6, P2000)	Advanced beginner	2
Junior staff nurses ('D' grade)	Competent	2
Senior staff nurses ('E' grade)	Proficient/expert	2

Table 3-2: Participants in think-aloud exercise.

The junior students were in their second theory block having completed their first clinical placements some weeks before. These placements had involved three weeks in each of a range of community settings, namely a nursery, a residential home, and a health centre. They were, at this stage therefore, relatively inexperienced, and had not yet had any hospital-based experience. They were regarded, therefore, for the purposes of the current study as representing novices. The term six students were approaching the end of second year, and were now in the adult branch part of their programme. They had experience of a large range of different clinical placements, including a setting similar to the one being portrayed in the simulation, and for the purposes of the current study would be regarded as functioning at advanced beginner level. Junior staff nurses at 'D' grade represented practitioners at the competent level moving towards proficiency. Finally, senior staff nurses at 'E' grade were presumed to be at least proficient possibly

moving on to the level of expert (Table 3-2).

At the time of the study, both term two and six students were currently in the School of Nursing and Midwifery undertaking a theoretical component of their course. As support, in principle, to carry out the research study had previously been given by the Principal of the School (Appendix VIII), verbal confirmation to approach these specific classes to recruit a limited number of students to this phase of the study was sought and given from the Vice-Principal (Academic). Their class tutor was asked if they could be approached, and at a mutually convenient time, the researcher entered each class and asked for two students from each class to assist in a research study looking at how nurses organised their work. No detailed explanations were given at this stage, and students were asked to contact the researcher if they wanted further information.

Further to this, interested students approached the researcher and a brief explanation of what the study involved was given. As the researcher was also a Lecturer in the students' School of Nursing at the time of the study, and therefore could be viewed as having a potential relationship of power in regard to the students, it was important to be confident that the students understood that participation was voluntary and that no advantage or disadvantage would result from their subsequent decision to participate or not. All students appeared to be happy to participate, giving their verbal consent, and arrangements were made to see each student individually at a mutually convenient time.

Recruitment of trained staff into the study was by a combination of personal recommendation, followed up subsequently by personal approach. As in chapter two, trained staff were drawn from those working in a local teaching hospital, located in the North East of Scotland. The Director of Nursing had previously given permission for the researcher to have reasonable access to wards and staff for the purpose of undertaking the study (Appendix XIII). A Senior Charge Nurse within a female medical ward at the study hospital was approached and given a brief outline of the current study. She was asked if the researcher could approach both 'D' grade and 'E' grade nurses to ask if they would be willing to participate in the study. The SCN identified those staff that fitted the criteria of 'D' and 'E' grade nurses, and the researcher then made a personal approach to the individuals concerned. Again, a brief outline of what would be involved was given, verbal consent was sought, and all the trained staff that were approached agreed to participate. Arrangements were made to meet them individually at a mutually convenient time.

3.4.2 Combining the Simulated Case-load with Think-aloud Method

3.4.2.1 Aims

In the first phase of the study, a vignette representing a simulated case-load was used to demonstrate limited aspects of priority setting. However, as indicated in the introduction to chapter three, further work was required to investigate the nature of priority setting, and the extent of differences in this skill, in learner and trained nurses. It was therefore, the intention in combining the vignette representing a simulated case-load with the TA activity to –

1. Explore the process of decision-making associated with prioritising care.
2. Identify factors that impinge upon, or are taken account of, in organising a complex case-load.

3.4.2.2 Equipment

During the think-aloud activity a Marantz mains operated tape-recorder was used to record the participant's responses. As far as was possible, this was placed in an unobtrusive position with only the microphone visible. This was done to try and reduce any anxiety associated with the taping of the session, bearing in mind that the think-aloud activity and subsequent interview, were likely to be stressful in and of themselves. The exercise schedule, response sheets and a pencil were provided for each participant to enable them to undertake the problem-solving activity as was the case in phase one of the study (Appendices II, IX, X).

3.4.2.3 Procedure

In undertaking this phase of the study, the simulated case-load as presented in chapter two was again used. However in addition, on this occasion participants were asked to think-aloud as they attempted to complete the prioritisation exercise.

In order to familiarise the researcher with the protocol and equipment for conducting the TA study, a 'test-run' was carried out with two individuals who would not participate in the main study. No changes to the proposed protocol were suggested as a result of these 'test-runs.'

The protocol for conducting the TA exercise was similar to that used by Svenson (1989) and Ranyard & Abdel-Nabi (1993). The participants were seen individually in a quiet,

comfortable room at a mutually convenient time. Upon meeting, a further brief explanation was given, and an opportunity to withdraw was offered. None of the participants sought to withdraw from the study. Permission was also sought of the participant to tape-record the session to facilitate later analysis, to which all agreed. Confidentiality was assured.

The conduct of the TA study was composed of two parts, namely –

1. A practice session. This involved thinking aloud whilst trying to solve two 'simple' non-nursing problems (see Appendix XVIII). This was not tape-recorded. The participants were reassured that solving the puzzles was not important but rather the practice of thinking out loud was the reason for this activity.
2. The TA component. In the instructions, participants were impressed with the need to think aloud all thoughts going through their head whilst completing the task, and were informed that should they pause during this activity the researcher would remind them to verbalise their thoughts (Afflerbach & Johnston, 1984; Allwood, 1990). It is important to avoid giving any verbal or non-verbal cues that might be considered as representing approval or disapproval of the participants' responses. To facilitate this, the researcher avoided making direct eye contact and sat slightly behind and to the side of the participants (Gilhooly & Green, 1996). In asking the participants to think-aloud during the completion of the exercise, the researcher is able to gain access to the decision-making strategies being employed by the participant. Once again, it is worthwhile noting that concurrent reports are said to provide a more valid and reliable source of internal cognitive processes than retrospective reports (Ericsson & Simon, 1984, 1993). This part of the session was tape-recorded. Additionally, the researcher kept brief field notes during the activity.

3.4.3 Interviews

All interviews took place immediately following the TA exercise, in the same quiet setting in which the previous exercise had been completed. However, between the end of the TA activity and the beginning of the interview, a few moments were provided to allow the participant to relax and 'catch their breath.' The interviews were also tape-recorded with the participant's permission. A semi-structured interview schedule was used (Appendix XIX), which provided the interviewer with a number of key areas to be

explored, but which enabled the interviewer to develop areas further, or to pursue other avenues of interest as and when they arose. The interview guide was developed from the previous phase of the study, the existing literature regarding novice/expert differences, and the researcher's reflections on the topic.

3.4.4 Expert Panel

As indicated previously, it was also the intention during this phase of the study to explore the utility of simulation-based methods to distinguish between nurses functioning at different levels, and specifically to address two questions, namely –

1. Can simulation exercises be used to discriminate between nurses with varying levels of experience?
2. To what extent do senior nurses in clinical practice and educators agree about the functional level of nurses with varying levels of experience?

To this end two 'expert' panels were drawn together. One panel, consisting of clinical nurses at grades 'F' and 'G', these being more commonly known by their titles, Charge Nurse (CN) and Senior Charge Nurse (SCN); the second panel was composed of Nursing Lecturers.

A panel consisting of clinical nurses at grades 'F' and 'G' was formed. This panel represented those nurses who would be responsible for assessing student nurses in clinical practice, using a Competencies and Continuous Assessment of Practice (CAP) booklet developed by the School of Nursing and Midwifery. This assessment framework was based upon Benner's model of Novice to Expert (Benner, 1984). Senior Charge Nurses and Charge Nurses also have responsibility for appointments, promotions and staff appraisal amongst trained staff. They are also experienced clinical nurses, normally having been qualified at least three years, and often much longer.

Nursing Lecturers have responsibility for carrying out an academic review of students' progress, and would also review student's clinical progress via their CAP booklets. They too are experienced clinical nurses, although it may have been some time since they regularly engaged in patient care.

The panels were convened by personal approach, that is, the researcher made contact with each of the 'F' and 'G' grades working in the general medical wards in the study

hospital. The ward from which the trained staff were recruited was excluded, as the SCN and CN were already familiar with the study, and may have recognised personal aspects of the data that would allow them to identify their staff members and their grade. This gave a total possible number of clinical ‘experts’ of ten (n=10). Similarly, ten Nursing Lecturers were approached by the researcher; a task that was perhaps made slightly easier by the fact that they were all colleagues and co-workers.

All were given a brief outline of the activity required, and graciously agreed to assist (Appendix XX). A ‘pack’ was prepared for each ‘expert.’ Each person was given a summary description of Benner’s five levels of skill (Appendix I) and asked to read this through a number of times. They were then asked to read a summary of each participant’s TA responses and the subsequent interview, and were asked to assign a functional level to each participant based on Benner’s model, justifying their response. They were also informed that the eight sets of TA responses were presented to them in a random assortment, therefore, they should not assume that the response they read first was the most junior or the one they read last the most senior.

Each of the verbal protocols had undergone minor editing to remove any obvious identifying features regarding the respondents level. For example, the original of one transcript read

‘...and I’d go to Fred. What’s, sorry, assess cardiovascular status?’

R – Measuring how well his heart is working.

Is that just blood pressure?

R – Blood pressure, pulse, colour

Right, OK, ehm, I would go to Fred next ‘cause he’s had an MI.’

In this section of transcript it can be seen that the request for information regarding the assessment of cardiovascular status clearly indicates that the respondent is likely to be a student, and a junior one at that. Whereas, the edited version read

'...and I'd go to Fred. Right, OK, ehm, I would go to Fred next 'cause he's had an MI.'

In this way, the expert panel members are not being compelled to make a premature judgement, based upon some overt clues regarding the respondents functional level, but are having to engage with the transcripts at a deeper level.

To give a further example, in another transcript the original read

'...you have to balance your time, which I think is very difficult... especially when you're... 'cause you're newly qualified.'

After editing it now read

'...you have to balance your time, which I think is very difficult.'

Once they had completed the activity, the responses were returned to the researcher in a pre-addressed envelope.

3.5 Study Participants

3.5.1 Sample

As indicated above, two participants from each of four levels of expertise were purposively recruited to the study (Table 3-2). Although no claim can be made that they were representative of each group as is generally understood by that term, there was no reason to suppose that they were atypical members. It is also important to note that within a qualitative research framework the researcher is not setting out to produce generalisable findings (Williams, 1998; Thompson, 1999), but rather, is aiming to explore and elicit the meaning held by informants regarding particular problems. With this in mind then, it is often the case that participants are selected purposively because they are key informants in respect of the study topic.

3.5.2 Characteristics of Sample

The student nurses were drawn from terms two and six of the Diploma in Higher Education (Nursing). The junior students were in their Common Foundation Programme

and the senior students were in the Branch part of their programme, that is, Adult Nursing. None had undertaken any previous nursing education.

Table 3-3 gives information regarding the trained nurses' qualifications and the time that they had been at their respective grades. All of the trained nurses were currently working in an acute medical ward (female).

<i>Grade</i>	<i>Qualification</i>	<i>Time at current grade</i>
Junior staff nurse	RGN	11.5 months
Junior staff nurse	RGN, BSc	6 months
Senior staff nurse	RGN, RSCN,	3 years 10 months
Senior staff nurse	RGN	18 months

Table 3-3: Qualifications and time at respective grade of trained nurses in study.

3.6 Analysis

The verbal protocol data generated by the think-aloud exercise were transcribed verbatim by the researcher, for subsequent analysis. This initial verbatim transcription of data is recommended as it enables the researcher to become familiar with the material and may suggest possibilities for coding categories (Sandelowski, 1994; Potter, 1996; Silverman, 2000). Following initial transcription the verbal protocol data were read over several times and summarised (see below).

Subsequently, the data were coded using a constant comparative technique as first described by Glaser & Strauss (1968) and refined by Strauss & Corbin (1998). The approach used was one adapted from Burnard (1991). This analytic approach involved a constant reading and re-reading of the transcripts, comparing one with the other, and identifying and assigning initial 'labels' to the data. Any section of transcript seen by the researcher as being relevant to the topic was identified by reference to page and line number, and the coding label identified in the margin of the transcript. The analysis then continued by making comparisons across and within data sets in an attempt to reveal substantive categories that were similar in type (Thompson, Ersser, & Webster, 1995). Categories were then 'collapsed' into major categories or themes that draw together data excerpts of similar type. Throughout the analysis there was a constant comparing of transcripts and labels, with ongoing revision.

The data produced from the semi-structured interviews were analysed in the same manner as that described above. In both analyses, internal reliability was enhanced in two ways; firstly, by asking a colleague to review the transcripts and coding decisions,

and secondly by coding and re-coding the data at two different times (Tovey & Adams, 1999). Inter-rater reliability checks produced an agreement of 96%.

The results from the judgements of the expert panels were entered into the Minitab statistical analysis software package for subsequent analysis. The comments made by the panel members that indicated the rationale for their judgements were collated.

3.7 Results

As the analyses from the TA and interview were carried out concurrently these results will be presented here together. A review of transcript length will begin this section, followed by a consideration of the verbal protocols. The following section will then draw together the findings from the verbal protocol data together with the interview data to generate themes and categories pertinent to priority setting. The results section will then go on to consider the analysis from the expert panel data. An example of a think-aloud report and subsequent interview are given in appendices XXI and XXII.

3.7.1 Think-aloud Exercise and Interview Data.

3.7.1.1 Transcription Length

Jones (1989) and Green & Gilhooly (1996) suggest counting the number of words spoken by each participant in the production of their verbal protocols, unfortunately, neither studies indicate what value this may have. Someren et al. (1994) caution that differences in transcript length may be due to differences in styles of verbalisation rather than thought processes. However, the effect of stylistic differences is minimised by the aggregation of several protocols, such that mean protocol length can be indicative of thought processes. The length of the verbal reports produced from the TA exercise may be regarded as a proxy indicator of the cognitive load experienced by participants as they completed the required task. The number of words spoken by each participant may also reflect the complexity of their schema construction in respect of the topic under study, with greater expertise being associated with more complex schema construction. It is reasonable to assume that those nurses with more complex schemas would verbalise less, producing shorter protocols. A further possible indicator of the cognitive demands placed upon a person engaged in problem-solving activity may be the time taken to complete the task. Offredy (1998) suggests that the more experienced the practitioner, the greater the speed of the decision making process. Sweller (1983) proposes that cognitive load or demand when problem-solving is greater in novices because they are

trying to understand and define what the problem is, as well as relate the current problem to previous knowledge. Furthermore, they must identify a method for problem solution, and finally, they are learning from the problem-solving activity itself. Notwithstanding the previous note of caution, protocol length may provide the researcher with some useful insights into cognitive processes.

Transcription of the verbal protocols produced data sets that were of variable length in terms of number of words spoken and time taken (see Tables 3-4, 3-5). A Pearson correlation coefficient was calculated which demonstrated a significant correlation between the time taken to complete the exercise and the number of words spoken ($r = 0.97$, $p = 0.01$). Junior students' reports were shorter than the other groups of participants in respect of number of words, whereas the reports of the senior staff nurses were the shortest in terms of time. The senior students' reports were the longest for both time and word length.

	<i>Junior student (n=2)</i>	<i>Senior student (n=2)</i>	<i>Staff nurse (n=2)</i>	<i>Senior staff nurse (n=2)</i>
	552	1185	590	461
	411	4937	910	773
Mean	481.5	3061	750	617

Table 3-4: Length (in words) of the verbal protocol data by grade

	<i>Junior student (n=2)</i>	<i>Senior student (n=2)</i>	<i>Staff nurse (n=2)</i>	<i>Senior staff nurse (n=2)</i>
	10'33	11'37	7'09	8'02
	7'51	38'10	14'46	8'58
Mean	9'12	24'53	10'55	8'30

Table 3-5: Length (in minutes) of the verbal protocol data by grade

It is interesting to note that this apparent brevity on the part of the junior students was also repeated in the length of the interview transcripts produced by them, and once again it can be seen that the senior students produce the lengthiest transcripts (see Table 3-6).

	<i>Junior student (n=2)</i>	<i>Senior student (n=2)</i>	<i>Staff nurse (n=2)</i>	<i>Senior staff nurse (n=2)</i>
	822	2812	2032	1329
	941	1433	746	2283
Mean	881.5	2122.5	1389	1803

Table 3-6: Length (in words) of the interview transcripts by grade

3.7.1.2 *Summaries of Verbal Protocol Data*

This section provides brief summaries of the verbal protocols generated by the TA activity of each participant as they attempted to complete the simulation exercise. Significant words and phrases are emboldened. It should be noted that the analysis was conducted on the verbatim transcripts rather than the summaries that follow.

Junior student A

Having read through all four case histories, participant begins to place items of care in order. Quickly attributes importance to two particular activities (i.e., checking blood pressure and explaining echocardiogram). There is some evidence of **uncertainty** in the participant's responses as at times she decides upon a course of action and then **hesitates** and changes her mind. **Mainly focuses on physical care** with only a single instance of a non-physical nature. **Some decisions are justified** whereas others are not

Junior student B

Begins by reading through all four case histories. Immediately attributes importance to taking John's blood pressure. **Justifies this action** by stating that she would then feel free to attend to other patients. Despite being unsure what an echocardiogram is, participant attributes importance to explaining Bill's test. She expresses concern about the approach she is taking, i.e., task-oriented, feeling that this way she may miss something. After clarification she **adopts a person-oriented approach**. During the exercise she **pauses frequently**. In identifying order of care, **gives little justification for her actions**. On one occasion, participant justifies a course of action with **reference to patient's age and inferred mental state**. During planning of care, participant identifies a course of action and then defers this because patient is sleeping.

Senior student A

Indicates that she will read through all four case histories before deciding what to do. Begins to order care, and indicates that she will go to Bill but **reconsiders**; this is followed by a **long pause**. Participant appears to be sorting through the various bits of information about each patient in order to identify who needs attended to first. She suggests that the **fact that Fred is a new admission is important**. Identifies Peter as requiring a lot of work, and mentions that **patients like Peter are often left until last**, although she is unsure if this is right or not. There is **a lot of talk associated with each decision**, and one gets a sense of this participant's '**personal philosophy of care**' coming through. A predominately **person-oriented approach** is evident, as is the importance of **talking to patients, establishing relationships with them, and finding out things about them**. At one point participant **refers to John's age** and how this might lessen the importance of a particular action. She places less emphasis on direct physical care.

Senior student B

This is a **very extensive report**. Participant begins by stating that she will try and identify priorities as she reads. She reads each case in turn and **engages in a long discourse subsequent to reading each case history**. Refers to **things 'springing out at her.'** Much of the protocol refers to education, communication and the emotional/psychological aspect of the patient under discussion. She **appears very confident** in her discourse and has clear opinions about nursing and nurses. Her account is **very person-focused**. Refers on a number of occasions to the **age of the patient**. The accounts in places are repetitive. Refers to contacting other members of the multi-disciplinary team. There is a sense of the participant's personal '**philosophy of care**' coming through. She begins to prioritise care, **appearing to give a high priority to tasks related to physical needs/problems**. Each decision is accompanied by a substantial explanation. About halfway, the participant pauses as if to take in remainder of what needs to be done and to work out a plan of action. On one occasion she makes a reference to the **benefit of actually seeing a patient**. In her answers she also appears to be challenging current values/beliefs/attitudes about nursing practice held by wider profession. Gives **justification for each decision** and a **detailed description** of what she might do. **Gives a higher priority to those who need assistance**. Makes reference to underpinning philosophy of care.

Staff nurse A

Participant begins by clarifying vignette and asking whether or not breakfast and drugs have been given to patients. Reads through all four case histories and upon completion **immediately begins to order care**. Participant indicates one activity not required by exercise. In the participant's response there is a pattern of decision - pause - decision - pause. At one point asks if she can change her mind and do two things at once. Makes **some amendments**. Throughout her responses the participant **gives little or no explanation** for her decisions or her actions.

Staff nurse B

There is an early phase in which participant is **initially unsure and hesitant** possibly as a result of not fully understanding the instructions. She begins to attend to patients in the order in which they were presented in the vignette. Participant needs constant clarification of exercise and eventually the researcher stops the tape and clarifies the instructions. At this point the participant appeared to understand what was required and then began to complete exercise in a more **confident** and definite manner. Gives **limited justification** for decisions. Participant indicates that she is **having difficulty verbalising her responses** despite this (i.e., the priority setting) being something she does everyday. Notes that she does not feel that assessing Peter's comprehension is important as it can be done throughout the day. Participant suggests in relation to **giving explanations to patients that they must be given sufficiently early in order to facilitate retention and to prevent anxiety**. Indicates that she has covered all of the 'main things' that leaves only 'washing and stuff.' In ordering patients washing, participant does however, use criteria to decide between them.

Senior staff nurse A

Participant reads through vignette and upon finishing almost **immediately begins to order care**. Gives the impression that she has completely decided upon a course of action with **little hesitation** evident. Participant **gives very little in the way of explanation** for her decisions. She briefly considers her responses and then confirms that this is what she would do.

Senior staff nurse B

Participant begins by reading through vignette and then **starts to place care in order**. She seeks **baseline information/observations** on John and Fred. Two continuous threads are the need to check John and encourage Bill. The participant **gives only a little in the way of justification/explanation** for her decisions. On two occasions she links care to other events in and out of the ward.

In summarising the participants' verbal protocols, a number of features were noted that are consistent with Benner's novice/expert framework. Some of these features are illustrated below.

Confidence

Overall, confidence was more evident with greater experience, as demonstrated by less hesitancy and the way in which the more experienced staff nurses and senior staff nurses seemed to move quickly into problem resolution. The junior students often used terms such as '*perhaps*' and '*probably*.' Superficially, the senior student nurses appeared to be quite confident, however, this may not in fact be the case as their narratives are very

long and much more descriptive than the other participants, which may indicate an element of uncertainty.

Rule based actions

For Benner, being dependent upon rules to guide one's actions is a key distinguishing feature of beginning practitioners. In the verbal protocols, some examples were seen of such behaviour, for example, a senior student appears to be working to two explicit rules. The first rule appears to be that new admissions have a high priority -

'I'm more tempted to go back to this guy, Fred, because of the fact that I think that's the only one it says that he's a new admission.'

and later

'I think.... is this the only one that's came in.... like the new patient?'

The second rule is that dependent patients are left until last –

'the person who is going to require the most work is Peter.... you tend to leave these people who require more work to last.'

A junior student, in relation to washing patients, gives another example of rule-guided behaviour -

'It doesn't matter when a patient gets washed so I would always think of what was more important than that first.'

Considers fewer alternatives

The ability to quickly 'home in' on the accurate region of the problem is purported to be a feature of more experienced nurses, that is those functioning at the level of proficient or expert (Benner, 1984). At this level, nurses are assumed to consider fewer alternative diagnoses or solutions, and for the expert this evidences itself as intuitive judgement. It can be seen that the transcripts of the staff nurses and senior staff nurses in this study represent brief protocols that almost immediately present a solution. These protocols are consistent with Benner's model. In contrast, the lengthy reports of the senior students suggest that they may be considering a large range of alternatives.

Intuitive judgement

Intuition is a defining characteristic of expertise according to Benner, however it is difficult to demonstrate. Certain terms or phrases might be used as proxy indicators of intuition, for example, 'I felt that...', or 'I had a feeling...', or 'My gut instincts told me...' and so on. However, in using these key words, and by searching the protocols with the 'Find' command in the word processor, little convincing evidence of intuitive judgements was seen. Perhaps the best evidence of intuitive judgement in the verbal protocols was the lack of justification and explanation for decisions made by the staff nurses and senior staff nurses, whereas, the protocols from the senior students contained a large number of justifications and explanations for their proposed course of action. The lack of such justification and explanation in the junior students does not necessarily imply intuitive judgement, but could indicate that their limited experience means that they have not yet acquired the necessary knowledge base, or constructs, with which to do so.

3.7.1.3 Further Analysis of Verbal Protocol and Interview Data using the Constant Comparative Method

This further analysis of the interview data, combined with the analysis of the VP data, yielded eighteen initial categories that could be regarded as having some impact on the priority setting behaviour of the participants in the study. Table 3-7 shows these initial categories.

Giving explanations	Patient v. Task orientation
Frequency and nature of interruptions	Ability to manage interruptions
Ability to resolve competing demands	Ability to delegate
Ability to identify and manage relevant information	Perceived importance of physical needs
Perceived complexity of case	Need to 'see' patient
Patients coping ability	Patients preferences
Patients' personality and behaviours	Nurses knowledge base and experience
Relative importance of different patient care activities	Constraints of role
Need to fit into social world of nursing	Importance of medical diagnosis

Table 3-7: Categories produced from open coding of the verbal protocol and interview data

These eighteen initial categories were 'collapsed' into six themes. Table 3-8 indicates the relationship between themes and their respective categories.

Personal perspectives on care	Need to fit into social world of nursing Patient v. task orientation Constraints of role
Knowing patients	Patients coping ability Patients personality and behaviours Patients preferences Need to 'see' patient
Perceived significance of actions and cues	Relative importance of different patient care activities Importance of medical diagnosis Perceived importance of physical needs Perceived complexity of case
Making decisions	Ability to delegate Ability to resolve competing demands Nurses knowledge base and experience
Managing information	Ability to identify and manage relevant information Giving explanations
Managing time	Frequency/nature of interruptions Ability to manage interruptions

Table 3-8: Themes and their associated categories.

In order to illustrate the categories and their relationship with theme headings, some examples will now be given.

Knowing patients

This theme refers to the extent to which the nurse knows, or fails to know, an individual patient in their care, understanding their situation, and their likely responses. By knowing patients is meant the ability of the nurse to use personal knowledge regarding a patient, either gained directly or indirectly, in order to provide care for a particular patient (Jenny & Logan, 1992; Tanner et al., 1993; Radwin, 1995a, 1995b; Evans, 1996; Radwin, 1996). A number of categories came together under this theme heading, namely, *patient's coping ability*, *patient personality and behaviours*, *patient preferences*, and *seeing the patient*.

The first category is that of *patients coping ability*. This category refers to the extent that the patient is able to manage or deal with the situation in which he or she currently finds themselves. This ability of patients to cope with their current situation, and how the nurse perceives this, will influence the judgements that the nurse may make in planning care.

When asked during the interview whether there was any additional information that they felt they should have had that was not included in the simulation information, one senior student nurse says –

‘How the patients are actually coping with what’s happening to them.’

She goes on to describe how coming into hospital can often have a big impact on a person, and how this might change their ability to cope with difficult circumstances –

‘...but the important things are like talking to people... knowing how they’re coping with what’s happening.’

And again, when talking about a patient who is breathless she says –

‘...something like breathlessness you’re constantly aware of the anxiety... how the patient is coping with it.’

A further category was that of *patient personality and behaviours*. It is clear from the literature that persons can demonstrate a variety of behaviours in response to adopting the role of patient. One junior student seems to have experienced this very early according to her response to a question about how she would decide between several activities all needing to be done simultaneously. She first refers to administering drugs and moving someone to prevent pressure sores, and then –

‘...but also depending upon what sort of people they are (laughs).’

When asked to explore this further –

‘Well, if you know someone is pretty obnoxious, or will be the first to shout if they don’t get something they want right away, I think you tend to go to them first in all honesty. And I think the poor people that are quite happy

with whatever you give them, you think – Well I can probably leave them a bit longer because they'll not object.'

It is worth noting that “difficult” behaviour may represent a coping mechanism on behalf of a patient, although this is not necessarily the case in every instance.

However, not all patient behaviours are of this type, some signal cues that require a response by the nurse –

'...well you get all their non-verbals and you can see that people that are anxious... or you can see people that are walking about that shouldn't be and you need extra time to go over to them and say....'

Senior student

Where possible, if all other things were equal, then taking *patient preferences* into account when deciding care was reported by some participants as being a useful strategy. For example, another senior student suggests –

'...personal hygiene – he may not want a shower... he may prefer a bath... I mean he's an elderly gentleman, I'm sure they didn't have showers when he was born. Things like that need to be addressed as well.'

A final category under the theme heading of knowing patients is that of *seeing the patient*. For a number of participants, knowing their patients required an extra dimension that the current simulation could not provide, and that was the actual reality of 'seeing' the patients in the flesh so to speak –

'... sometimes just looking at people, you can see they need somebody just now, you know.'

Senior student

When asked about how confident she was regarding her priority setting, one senior staff nurse indicated that her confidence was reduced because she had not seen the patients herself –

'...partly because it's not like patients that you know, It's not patients that you've seen before, and it's all very well reading things, you know, like you'd maybe read things from a Kardex but you do have to go round.'

and again –

'... it's all very well getting a report but you have to walk around, talk to your patients, look at them and assess what, you know, take in what you see.'

On another occasion when asked how the patient's medical diagnosis influenced her decision-making this participant responded –

'I think, again, you really need to see your patients, you can tell so much by looking at a patient, you can just do so much assessment, even just a few seconds of seeing them, I mean you can tell if somebody's going to be fit for getting up... maybe they were up yesterday, somebody says 'oh, they've been fine, you can get them up.'.. it might be that you go and look at them today and you know that you can't.'

In summary, it is evident that the concept of knowing patients has a number of dimensions that aid the nurse in planning care. In essence, the greater the knowledge that the nurse has regarding the patient, the more able they feel to provide individualised and appropriate care.

Perceived significance of actions and cues

This theme refers to the extent to which the proposed action or cue is seen by the nurse to have a higher or lower degree of significance for decision-making. This theme was composed of four categories, namely, *relative importance of different patient care activities*, *perceived importance of medical diagnosis*, *perceived importance of physical needs of patient*, and *case complexity*.

In considering the *relative importance of different patient care activities*, it is interesting to note that this view of what constitutes important patient care activities is not necessarily a constant over time. A senior staff nurse suggests that what constitutes an immediate need will vary across patients and in different situations. In respect of meeting patients' personal hygiene needs she says on one occasion –

'...on patients like that it's not important that they're washed first thing in the morning..'

However, in respect of an actual patient that she calls to mind –

'... another of my patients who's on a frusemide infusion which runs over twelve hours... now the woman takes a long time to get herself ready 'cause she's had polio in the past; she has quite a lot of disabilities but she wants to be independent and she wants to do things for herself, ... but she was saying that she's too... she's been really tired at night because if the pump's late, it's running into the early hours of the morning and then she's not getting a proper sleep, so she would be one that I would want to help early on....'

For this nurse, it can be seen that on one occasion the activity of washing seemed to have a relatively low level of importance, however, on a different occasion, it carried a much higher significance.

For one junior staff nurse, activities such as washing also seem to carry a low weighting –

'... that's more important... checking his blood pressure rather than helping him have a wash.'

and elsewhere –

'I think that's all of the main things, and then I would go on to washing and stuff.'

A senior student also hints at the fact that certain activities appear to possess less importance, when discussing basic elements of patient care –

'... you know the basic care that's needed, and I think a lot of these things are basic but the important things are like talking to people.'

The category *perceived importance of medical diagnosis* reflects the extent to which the patients' medical diagnosis was important to the participants in planning care.

On being asked about this a junior student replied –

'I don't really think it should (be)... apart from having to know if someone can be moved or whatever. But I think in their care you only have to know what they want in their care and what they need in their care.'

She suggests that, in deciding upon care, what is more important is to be found within the patient, and in what the patient wants and needs. In a very similar way the other junior student states –

'I think it matters but it's not all that important because I think you have to think more about the patient care....'

However, this view of the importance of medical diagnosis may reflect the junior position of two students, who as yet may not have a well-developed knowledge base and understanding of the medical conditions that affect the patients in their care, and how this might impact on care planning.

This view of how important medical diagnosis is, shifts a little with the senior students, again perhaps reflecting a more substantial knowledge and experience base –

'It has a significant weight I think....'

She goes on then to give an example, comparing a breathless patient and one who has had a myocardial infarction. She notes that once the patient with the MI is over his crisis then you would expect his time in hospital to be relatively straightforward, whereas the patient with breathlessness will be more distressed, more anxious; his problem will be more persistent. Therefore, the underlying medical problem is being used in this case to anticipate the likely state of the patient, and the care that they will require.

Similarly, one senior student suggests of the medical diagnosis –

'... probably it would play quite a large part, if I'm truthful, yes, it would play quite a large part.'

She too goes on to give an example, this time of someone with cancer –

'... somebody with cancer – obviously if they've pain, their pain, but talking therapy, you know, so I think that would be, yes, it would... definitely.'

She seems to be using this example to say that knowing the patient has cancer allows her to anticipate that they might need help with managing their pain, or they may need to talk about how this has impacted on their lives.

This use of the medical diagnosis to inform decision-making continues, however, other things are also taken into account.

A junior staff nurse says –

'Well I'd say it was pretty important... but then it's not just her medical (diagnosis)... you've got to look at other things as well, I wouldn't just take into account the medical diagnosis and think – she's had an MI... I'll go and see her first... I wouldn't do it like that.'

Finally, the senior staff nurses seemed to be aware of the patients' medical diagnosis but not apparently dependent upon it –

'...it's fairly important.. I think it is important. Obviously if you have an acutely ill patient it's very important, but coming on each shift I would say it's not the priority.'

Asked to explore this a little further she goes on –

'I can say, I mean an acutely ill patient, their medical diagnosis is very important because you've got to make certain observations which are very important, but when I come on duty I do not think of all the patients' diagnoses and prioritise my care depending on their diagnoses, it's actually their nursing care....'

In this category then, the relative importance of the patients' medical diagnosis seems to change with experience, however, for an experienced nurse it also varies with the situation especially when faced with an acutely ill patient.

The category, *perceived importance of physical needs of patient*, incorporates the notion that deciding priorities and actions may in part be determined by the nurse's view of the patient in respect of their physical state –

'I think it's hard because all these things are important... you know, they're all important - for instance, I left things until last like explaining the ECG and informing him of his rehab... I mean I knew I was doing that but then you have... I don't know... you either decide that these are, you know, that the physical things are more... I think we're taught to feel like they are more important - whether that's right or not I don't know - I mean, I know I was... I'm aware that I was doing it...that I left these things until last but then on the other hand you know, is it more important that Bill knows about his ECG, and there's Peter lying on the ground and Johns BP's, you know, gone away off and...?'

Junior staff nurse

She goes on to clarify this saying –

'... when you've just come on the ward...once you've had a report and you know that there are things that need to be done and needs... I'm not saying they're more important but they're more pertinent... they are more right now, these are things if you do them then you've got more time to stand back and I could quite easily go and speak to Bill about his ECG knowing that I've put cot sides up and he was...you know...'

There appear to be two elements here; the first is that in becoming a nurse she was left feeling that physical care needs are more important, and this continues to influence her decision-making. The second element is that physical needs, at least in the setting with which she is familiar, are often of the here and now variety, more immediate. It may also be the case that many aspects of physical care are pre-eminent in that they 'loom large' in the mind of the nurse, they are often literally obvious and in a sense they seem to haunt them –

'I think we find it easier to do and once, you know, for instance you go and do it... that's it done.'

The final category related to the theme of perceived significance of actions and cues is that of *case complexity*. This category has two components, which though related are not necessarily the same. The first of these is the severity of the illness, or how acutely unwell the patient is. It is probably a reasonable assumption to state that the more severe and acute a patient's illness, the more complex both his medical management and his nursing care will be. The second component is that of the level of dependence/independence of the patient. In this instance, the more dependent a patient is the more complex his nursing care is likely to be, however, clearly a dependent patient is not necessarily acutely ill, or suffering from an immediately life-threatening illness.

One senior student talks about this –

'I think that the person that's going to require the most work is Peter... and quite often... I don't know whether this is right but you tend to sort of leave these people who require more work to last.'

She goes on –

'One patient really springs to mind... often in wards, I think you're told, or you're expected to leave the difficult... or the patients that need a lot of time until the end and quite often as a student you go with the flow of the ward... but there was a man, and he'd gone into renal failure and when I started actually doing him there were all these other patients... I ended up the whole shift to do this man properly because oral hygiene had been neglected, his nails were dirty... and when I started doing it I thought "this is terrible"... so I was getting more determined to do this man totally and the amount of time this actually took, you know, when I looked at my watch it was like twelve o'clock and I thought "nobody else had been done".'

In a similar vein, when talking about planning her use of time, the other senior student suggested that dependent or complex cases influence this, although she may not always approve –

'... who needs two nurses, who takes the longest, who's able to, or who is independent, and then I usually take it from there. I find, and maybe it's up to people like myself to change it, the people who take the longest usually get left to last in the majority of the wards I've been on and I don't always think that's necessarily fair.'

The impact of severity of illness can be seen in this response to a question asking about the importance of the patient's medical diagnosis –

'Well, for instance that lady who arrested yesterday morning, you know, I wasn't going to... I knew I had other things to do like daily weights, like recordings I had, you know, but I didn't, you know... I obviously chose to stay with her because I felt she was... you know, she was in the acute stages of her illness. Yes, I would take it into account... a lot.'

Junior staff nurse

A senior staff nurse also alludes to the issue of severity of illness and degree of patient dependence in her response to a question regarding what criteria she might use in deciding what to do –

'I think a lot depends on how ill the patient is, how unwell the patient is, I would tend to care for those that are 'ill-er' first so that I'm able to make a general assessment of how they are actually doing, and do all their care including observations and everything like that so that I'd be able to have some baseline of how they were. I would tend to leave the patients who were fairly stable... to later on, feeling quite confident that that's OK to leave that till later-but I would certainly try and prioritise my care to the 'ill-er' patients and those are maybe unconscious or requiring pressure area care... '

And for another senior staff nurse –

'Again, it depends upon how ill the patient is. If I was coming on in the morning and maybe having a few sick patients who were on maybe infusions, regular recordings, maybe half-hourly recordings, maybe blood sugars and things... things that had to be done on time, I would make sure that they were seen to first.'

In relation to the theme **perceived significance of actions and cues** it can be seen that nurses attribute meaning and importance to a variety of actions and cues. It is also important to note that for many of these actions and cues their significance is not absolute but rather relative.

To conclude this section, a brief summary of the remaining themes and categories will be given.

The theme **personal perspectives on care**, refers to the views held by learner and trained nurses in this phase of the study, in respect of nurses and nursing. Within this theme, the nature and potential impact of these personal perspectives upon the nurse's decision making, with regard to their simulated case-load, could be seen. This theme includes the category of *need to fit into social world of nursing*, in which the nurse is influenced to an extent by her desire to 'fit in', to be accepted. A further category was that of *patient versus task orientation*. In the analysis of the verbal protocols and the interview data, it was clear that some participants were focussed on providing care centred on individual patients, rather than on particular, or specific, activities of care. This finding was also noted in the previous phase of the study. The final category in relation to this theme was that of *constraints of role*. The effects of this category were noted in both learner and trained nurses. For learners, there were limits imposed upon their decision making, by virtue of their not being qualified, and also inexperienced, however, as they progressed through their studies, the extent of these constraints upon them changed. For the trained nurses these constraints were typically reflected in the way in which they saw themselves and their wider responsibilities, that impacted upon their role as 'named nurse' or 'primary nurse', that is of principle caregiver for their case-load.

The theme **making decisions** was composed of three categories, namely *ability to delegate*, *ability to resolve competing demands*, and *nurses knowledge base and experience*. Making decisions regarding priority setting is conceptualised as a skill in this study, and was associated with the categories identified above. In part, deciding what to do required an adequate knowledge base; an element highlighted by both learner and trained nurses. Additionally, that knowledge base was made pertinent by experience. Knowledge and experience provide the nurse with the necessary foundations for resolving competing demands, and for delegation. Delegation was a skill that, although drawn from knowledge and experience, also drew upon confidence.

'I took charge of the ward from my first day and I found it extremely difficult because I didn't have the experience to delegate, I was newly qualified and thought that if anything went wrong it was because I had done it so I'd rather see things were done myself and... I really increased my workload... I could have delegated to others and eventually through experience you learn to trust your staff... get confidence in your staff... confidence in yourself.'

Senior staff nurse

A further theme, **managing information**, identified the importance of two aspects of communication. The first of these was the *ability to identify and manage relevant information*. Throughout the data, it became evident that in order to plan effectively the nurse had to be in possession of relevant information. Identifying what information was relevant once again developed with experience. An additional aspect that could affect decision-making was the ease or otherwise of acquiring the necessary information. The second category was that of *giving explanations*. Providing patients with information and explanations was seen as being an important action, however, there were times when this need was more immediate and so could impinge more directly on setting priorities.

The final theme was **managing time**. There were two categories associated with this theme that were likely to impact upon the implementation of a plan of care, and further prioritisation and re-prioritisation. The first of these concerned the *frequency and nature of interruptions*. Interruptions to a nurse's work could vary in terms of their nature and frequency. Some interruptions were minor, others more significant; some occurred more frequently, others relatively rarely e.g., emergency situations. The impression was gained that interruptions are frequent, relatively minor, and yet highly disruptive. The second category was that of *ability to manage interruptions*. Once again, experience and confidence appeared to be the key to the development of this skill.

3.7.2 Expert Panel

Seven clinicians (n=7) completed and returned their exercises, giving a response rate of 70%; the response rate for the Nursing Lecturers was 90% (n=9). The following tables (see Tables 3-9 and 3-10) indicate the extent of the 'expertise' of the two panels. Expertise is here represented by a number of domains, namely, number and level of qualifications, employment grade, time at this grade, and total time in nursing.

<i>Qualifications</i>	<i>Current grade</i>	<i>Time at grade</i>	<i>Time in nursing</i>
1 RGN	F	5 years	16 years
2 RGN, ONC, BSc Adv Nurs.	G	8 years	17 years
3 BSc (SocSc-Nurs.), MN, RGN, DN, Cert. in Intensive Care.	G	11 years	14 years
4 RGN	G	8 months	8 years
5 BSc, RGN	F	5 months	6 years
6 EN, RGN, Dip HE	F	6 months	22 years
7 RGN, RM.	G	6 years	16 years

Table 3-9: Characteristics of clinical nurses' expert panel

The clinical panel had a wide range of experience with between six and twenty-two year's total clinical experience, and with between five months and eleven years experience at their current grade, i.e., at Charge Nurse or Senior Charge Nurse grade. All had the basic required qualification for working in this area, namely Registered General Nurse (RGN), although five panel members had additional qualifications. Panel members 2, 3, 5 and 6 had academic awards at Dip. HE or higher, and panel members 2, 3, 6, and 7 had additional professional qualifications.

<i>Qualifications</i>	<i>Current grade</i>	<i>Time at grade</i>	<i>Time in nursing</i>
1 BSc Nurs, RGN, RMN, Dip N (CT), Dip.Ed.	Nurse Teacher	4 years	20 years
2 MN, Dip N, Cert. Ed, RGN, SCM	Nurse Teacher	5 years	25 years
3 RGN, BSc (Nurs), RCNT, Dip Ed	Nurse Teacher	6 years	27 years
4 BSc (Hons), RGN, SCM, Dip Ed	Nurse Teacher	3 years	27 years
5 RGN, RM, Dip N (CT), RNT, MEd (Hons)	Nurse Teacher	10 years	28 years
6 MPhil, BSc, RGN, SCM, RNT, RCNT	Nurse Teacher	3 years	30 years
7 BSc Nurs (Hons), Dip N (CT), Dip Ed, RGN, SCM	Nurse Teacher	4 years	27 years
8 RGN, SCM, Dip N (CT), BSc (Hons)	Nurse Teacher	3 years	23 years
9 RGN, SCM, NDN, BSc (Nurs), MSc (Ed), Cert Prof Ethics, Dip, Nurs (Lon)	Nurse Teacher	8 years	38 years

Table 3-10: Characteristics of academic nurses' expert panel

The academic panel also had a wide range of experience, with between twenty and thirty-eight years total nursing experience, i.e., both in clinical practice and education. They also had between three and ten years experience as Nurse Lecturers. As per the clinical panel, all had the basic professional qualification of Registered General Nurse, and additionally all possessed a statutory teaching qualification as required by the UKCC and NBS. All were educated to first-degree level, with panel members 2, 5, 6, and 9 possessing Masters qualifications. In addition, all panel members with the exception of panel member 3 had additional professional qualifications.

Overall, both panels appeared to have the necessary professional and academic qualifications relevant to their current post. However, the academic panel had more experience in nursing, both in terms of time, and academic and professional background.

3.7.2.1 Clinical and Academic Panels Review of Functional Level of Participants

Determining the functional level of the participants was found by the panel members to be a challenging exercise. As one member stated,

'This was brain-teasing and testing'

and another

'These were amazingly difficult to do.'

The expert panel members' decisions, regarding the level that participants were functioning at, were tabulated and are shown in tables 3-11 to 3-14. The tables can be read in two directions, firstly for each participant one can read down the respective column noting the range of levels, from novice to expert, assigned to that participant by panel members. Secondly, one can read along the rows, noting the distribution of functional level between the grades of participants. In tables 3-11 and 3-12, the judgements made regarding level of functioning for each participant are shown, firstly by the clinical panel, and then by the academic panel.

<i>Functional level assigned</i>	<i>Junior Student (a)</i>	<i>Junior Student (b)</i>	<i>Senior Student (a)</i>	<i>Senior Student (b)</i>	<i>Staff Nurse (a)</i>	<i>Staff Nurse (b)</i>	<i>Senior Staff Nurse (a)</i>	<i>Senior Staff Nurse (b)</i>
Novice	2	1	3	0	0	2	0	0
Advanced Beginner	1	5	2	0	2	1	1	2
Competent	3	1	1	3	2	3	2	3
Proficient	1	0	1	2	1	1	4	1
Expert	0	0	0	2	2	0	0	1

Table 3-11: Functional level of each participant as assigned by clinical staff

<i>Functional level assigned</i>	<i>Junior Student (a)</i>	<i>Junior Student (b)</i>	<i>Senior Student (a)</i>	<i>Senior Student (b)</i>	<i>Staff Nurse (a)</i>	<i>Staff Nurse (b)</i>	<i>Senior Staff Nurse (a)</i>	<i>Senior Staff Nurse (b)</i>
Novice	4	2	1	4	1	3	1	0
Advanced Beginner	1	5	5	2	1	3	1	1
Competent	3	1	2	2	2	3	3	2
Proficient	1	1	1	1	4	0	2	4
Expert	0	0	0	0	1	0	2	2

Table 3-12: Functional level of each participant as assigned by academic staff

Table 3-13 combines the results of both expert panels, and table 3-14 combines the results of both panels and collapses the grades to form four functional levels.

<i>Functional level assigned</i>	<i>Junior Student (a)</i>	<i>Junior Student (b)</i>	<i>Senior Student (a)</i>	<i>Senior Student (b)</i>	<i>Staff Nurse (a)</i>	<i>Staff Nurse (b)</i>	<i>Senior Staff Nurse (a)</i>	<i>Senior Staff Nurse (b)</i>
Novice	6	3	4	4	1	5	1	0
Advanced Beginner	2	10	7	2	3	4	2	3
Competent	6	2	3	5	4	6	5	5
Proficient	2	1	2	3	5	1	6	5
Expert	0	0	0	2	3	0	2	3

Table 3-13: Functional level as assigned by clinical and academic staff combined

<i>Functional level assigned</i>	<i>Junior students</i>	<i>Senior students</i>	<i>Staff nurses</i>	<i>Senior staff nurses</i>
Novice	9	8	6	1
Advanced Beginner	12	9	7	5
Competent	8	8	10	10
Proficient	3	5	6	11
Expert	0	2	3	5

Table 3-14: Functional level as assigned by both clinical and academic staff for each grade of participant

From the above tables it can be seen that there is a trend for both clinical and academic panels toward assigning a higher functional level with greater experience. However this is perhaps most clearly seen in the following figure. In figure 3-2 the frequency with which a functional level was assigned to each grade of participant (combined for both clinical and academic panels) is given.

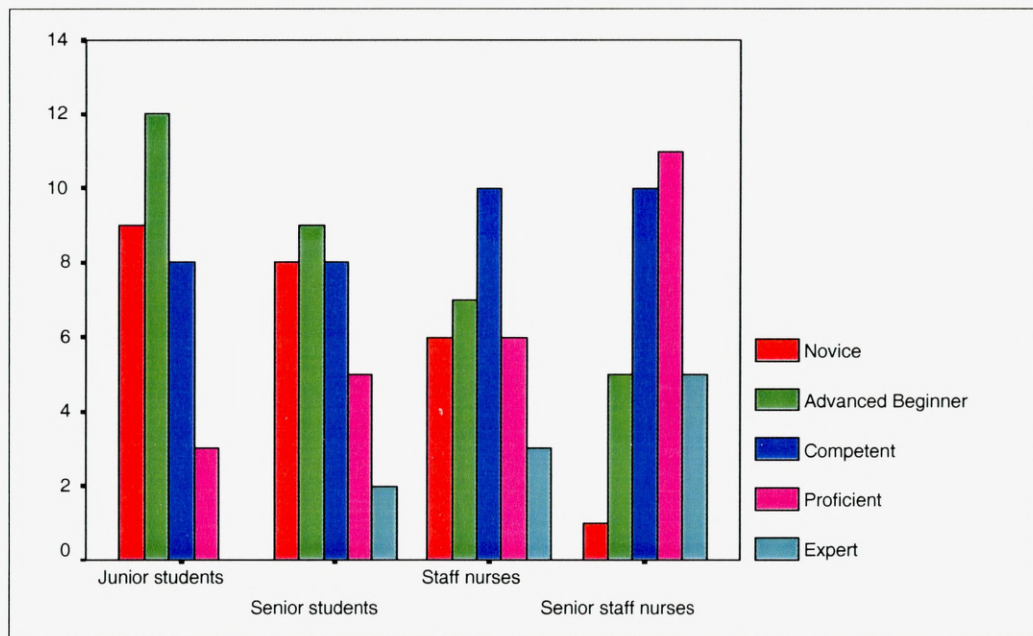


Figure 3-2: Frequency of functional levels reported by clinical and academic panels (combined) for each grade of participant.

The trend towards higher level functioning with greater experience is most clearly seen if one traces the changes in each level in turn. For example, if one follows the legend for ‘novice’, one can see that the frequency with which this level is assigned falls as one moves from junior student to senior staff nurse. The trends seen in this figure are entirely consistent with Benner’s novice/expert model. However, it is important to note what appear to be contradictions in the allocation of participants to functional levels, i.e., the placing of junior grades at senior functional levels and vice versa.

3.7.2.2 *Differences and Similarities in Expert Judgement in Respect of Participants' Functional Level*

From tables 3-11 to 3-14 and figure 3-2, it is clear that there are differences in the judgements made regarding the functional level of the participants by both clinical and academic panels. However, questions remain regarding whether clinical and academic panels agree or disagree about the level of functioning they have assigned to participants. Furthermore, do the differences in assigned functional level moving from junior students to senior staff nurses represent real differences, that is, are the judgements of the panels differentiating between participants?

In the case of the expert judgements the variability of the data could be explained by two independent variables, that is, by the different grades of the participants (n=4), or by differences in the two expert panels of reviewers (n=2). A two-way analysis of variance with interactions was carried out to determine whether or not the apparent differences were significant. Interactions concern whether the effect of one independent variable is consistent for every level of a second independent variable (Polit, 1996; Anthony, 1999; Greene & D'Oliveira, 1999).

This analysis suggested that there were significant differences between the different grades of participants for whom the panels assigned a functional level. It also demonstrates that there are no differences between the clinical and academic panels in the allocation of functional level, that is, there is agreement between both panels. Finally, the analysis also shows that there are no significant interactions between the nurse grade and the panel grades.

	<i>df</i>	<i>F</i>	<i>p</i>
Nurse grade	3	7.00	0.0005
Panel grade	1	0.92	0.340
Nurse grade x Panel grade	3	1.28	0.284

Table 3-15: Two way ANOVA with interactions.

In addition, a nested analysis of variance was conducted, which confirmed the findings that there were significant differences between the nurse grades as to their allocated levels, and that there were no significant differences between reviewers in the expert panels as to this allocation (see Table 3-16).

	<i>df</i>	<i>F</i>	<i>p</i>
Nurse grade	4	0.92	0.456
Nurse grade	3	7.44	0.0005
Panel grade	1	1.27	0.262

Table 3-16: Nested analysis of variance

3.7.2.3 *Over and Under-estimation of Functional Levels by Expert Panels*

Before concluding this review of the expert panels and their judgements of the functional level of the participants who took part in this phase of the study, it would be useful to consider the extent to which the experts were inconsistent in these judgements. It can be seen from tables 3-11 to 3-14 and figure 3-2, that for each grade of participant there were a number of occasions on which the expert assigned a higher or lower functional level than would be expected for participants level of experience, or stage of training.

At junior student level, twenty-one judgements were made which place them at the level of novice or advanced beginner. The allocation of junior students to the lower end of Benner's model of skill acquisition seems reasonable enough and consistent with both Benner's model and common sense. It is interesting to note however, that a further eight judgements place these participants at competent and three at proficient level. In other words eleven judgements are made that place them at a higher level than might be expected for their stage of training.

For senior students, seventeen judgements were made placing them at advanced beginner/competent level. As senior students one would expect them to be functioning most of the time at the level of advanced beginner and occasionally performing at the level of competent practice. Once again however, a number of judgements are made that place them outwith the expected range; eight judgements place them at a lower level i.e., novice, with five placing them at proficient and two at expert.

At the point of registration with the UKCC, a newly qualified nurse is expected to be functioning at the level of a competent practitioner. For the junior staff nurses, ten judgements place them at this level, however thirteen judgements place them at a lower level. A further six judgements place them at proficient level, which may be appropriate depending on the length and type of experience they have gained since qualification, and three judgements at the level of expert. As the nurses in question only have 6 and 11.5

months experience respectively, it seems unlikely that they would have achieved this level.

Lastly, it is noted that the senior staff nurses have been judged in sixteen instances to be functioning at proficient or expert levels, however ten judgements place them functionally at competent, and indeed six have them at advanced beginner or novice.

There are differences too between clinical and academic panel members. No academic placed any student at expert, and only two clinicians placed one senior student at this level. Similarly, out of the twenty-eight possible judgements that could have been made in respect of staff nurse and senior staff nurse by clinicians, only two judgements placed a staff nurse or senior staff nurse at the level of novice. However, out of thirty-six possible judgements at these grades by academics four placed a staff nurse at the level of novice, and one a senior staff nurse at this level.

If it is accepted that the four grades of participants given, i.e., junior student through to senior staff nurse, equates with Benner’s functional levels as indicated in table 3-17, then it is perhaps easier to appreciate this inconsistency of judgement, noting especially those judgements that under or over estimate functional level.

	<i>Novice/advanced beginner (junior students)</i>	<i>Advanced beginner/competent (senior students)</i>	<i>Competent/Proficient (staff nurses)</i>	<i>Proficient/Expert (senior staff nurses)</i>
Consistent Judgement	66%	53%	50%	50%
Under-estimation	-	25%	41%	50%
Over-estimation	34%	22%	9%	-

Table 3-17: Over and under-estimating functional level by clinical and academic panels (combined)

Furthermore, in justifying their judgements, five panel members (three academics and two clinicians) failed to arrive at clear-cut decisions on six occasions. This may indicate that the participant was on the boundary between levels, e.g., advanced beginner/competent, making judgements difficult.

In summary, it was reported earlier that there is a statistically significant trend towards assigning higher grades of nurse to higher functional levels, and that there was general agreement between clinical and academic staff in relation to these judgements. It can be

concluded, therefore, that the use of simulation methods in conjunction with think-aloud, together with associated semi-structured interviews to explore their decision making, permits expert panels to differentiate between nurses functioning at different levels as described by Benner. However, the question remains as to why individual panel members have, on occasion, placed a participant either at a greater or lower level than one would expect. Clearly, as individual judges, panel members were over or under-estimating the functional level of participants or, alternatively, the participants in the study were over/under performing.

3.8 Discussion

In chapter three, the previous work exploring priority setting using simulation was extended by the use of think-aloud method and semi-structured interviews. Additionally, work was done to investigate the validity of simulation method as a means of differentiating between nurses with varying levels of expertise. This required a review of the use of expert panels in such a manner. To recap, the principal aims of this study were to –

1. Identify and investigate the criteria and strategies used by learner and trained nurses to prioritise care.
2. Explore those factors that influenced this prioritisation.

3.8.1 Key Findings

The findings from chapter three provide us with a clearer view of what is happening in priority setting. A number of findings were consistent with the work of Benner and others that support a novice/expert framework. It was also possible to identify a number of attributes of the priority setting process. These findings will be discussed further below.

The concept of confidence comes through the verbal protocols, and later in the interview data, in a way that links growing confidence to increasing experience. The suggestion that there is a positive correlation between the greater experiences a nurse has, and the confidence they feel, is clearly not an unexpected one. Indeed, the relationship between experience and the sense of confidence or self-belief that an individual has is evocative of the concept of self-efficacy as described by Bandura, (1997). However, it is important to note that confidence does not appear to be simply a corollary of experience, but rather the nurses describe increasing confidence, which appears to make it possible for them to gain and make best use of the available experiences. It is also important to appreciate

that even proficient and skilful nurses may on occasion find themselves lacking in confidence when faced with a new or unfamiliar situation –

'I mean, it's like coming back from being on days off or holidays and you walk into a ward... the patients - you don't know them.... I would say it takes a day or two to get into the way of things.'

Senior staff nurse

When this happens Benner (1984) suggests that the nurse will 'regress' to an earlier stage of skill development, perhaps, for example, returning to the use of rule-based actions.

Why is confidence so important? Having confidence in yourself and your abilities, be they in the practical or cognitive domains, empowers and enables practitioners. An air of confidence engenders confidence in others, in peers, patients and relatives alike. This in itself may be positive, reassuring, and on occasion even therapeutic. Nevertheless, a lack of confidence may be useful in that it can act as a safeguard for the practitioner. A practitioner who lacks confidence may hold back from making decisions or engaging in nursing actions until they identify some other confirmatory evidence, or until they seek the views of another practitioner. Whilst a deserved and appropriate level of confidence may support practice, nevertheless, under or over-estimating one's own confidence level may lead to poor standards of practice. The nurse may fail to act when she should, or take actions and make decisions that she should not.

As mentioned earlier, examples of rule-based behaviour were seen, especially in the students' verbal protocols. What is of further interest is the manner in which the learners come to acquire these rules. It seems that, for at least some rules, the students perceive the source of these rules to be other nurses, acquired via direct and indirect means. That is, some of the rules are given to the learners explicitly through instruction by supervisors, whereas others are acquired implicitly through continued exposure to the world of nursing. Rule-based actions permit a beginner to engage in practice. They enable the learner to step out into the world of practice with a degree of security. Nurses who rely principally on explicit rules for practice will inevitably find that their planning and priority setting is determined to a large extent by the rules rather than by the nurse themselves. It will inevitably result in a loss of flexibility in the provision of care if the nurse finds herself having to follow the 'rules.'

In contrast to the published literature, which suggests that intuitive judgements are a defining characteristic of expert nursing practice, the data did not clearly identify such judgements. It is possible that the nature of simulation methods preclude such judgements. By definition such methods are not real. They lack that vital quality of actual clinical practice. When dealing with 'live' patients the nurse is presented with a myriad of cues and information that provide a global picture. It is certain that simulations cannot replicate all of these sources of information adequately. At the level of proficient/expert the practitioner perceives situations in wholes, decision-making is less laboured, they move directly to the core of the problem and consider far fewer options (Benner, 1984). This description suggests that an experienced nurse has an immediacy of awareness concerning a situation, to which they can respond relatively quickly. Reviewed in the light of these characteristics, two of the TA reports give an impression of an almost instant sense of what is required followed by a confident plan of action.

Perhaps the most important finding from this phase of the study was that the results support the view that priority setting is a complex, dynamic, multi-dimensional problem-solving skill. As has been identified in chapter one, the existing literature suggests that priority setting is a key skill for professional and competent practice; however, it says little about this skill *per se*. A simplistic model of priority setting proposes that one attends to the most important or most urgent demand first and the least important last, ranking all other demands in order of importance or urgency. The findings from the work presented here suggest that this simplistic model is an inadequate one.

The results from the current study thus far appear to suggest that priority setting is determined by two main characteristics. The first of these is the views, values and perceptions held by the nurse regarding the patient and their care, and indeed those held by the nurse with respect to the organisation in which they work, and the nature of nursing and its aims. The second is the development of key skills, knowledge and experiences that enable the practitioner to set priorities of care by engaging in problem-solving and decision-making.

In relation to the former, the significance of the themes **personal perspectives on care**, **knowing patients**, and **perceived significance of actions and cues** is particularly important. Those individual characteristics of the nurse, such as whether or not they are more likely to favour an approach based upon individual patients rather than patient care activities; the extent to which their current perceptions of their role affects their

decision-making; the pressure they feel under to conform to certain ways of working, can all impact on the priorities set by them. So too, the notion that the priorities set by practitioners have an absolute value distinct from, and not influenced by, other factors is inaccurate. Rather, the value attributed to a proposed action may be relative in a number of different domains, including medical diagnosis, case complexity, and nurses' judgements regarding the physical needs of the patients in their care. And finally, the apparently key role that knowing your patient appears to have in priority setting has been described. The more the nurse is aware of their patients' strengths and weaknesses, the more familiar they are with the patient as an individual, then the more the plan of care devised by the nurse can be adapted to the needs of that person. Those participants who cited the importance of knowing their patients were suggesting that this would enable them to set priorities for patients that were more appropriate and relevant.

Regarding the skills required to be an effective priority setter, these are to be found in the themes of **making decisions**, **managing information** and **managing time**. These skills are gained through exposure to a range of experiences, and through practice. The ability to be a good decision-maker requires not just clinical knowledge and experience but also requires the nurse to be able to manage and resolve competing demands, to be an effective time manager (Orme & Maggs, 1993). After all, the nurse cannot be in two places at once, nor as a rule, undertake two activities at the same time – setting priorities is not just about selecting the most immediate, urgent or important activities but requires the nurse to impose a temporal organisation on these proposed actions. Recently, Bowers et al. (2001) have also highlighted the impact that repeated interruptions can have on time management. Interestingly, trained nurses in the current study also suggested that an important skill is that of delegation; of knowing when it is appropriate to assign aspects of a patient's care to others. The importance of being able to identify and retrieve pertinent information essential to meaningful care planning was also noted. Lastly, issues in terms of time itself were observed; issues to do with having an awareness of when things are due to happen, how long they will take, their relationship to other events, and the notion of being a good time manager.

Using expert panels to review the reports and interviews of the participants allowed the researcher to explore the construct validity of this simulation based approach as a method for studying novice/expert differences. Most published reports of panels of experts lack any clear description of how such panels are selected or of how the judgements they make are arrived at. The panels are often inadequately described, and it is difficult to make comparisons between different studies because of this. In the current

study the two panels were selected because of their relationship with the participant groups and their characteristics were described in some detail.

In reviewing the reports and interview data generated in association with the simulation exercise, the expert panels were able to differentiate between the four grades of participants. It was also shown that the two panels were broadly in agreement regarding their judgements. These findings suggest that simulations have the potential for being used in research of this kind where the goal is either to explore behaviour, or to look for differences in responses between groups.

Finally, in this section mention must be made of the fact that although apparently distinguishing at the level of groups, the simulations produced a number of examples of the panel of experts over and/or underestimating the functional level of participants. The reasons for this need to be explored further, as this error margin is a potentially limiting factor in any practical application of simulations as a means of determining level of expertise. This may reflect deficiencies in Benner's model in that it may not be sufficiently discriminating of novice/expert differences or, alternatively, the simulated case-load may not have yielded a sufficiently discriminating challenge to the participants.

3.8.2 Other Findings

One unexpected finding from this study was the implication that 'difficult' patients may be given a high priority and attended to first or early in the nurse's day. In this sense, difficult is taken to mean the notion that a patient is unpleasant, rude or in some way unreasonable. This was highlighted by one junior student –

'... if you know someone is pretty obnoxious, or will be the first to shout if they don't get something they want right away, I think you tend to go to them first in all honesty.'

This finding runs contrary to the classic good patient/bad patient literature, which suggests that difficult patients, especially those that are troublesome in terms of their behaviour, are often avoided by caregivers (Lorber, 1975; Kelly & May, 1982; Podrasky & Sexton, 1988; Johnson & Webb, 1995; Nolan et al., 1995; Juliana et al., 1997; Nield-Anderson et al., 1999). It may be the case that junior students with limited experience have not yet developed strategies for managing difficult or problem patients. It is therefore easier, and from the student's perspective more efficient, to meet the

immediate demands of such difficult patients. A further possibility is that the reaction to such patients is a 'learned' response, one that the novice nurse is socialised into through experience, and as such, a junior student has still to acquire the 'appropriate' behaviour. This finding is worthy of further study.

3.8.3 Strengths

The key strength in this phase of the study of priority setting was the use of think-aloud in conjunction with the simulated case-load. This permitted the participants' own words to describe what was being taken into account whilst completing the planning activity. On their own, simulations can tell the researcher what answer the participant arrives at, however, they cannot say anything about the journey undertaken by them on the way. The use of semi-structured interviews following completion of the TA activity enabled a deeper exploration of priority setting from the perspective of the learner and trained nurses.

3.8.4 Limitations

Whilst the use of simulation together with think-aloud, followed by the semi-structured interviews, has enabled a clearer picture to emerge of priority setting, the findings must be considered tentative. The principal reason for this being that no matter how well constructed a simulation is, it is not the real world. A further limitation in the use of simulations is the difficulty in knowing the extent to which, what participants indicate they would do in a simulation, would be representative of their actual behaviour in clinical practice. Furthermore, the sample size and context within which this study was conducted limits the extent to which the findings should be seen as indicative of priority setting in other areas of nursing, or by other practitioners and students.

3.8.5 Implications

The results from this study suggest a number of possible implications. Some relate to educational approaches that may be beneficial in the preparation of student nurses in respect of developing priority setting skill, and others are of a methodological nature.

It would seem that junior students in particular face difficulties in dealing with difficult patients whose behaviour is demanding or socially unacceptable. It would help their decision-making if students were introduced to the concept and theory of caring for difficult patients early in their course. Furthermore, preceptors could be encouraged to

assist students to reflect on encounters that they may have found difficult, in order to analyse their experiences, and to suggest strategies for improving this aspect of their practice.

Similarly, students should be made aware of the role that confidence plays in relation to their practice and should be cautioned against inappropriate levels of confidence. Again, guided reflection on practice may help the student to identify instances where confidence had a positive or negative effect on their performance. Preceptors should also look for opportunities to positively reinforce good performance and decision-making in order to build further learners' confidence.

Furthermore, if knowing patients as described above is beneficial to planning individualised care, and the setting of priorities, then preceptors must help students develop strategies for gaining such knowledge. A student can be helped in this regard by adopting some of the suggestions outlined above, i.e., guided reflection, and positively commending good practice. Another strategy that might assist students to develop observation skills, and thus help them make the most of 'seeing' the patient, is to accompany them to a patient's bedside and ask them to describe all they can see and what it might mean. Inevitably, an experienced nurse will 'see' more, and by comparing observations the student can gain insight into the art and science of 'seeing' patients vicariously.

The final two points in this section concern methodological issues.

If the use of simulation as a method in the study of nurses and nursing is to be of benefit, then it is important that the simulations used are as close to the reality that they are attempting to represent as is possible, within the constraints of the approach (Lamond et al., 1996). However, it is important to acknowledge that simulations are used because it is often not possible, or it is inappropriate, to use real life settings. Inevitably, simulations will lack certain aspects of that reality, nevertheless they remain a useful tool in the study of complex areas such as decision-making, problem-solving and care planning.

A final point is offered regarding the selection and use of expert panels in research. Where a panel of experts is convened, it is important that their expertise, and their role in the research study, is made explicit. Their expertise, and how it relates to the topic under study or review, must be made clear to those who read or who may make use of

the findings. It is also essential that the steps used by the panel in reaching their judgements be outlined so that those who wish can satisfy themselves as to the contribution made by such panels.

3.9 Conclusion

In conclusion, chapter three has shown that priority setting in response to a simulated case-load is neither simple nor straightforward. The think-aloud method can be used to study the problem-solving strategies, and to identify influencing factors, of learner and trained nurses when presented with a priority setting exercise. By using expert panels it has been shown that simulations are a useful method to study nurse decision-making, and that the particular simulation used in this study could generate real and measurable differences between participants representing nurses at different functional levels.

However, it remains the case that all the work undertaken to date considers priority setting out of context. Simulations cannot hope to replicate the 'swampy lowlands' of real clinical practice, and is for this reason that there is a need to move the study out into the real world of clinical nursing. The development of the study in a clinical context will be the subject of chapter four.

Chapter 4

Studying Priority Setting in Clinical Practice

4 Chapter Four: Studying Priority Setting in Practice

4.1 Introduction

As was seen from chapters two and three, the use of simulation to study the decisions made in relation to priority setting, can provide useful insights into what learner and trained nurses may do when making such decisions. However, there are clearly limits to the conclusions that may be drawn from such simulation methods. It is for this reason then that any study of professional practice must, at some point, look at that practice in the environment in which it actually occurs. Not to do so would lead one to question the validity of such findings, and to risk drawing inferences from the results of such simulation that would be doubtful in relation to priority setting in practice.

This chapter will begin with a review of the overall aims of the clinical phase of the study. As the nature of the 'real world' of practice is very different from that of research conducted in a laboratory or other simulated settings, a consideration of those particular methodological issues pertinent to this phase of the research endeavour will also be undertaken. Undertaking a research study in a practice area involves the resolution of a number of difficult and complex organisational factors; therefore, questions related to study design will be explored. Subsequently, findings from each section of the study will be reported and discussed. Consideration will also be given during the discussion to the particular challenges faced by conducting research in a clinical setting and recommendations made for meeting these challenges.

4.2 Aims of Clinical Study

It has been established from earlier phases of the current study, that the findings from both the existing literature, and the simulated exercises, lend support to the notion that priority setting occurs systematically, and that there are differences between learner and trained nurses in this regard. The broad aims of this phase of the study were intended to answer the following questions –

1. Are there differences between learner and senior staff nurses in their setting of priorities in actual clinical practice?
2. If there are, what is the extent and nature of these differences? Do learner and senior staff nurses use different cognitive strategies to set priorities?
3. To what extent are those factors that influence and affect priority setting, as elicited in simulation methodologies, apparent in the 'real world'?

4.3 Methodological Issues

As suggested in a previous section, there are a number of discrete methodological issues that need to be considered when taking a research study into a clinical setting, and in relation to the chosen methods. These issues include –

1. A comparison of simulation versus clinical or ‘real world’ research.
2. A consideration of the issues relating to the use of think-aloud methods in clinical settings.
3. A review of the potential difficulties in analysing data generated from clinical verbal protocols.
4. A consideration of the particular nature and potential benefits and challenges of working in a setting with which the researcher is professionally familiar.
5. A review of the particular methods used, with emphasis where appropriate on their use in clinical settings.

Further to this, a review will be undertaken of the ethical considerations that must be taken into account when working in clinical areas involving close proximity to patients.

4.3.1 Simulation versus ‘Real-world’ Research

A review of simulation methods was undertaken in chapter two, section 2.3.1. Chapters two and three demonstrated the utility of this method in the study of nurse priority setting. However, the limitations of this method have prompted a number of researchers to explore decision-making and problem-solving in the context in which it actually takes place, that is, in clinical practice situations (Luker & Kenrick, 1992; Fonteyn & Fisher, 1995; Fitzpatrick, While, & Roberts, 1996; Fonteyn & Cahill, 1998), or as Schon describes clinical practice, ‘the swampy lowlands’ (Schon, 1983, 1991). Interestingly, medical education in the early 1960’s saw a move towards simulated patient scenarios, and away from real-world experience, because of the extreme variability of a clinical environment that they could not control (Hubbard, Levit, Schumacher, & Schnabel, 1965; Barrows, 1968). However, perhaps this says more about the prevailing view of science and knowledge held by medical practitioners of that time, as a hard, objective reality, with a concomitant need to have standardised, objective measures, above anything else. Jacka & Lewin (1987) also highlight the inherent variability of clinical environments.

Nevertheless, well-constructed simulation studies, can suggest or indicate the processes, strategies and responses that may be typical of the group under study. However, it is important to emphasise that it is only by taking the same research question(s), and looking at them in the context of clinical practice, that one can confirm the applicability of findings from simulation studies.

4.3.2 Using Think-aloud in Non-simulated Environments - Previous Work

Because of the inherent problems in drawing conclusions from simulated work, it is perhaps surprising that only a very few studies have been conducted that attempt to study problem-solving in the real world. Some of these studies have used think-aloud in clinical settings. However, as yet the total numbers of such studies remain relatively small.

Almost all of the work done on nurses' decision-making, reasoning, and cognition, has been undertaken using simulations, thus making the extrapolation of findings to the realities of clinical practice fraught with problems (Fisher & Fonteyn, 1995; Fonteyn & Fisher, 1995). Fisher and Fonteyn suggest that simulations are bound to lack the contextual complexity of the real world. For this reason they set out to explore the usefulness of TA method in actual clinical practice, claiming this to be the first use of TA in a live situation. Their study used a sample of three registered nurses working in neurosurgical and cardiovascular intensive care units. Think-aloud data was gathered from each participant on four occasions, whilst caring for a single post-operative patient from the specialities indicated above. Fisher and Fonteyn indicated that at no time during the gathering of TA data during clinical practice was there any disruption of unit routine, or threat to patient safety. They also negotiated a temporary transfer of one participant from cardiovascular intensive care to neurosurgical intensive care to investigate how their reasoning differed in this unfamiliar environment; an action of dubious ethics. This initial exploratory use of TA in a clinical setting seemed to indicate its feasibility, although the circumstances of its use are perhaps highly particular, in that the nurse was caring for only a single patient, who was highly sedated. Their work certainly supports the further use of TA in actual clinical practice.

Fowler (1997) suggests that using real-life nursing practice, rather than simulation, will give a more valid picture of clinical reasoning. She used think-aloud method to study care planning for newly admitted, chronically ill patients by experienced home healthcare nurses. Although the cases were 'real', Fowler asked her participants to think-aloud immediately before and after visiting newly referred patients, rather than during

the delivery of care, stating that to do so would have altered the 'natural thinking and care delivery processes.' She does not indicate, however, if this was typical of the normal planning process that her participants would have used.

Stimulated by an interest in how nurses make decisions in respect of wound care, Watson (1994) attempted to study decision-making in clinical practice. His principal method was that of observer as participant, however, his paper also indicates the use of TA. In his study, Watson, using observation, noted when he thought that participants were making decisions regarding wound care, and think-aloud was then employed to elicit the thought processes associated with that decision. However, no details are given as to how TA was conducted, or how the resulting verbal protocols were analysed.

Greenwood & King (1995) note that of all the studies conducted that explore nurses' clinical reasoning, there are very few conducted in clinical practice regardless of the method used. Indeed, they can cite only two studies using TA in real practice situations, namely Itano (1989) and Tanner (1989). However, when one reviews Itano's paper it is not at all clear that she did in fact use TA method. She makes no mention of TA method, but rather refers to participants being asked to 'review their thoughts', as an earlier nurse-patient interview conducted by the nurse is replayed. They again suggest that clinical reasoning studies conducted away from such settings may not be relevant to such settings (Greenwood, 1993; Greenwood & King, 1995).

Greenwood and King's investigation used TA to study nine pairs of 'expert' and 'novice' orthopaedic nurses as they carried out patient assessments and devised care plans for patients who had undergone elective total hip replacement in the previous three days. They used both concurrent and retrospective TA reporting with the former taking place at the patient's bedside. This is only one of three studies, excluding the present study and that of Itano (1989) mentioned above, that use TA in real practice settings, the other being (Fisher & Fonteyn, 1995). Graves (1995) proposes that 'in vivo' TA enables a better understanding of real-time cognitive processes in clinical practice. The ethical concerns expressed by Jones (1989) regarding such studies were not shared by Greenwood and King, however, they did ask the nurses in their study to filter out any potentially distressing information, though what constituted such distressing information was not made clear. This filtering action also raises questions in respect of the validity of their findings as, by asking the participants to attend to, identify and filter potentially distressing information, they were adding an additional cognitive load on the participants that may have detracted from the think-aloud report. The activity in

question, as in the previous studies, only focused on one patient at a time. It is not clear from Greenwood and King's paper whether both novice and expert were both present during each other's bedside TA. They suggest that clinically based TA reports did not appear to provoke any 'discomfort' for either nurses or patients, and indeed patients appeared to enjoy the experience. They also suggest that the nurses in their study gained an element of intrinsic reward by participating in the research.

In summary then, very few reported studies have attempted to study actual clinical decision-making and reasoning using TA methods, despite the widely acknowledged limitations inherent in simulation methods. Those studies that have attempted the use of clinically based TA reports, only ever involve planning or caring for one patient. As was indicated in chapter one, this one-to-one ratio of nurse/patient care is atypical of most hospital based nursing care. There is little discussion in the literature about the practical issues surrounding clinical TA, although this early work does seem to lend support to its use.

4.3.3 Analysing Verbal Protocols Generated from Clinical Think-aloud Reports.

A number of approaches to analysing the data generated by think-aloud reporting have been described, and these have been detailed in chapter three, section 3.3.1.2. Whatever approach is adopted in analysing verbal protocol data, it is necessary initially, to deconstruct the think-aloud report, that is, to break down the report into segments or chunks, according to some previously determined criteria. However, in analysing verbal protocols yielded from clinically based think-aloud reports, there is a risk that the context of the specific segment and its natural relationship to other segments is lost. This raises the possibility that the segment may be incorrectly categorised, and therefore, from the perspective of clinical practice, the wholeness of the data lost. For that reason, it may be necessary for the researcher to reconstruct segments into larger chunks, in order to re-contextualise a section of verbal protocol, regaining a sense of the whole, and thereby ensuring that it is accurately coded.

4.3.4 Working in a Familiar Setting

In conducting this study, the researcher was working in a setting that was familiar to him. This familiarity existed on a number of levels. The hospital in which the study was conducted was one that was well known to the researcher, in that the researcher had undertaken part of his initial nurse training there, and had also worked as a staff nurse in

one of the wards that was part of the study. As a link lecturer in two of the wards, the researcher also had a professional relationship with the ward staff, and indeed as a Lecturer at the local School of Nursing and Midwifery the researcher also had a relationship with the nursing students who participated in the study. It has been suggested that familiarity with the research setting can prove problematic. Ashworth (1986) states that by working in a familiar setting the researcher may lack a critical distance, and may fail to see the research setting as it really is. Working in a familiar setting may make it difficult to 'see through' one's 'taken for granted' assumptions and expectations about a research setting, or about research participants (Hammersley & Atkinson, 1983; Ashworth, 1986). Similarly, Bogdan & Taylor (1984) also suggest that researchers do not enter settings with which they have a significant personal or professional contact. In their view, it is not possible for the researcher to maintain the necessary distance that is required to suspend one's own perceptions and pre-conceptions about a familiar setting. Swanson (1986) cautions the beginning researcher that it may be problematic to try and 'wear two hats', those of nurse and of researcher.

In contrast however, Chenitz (1986) states that it may indeed be advantageous to have a relevant clinical background when conducting research in a clinical setting, although also points out that the researcher must be sure to 'assume a predominately research role.' Other authors take a stronger position in this regard and suggest that it is essential that nursing practice research is carried out by those who are familiar with the setting and context within which the practice is taking place (Burgess, 1982; Greenwood, 1984). Brown, Collins, & Duguid (1989) suggest that only those within a culture are equipped to study it. In a similar vein, Pearsall (1965) states that nurses familiar with the research environment possess an advantage that it may take others months or even years to acquire. Hanson (1994) whilst acknowledging the potential difficulties of working in a familiar setting, suggests that familiarity with the research setting need not always be an insurmountable obstacle to conducting reliable and valid research.

Familiarity with the research setting, and those present in it, may facilitate the study and secure the co-operation of those involved because of previously established personal and professional working relationships. In this study the researcher was on first name terms with many of those working in the study settings and was on 'nodding' terms with most of the other nursing staff working there. The nature of the researcher's other relationships with the study areas, i.e., as link lecturer and former colleague, were such that, whilst the researcher was familiar with the setting and with many of the staff, these did not necessarily threaten the integrity of the study. In wards A and D, there were

members of staff with whom the researcher had in the past worked as a clinical colleague, however, this was approximately ten years previously. In wards B and C the researcher had similarly worked with some of the nursing staff, however, the researcher was also allocated these two wards as the link lecturer for the School of Nursing and Midwifery. This contact took the form of visiting these areas two or three times each month for approximately one hour. At this time, the link lecturer would liaise with ward staff regarding students and developments in the programmes for pre and post-registration nursing education, and would also meet with students to discuss progress, and conduct tutorials.

Although the researcher was familiar with this research setting, and with many of the individuals who were working there, this familiarity was such that, in the view of the researcher, it was likely to facilitate the study, e.g., improving access and encouraging co-operation, rather than act as an impediment to it. However, any researcher working in a familiar setting must be aware of the possibility that such familiarity could undermine the findings from their work, and should be cautioned to take this into account in the earliest stages of planning their study. In the current study, the researcher assumed a friendly yet not overly familiar tone with the participants, to limit the risk of 'going native' and becoming too close to the field of study. He also adopted a reflexive attitude during the data collection and analysis, trying to ensure the maintenance of a critical distance.

4.3.5 Ethical Approval

Although not directly involving patients, the study would involve the researcher being in close proximity to patients, and would involve those nurses with immediate responsibility for providing those patients' care. Thus the possibility existed that in carrying out this study, patient care could be affected. It should also be noted that another possible problem of research conducted in a 'live' setting is the issue of patient confidentiality. By virtue of being in close proximity to patients and the professionals who care for them, one will inevitably see and hear matters of confidence. As the researcher was a registered nurse this latter concern was perhaps less significant, as the researcher was bound by his statutory body's Code of Conduct (UKCC 1987; 1992, clause 10), which states that a nurse must 'protect all confidential information... obtained in the course of their practice.' However, advice was sought from the Secretary of the Local Research Ethics Committee in the area in which the research study was being conducted. Following an initial telephone conversation the Secretary requested a brief outline of the study (Appendix XXIII). Subsequently, confirmation was received

that no formal application for ethical approval was required (Appendix XXIV).

4.3.6 Observation

Observation is an essential part of nursing, stated the founder of modern nursing, Florence Nightingale (Nightingale, 1859). One hundred and forty years later, observation is still seen as a key skill in professional nursing. Swanwick (1994, pg.4) states that *'of all research methods observation is perhaps closest to everyday life.'* For Barker (1991a, 1996) too, observation as a research method can be seen to be an extension of everyday behaviour. It is perhaps, not surprising that nurses, so familiar and so practised at observing patients and clients, should be attracted to this research method when studying nurses or nursing. Merrell & Williams (1994) state, however, that this method has been underused in a nursing context, suggesting that this is due to the privileged status given to scientific medicine, which places a strong emphasis on measurement and objectivity, and which has strongly influenced nursing research for many years. It is worth noting that measurement may or may not be an element of an observation study depending upon the particular topic under investigation; observation may not always include measurement, however, neither is it incompatible with it. Fitzpatrick et al. (1996) further suggest that the use of observation to explore nurse performance in the clinical setting has been limited. This, they propose, may be due to the challenges of adopting observation as a research method. These challenges include: potential ethical issues; potential observer influence upon participant behaviour; potential influence of situational and personal factors on the behaviour of those being observed; potential observer error; reliability of observer rating; and potential of observer drift over time.

Observational methods have been used in clinical settings specifically to study decision-making (Tanner et al., 1987; Watson, 1994). Watson states that direct observation is important because it permits the overall complexity of the decision to be compared with the complexity of decisions used in simulations.

For Robertson (1982) the chief advantage of observation over other methods such as activity sampling is that observation sets the behaviour or activity against a background that helps to make sense of the total picture. It provides the contextual information necessary to makes sense of the reality of complex activities.

As a research method, observation has a long and credible history. Classic observational studies include the work of Charles Darwin, Margaret Mead, Piaget and others. Swanwick (1994) suggests that interest in observational methods as a means of gathering data about a phenomenon of interest was stimulated because of concerns regarding distortions which could arise in other methods such as interviewing or formal testing.

Observational studies can use a range of modes of observation, which are usually characterised by the extent to which the 'observer' participates in the area of study. For Burnard & Morrison (1994), the defining characteristic of observation is the extent to which there is involvement, interaction, or participation, between the observer and phenomenon, or people, being observed. This is generally regarded as a continuum, with at one end, the non-participant observer and at the other, the participant observer.

Barker (1991a, 1996), suggests an alternative classification, namely direct and indirect observation. For Barker, direct (or non-participant) observation is characterised by objectivity, a systematic framework and the use of formal recording techniques, and indeed, Barker seems to suggest that this is a desirable and positive attribute of direct observation. The inference here is that indirect (or participant) observation lacks the systematic, objective formality of the former.

However, this bipolar view of observation can be regarded as an over simplistic representation of the variety of roles that the researcher may adopt. Johnson (1992) outlines a number of intermediate roles that may be held by an observer (after Gold 1958).

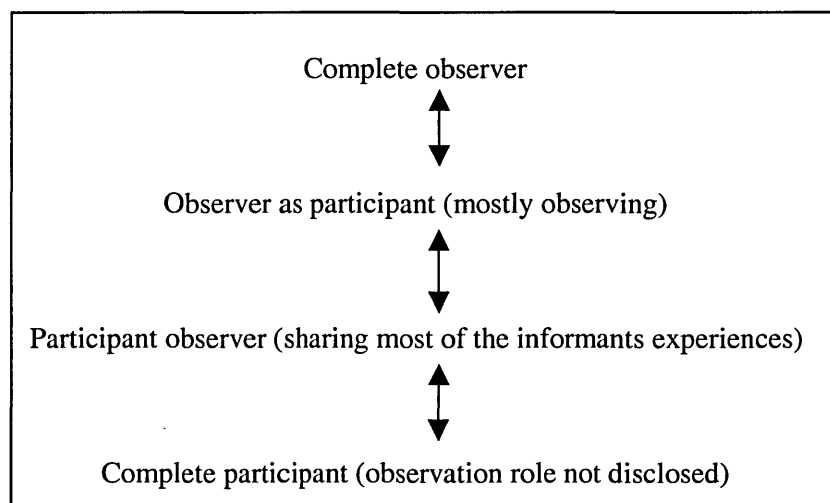


Figure 4-1: Range of participation possible in observation methods (Johnson 1992).

Couchman & Dawson (1995) give a slightly different model –

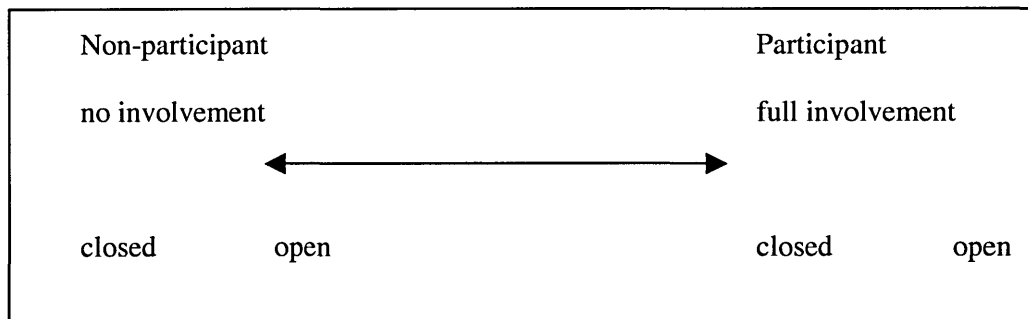


Figure 4-2: Range of involvement in observational methods (Couchman and Dawson 1995).

The features ‘closed’ and ‘open’ refer to whether or not the individuals being observed are aware that a research study is being carried out. Clearly, this can raise a number of methodological and ethical considerations.

Participant observation can be described as

‘a particularly intense way of living, a day-to-day experience in which you are simultaneously caught up and distant; at once a participant and a questioning observer of your own and others’ participation in ordinary events.’

(Toren, 1996, pg. 103)

In participant observation, the researcher directly observes and participates in the sense that he or she gets to know the individuals being studied. In non-participant observation, however, the observer stands at a distance from the activities he or she is investigating. Achieving non-participant status may, in fact, turn out to be more difficult than anticipated (Pretzlik, 1994).

For Seed (1994), participant observation is a particularly powerful method since it involves the researcher in experiencing the social world he or she is studying. In this world the observers must ‘play the role’ in the participants’ territory and on their (*the participants*) terms (Pearsall, 1965).

In observer-as-participant models there is less direct participation and the researcher can withdraw at frequent intervals. This, it is suggested, is more suited to those forms of observation in which the researcher may engage in repeated brief contacts with several people (Robertson, 1982).

The whole question of which mode of observation is superior is one which does not permit a simple response. Different modes have their own strengths and weaknesses, and the choice is perhaps more strongly linked to the particular research question, and the researcher's philosophical perspectives regarding the nature of scientific inquiry than anything else. Perhaps in respect of this confusion it is not surprising that Pretzlik (1994) identifies an alternative, that of the partially involved observer. However, Jorgensen (1989), seems to suggest that the whole debate is something of a 'red herring' arguing that the reported conflict between observation and participation is greatly exaggerated.

In deciding which mode of observation to adopt, a key question appears to be the extent to which the researcher concludes that objectivity is a desirable or necessary element of the study. In the debate surrounding participant as observer versus observer as participant, Robertson (1982) argues for the latter. She states that it avoids the loss of objectivity, and of going native, which is associated with the former. She, along with others, proposes that such objectivity is essential to good research (Robertson, 1982; Barker, 1991a; Endacott, 1994; Barker, 1996). Labovitz & Hagedorn (1976) also suggest that an observer may become so immersed in the situation as to lose objectivity. However, this drive for objectivity is less of a concern for Schwarz & Schwarz (1955) who assume that observer bias is a universal phenomenon, and that the observer can and does know what his or her biases are. That all researchers exhibit biases seems self-evident, however, it is less certain that they are necessarily aware of these biases either in their totality or at any given point in time. It is possible that, at least some of the time, our biases are operating at a level below our complete awareness. Nevertheless, being aware of one's potential biases certainly allows one to take precautions to minimise their effect, and thus prevent distortion. However, Robertson is less certain in this regard. Merrell & Williams (1994) suggest that the assumption that by being an outsider one brings greater objectivity is open to debate. There is an assumption here that such objectivity is both achievable and good.

A legitimate question regarding observational methods concerns the likely impact of the observer upon the activity or behaviour being observed, first described as the Hawthorne effect, and a concern raised by a number of authors (Labovitz & Hagedorn, 1976).

However, this concern is somewhat overstated. Byerly (1969) suggests that as participants get used to the observer's presence they begin to regard them as a member of their group. Fox (1966) and Rutherford & Spitzer (1968) claim that observers will be accepted with minimum disruption of ward activity, and Robertson (1982) notes that as 'just another person in a white coat' she found she was accepted easily into the observational setting. Pretzlik (1994) also suggests that the normal frequency of visitors to the study area is significant in relation to 'observer effect.' A large teaching hospital will experience frequent visitors, and thus the impact of 'strangers' in this environment, it could be argued, will result in such a study setting suffering less from this effect. It has also been suggested that participants would be unable to sustain a false front over a period of time, and over repeated visits. In other words, participants become acclimatised (Robertson, 1982). She does suggest, however, that one can distort the situation by participating too freely or in inappropriate ways.

Just as there are a number of different modes of observation, so too is there a range of observational techniques. Most observational techniques use 'real-time', or live observation, with the observer being physically present in the area of study. An alternative to this, however, exists in the use of video recording with subsequent playback of the phenomenon of interest. Whereas video recording does have the advantage of repeated playback, and the retrospective application of new coding schema, live observation allows the observer to experience and capture the context and ambience of the research setting in a way which is not possible with video (Lobo, 1992). Additionally, the observation may take place in a naturalistic environment such as a hospital ward or classroom, or it may take place in an artificial setting such as a research laboratory, or some other simulated setting.

A further consideration is the sampling frame, or strategy. Many different sampling strategies are described in the literature (Barker, 1991a; Lobo, 1992; Swanwick, 1994; Barker, 1996; Birchall & Waters, 1996), however, what they all have in common is that they are based on sampling by time, or by event. In the former, observations are made for brief periods, say 30 seconds, at regular intervals, perhaps every 5 minutes. During the observation period, the presence or absence of previously defined categories of behaviour is noted and recorded. In the latter, all relevant events occurring during the observation period are noted and recorded. The observation period here may be represented by variable amounts of time, the limiting factor being the observer's ability to remain focussed on the phenomenon of interest.

In the case of complete participant observation, it would not normally be practical to attempt to record one's observations during the observation period, and therefore, diaries or extensive field notes would be kept. In other modes of observation, one could use an observation schedule specifically designed for the study to record occurrence, frequency and duration of phenomena of interest. This could be augmented, where appropriate, with field notes. Barlow (1994) states that in qualitative research two basic components are usually identified, namely recording observations of events or occurrences, and recording impressions of observations and occurrences.

Regardless of the mode of observation, or the sampling strategy selected, it is certain that the behaviour being observed needs to be clearly identified to avoid any ambiguity. Accurately defining what is to be observed allows the collection of focussed data, reduces observer subjectivity and bias, and allows observations to be compared with one another (Barlow, 1994).

A related question is, 'How does the researcher identify what activities/behaviours should be observed?' Ideas of what to observe may originate from a number of sources. Other published research studies, or earlier pilot or exploratory work may suggest possible categories. Barlow (1994) also suggests using an 'expert' panel, or Flanagan's Critical Incident Technique as a mechanism for identifying observational categories.

Labovitz & Hagedorn (1976) suggest that one criticism of observation methods is that observers must wait passively for the events of interest to happen. However, whilst it is clear that the likely frequency of the observed behaviour must be taken into account when devising the sampling strategy, it seems equally clear that the concept of 'passive waiting' need in no way be regarded as a negative one. By allowing events and behaviours to occur naturally, one is observing the true behaviour that one is presumably interested in. Certainly, in naturalistic research such as the clinical phase of the current study, the key point is to observe behaviours and decisions as they occur 'in situ.'

In summary, observation has a long history, and although seen by many nurses as a most suitable method for the study of nurses and nursing, has nonetheless not been used to the degree that it might have. In deciding to use observation as a research method, the researcher must consider the particular mode of observation that will be best suited to the research questions. They must decide upon the sampling strategy, and method of recording data that will be used. Finally, the researcher must further reflect on measures that can be used to ensure that the data collected are a true reflection of the event or

behaviour under study.

In the current study, it was decided to adopt the role of observer as participant, or as Pretzlik (1994, pg.20) perhaps more accurately describes it, '*partially involved observer*.' An event-based sampling strategy was used, as this permitted the researcher to capture all behaviours and events that occurred in a pre-determined period. The use of an activity schedule was used to identify and record observed phenomena, however, this was supplemented by the keeping of contemporaneous field notes. More detail on the problems encountered, and the measures taken to minimise observer effect and bias, are given in a later section.

4.4 Study Design

4.4.1 General Design Considerations

In designing a study of this kind, a number of general design features need to be taken into account. Firstly, recruiting participants to participate in this study required some intricate and complex negotiations. Secondly, managing a research study using qualified nurses, nursing students and four different clinical areas created an organisational challenge that will be reported on.

4.4.1.1 Recruitment

Recruiting to the study involved ensuring that not only were all the necessary approvals sought and given, but that all those individuals, who were part of the line-management structure, and who could potentially have an interest in the conduct of the research, were informed. Prior to the commencement of the first phase of the study, both the Director of Nursing in the Hospital in which the study would take place, and the Principal of the College of Nursing and Midwifery (as the educational establishment was then, prior to integration into a local Higher Education Institution) had been approached and had given broad support to the work and the involvement where necessary of their staff (Appendices VIII, XIII).

For this third phase of the research, the researcher approached the Clinical Nurse Manager (CNM) of the Medical Directorate in which the study would be carried out, and an outline of the proposed study was given. The CNM was already aware of the study, as, in an earlier phase, she had given permission for the researcher to conduct work in her area. Following a brief discussion, verbal support was given for the study; however,

this telephone conversation was subsequently confirmed by letter (Appendix XXV).

Nursing students are allocated to the placement areas in which they will gain clinical experience by the Allocations Department of the School of Nursing & Midwifery. Once those nursing students who were being allocated to the medical wards in which the study was to be conducted were identified, a notice asking them to contact the researcher was placed on the students' notice board.

Subsequently, a brief meeting was arranged with the students, at a mutually convenient time, and an outline of the research was given, and what their agreement to participate would involve. It was important, because of the possible perceived power relationship between researcher and student that the researcher stressed to the student that their agreement to participate in the study was entirely optional. Additionally, they were made aware that no consequences, positive or negative, would ensue from their agreement, or refusal, to participate in the study. At this stage all of the nursing students agreed to participate, and appeared excited at the prospect of being involved in a research project, seeing this as a learning opportunity for them to experience the research process at first hand.

Following notification of which ward areas would be included in the study, the Senior Charge Nurse (SCN) of each ward was approached in person, and given a brief overview of the study. Verbal approval was given in each case. Once again, this discussion was subsequently confirmed by letter (Appendix XXVI). As is normally the practice when notified that students will shortly be placed in their ward, the SCN also identified which 'E' grade staff nurse would act as the student's preceptor in each case, thus allowing the researcher to approach them and recruit them to the study.

Again, initial contact was made with each staff nurse in person, and a brief outline of the study and what their participation would involve was given. In each case verbal consent was obtained.

For both nursing students and staff nurses this initial contact was followed up by letter. This allowed a 'cooling off' period and time for the participants to reflect on whether or not they truly wished to participate in the study (Appendix XXVII). No participant withdrew at this stage.

Although some reservations, perhaps better characterised as mild apprehension, were expressed about being the participants of a study of this kind, it was generally thought that it would be an interesting experience. In addition, a number of the staff nurses expressed a view that it might be personally and professionally beneficial to them, as it would give them an insight into research, and might provide them with a perspective on how they themselves functioned. This notion of potential benefit from study participation has been suggested by a number of other workers (Wineman & Durand, 1992; Watson, 1994).

4.4.1.2 Organisational Issues

A key aspect in the successful conduct of this phase of the study was in relation to a number of important organisational issues. It was essential to ensure that the researcher, who was to be the sole data collector, was in a position to be able to carry out the data collection in each of the study areas without causing any unnecessary disruption to the normal functioning of the clinical area. This was particularly pertinent in two respects; firstly in relation to co-ordinating off-duty rotas, and secondly, in relation to further disruption to the wards by the presence of link-teachers.

Off duty.

It was necessary to co-ordinate five sets of off-duty across four different wards (Table 4-1). This required the collection of the relevant off-duty rotas from each ward for each of the senior staff nurses. It was then necessary to identify those days in which the study would be carried out for each set of participants. This task in itself was complicated, as any individual staff nurse could be allocated to any one of seven different possible shifts.

At the time of the study the nursing students were supernumerary and were not required to work late shifts or weekends, although many students often did work a variety of hours. The reasons for this could be identified as either educational or personal. Educationally, students could enhance their learning opportunities by adopting a flexible pattern of attendance, and might also increase the likelihood that they would spend more time on-duty with their preceptor, who was of course, required to work shifts as determined by the SCN. From a personal perspective, many students preferred flexible attendance because it suited childcare or travel arrangements. Additionally, many students had part-time jobs to supplement their bursary, and again, for this reason chose to work more flexibly. However, to facilitate the organisation of the study, the nursing students had already agreed with the researcher that they would work whichever shifts their preceptor was working on the days of the study.

It was during this period that an unforeseen difficulty arose in Ward D. In this ward the senior staff nurse who had previously agreed to participate in the study had recently been successful in obtaining a new position within the Hospital and was due to leave the ward in the period that the nursing student was to be there. The Senior Charge Nurse therefore decided to allocate the student to a new preceptor. This necessitated recruiting the senior staff nurse involved in the manner described above. However, due to the lateness of her inclusion in the study she was only to be available for two days rather than the three days originally scheduled.

Wd Participant	27 Jan	28 Jan	29 Jan	30 Jan	31 Jan	1 Feb	2 Feb	3 Feb	4 Feb	5 Feb	6 Feb	7 Feb	8 Feb	9 Feb
A SN 1	O	O	O	L	L	E	L	E	L	8L	E	O	O	
								P						
A SN 2	E	E	O	O	L	L	E	L	L	E	E	8	O	O
						P						I		
B SN 3	E*	L	E*	O	O	L	E*	L	E	L	E	E	O	O
	P											I		
C SN 4	N	N	N	N	O	O	O	O	L	8	L	E	O	O
D SN 5	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Wd Participant	10 Feb	11 Feb	12 Feb	13 Feb	14 Feb	15 Feb	16 Feb	17 Feb	18 Feb	19 Feb	20 Feb	21 Feb	22 Feb	23 Feb
A SN 1	O	O	L	E	L	E	L	-	-	-	-	-	-	-
				I										
A SN 2	O	O	N	N	N	N	O	-	-	-	-	-	-	-
B SN 3	A	A	A	A	A	A	A	-	-	-	-	-	-	-
C SN 4	O	O	L	L	8	E	L	-	-	-	-	-	-	-
				P			I							
D SN 5	8	L	L	E*	O	O	L	O	L	L	E	O	L	E*
								P			I			

O	Day Off
L	2-10pm
E	7-3pm
E*	7.30 start
8	8am start
N	Night duty
A	Holidays
P	TA Practice
I	Interview
SN	Staff Nurse
Legend	

Table 4-1: Duty rotas for senior staff nurses during period of study. (Light shading indicates practice session or interview; dark shading indicates TA and observation periods).

Once the plan of the study dates and times was complete, each participant was informed of the days on which they would be participating in the study, by letter (Appendix XXVIII). A practice session for the TA was also arranged at this time.

Link Teachers.

Each clinical area has associated with it a member of School of Nursing and Midwifery staff who fulfils the role of link teacher. This role may include working with nursing students, or conducting tutorials with them when on clinical placement, as well as liaising with ward staff. It was felt that the presence of the researcher, who was a member of staff at the School of Nursing and Midwifery, as well as the designated link teacher, could prove too disruptive and place a burden on the students and ward staff. It was therefore thought prudent to notify link teachers of the dates and times the researcher would be present in the relevant clinical areas asking them to avoid the area at this time (Appendix XXIX).

4.4.2 Think-aloud Study

4.4.2.1 Aims

By combining think-aloud with planning care in actual clinical practice, the intention was to

- make explicit those goals and cognitive processes being used by the two study groups when planning care, thus permitting comparisons to be made, and
- explore any factors that the participant was taking into account in reaching these decisions.

4.4.2.2 Equipment

Three hand-held, battery operated, dictaphones were used. Two of the dictaphones were used in conjunction with lapel microphones. Staff nurse and student used these respectively. The lapel microphones were intended to make the dictaphone less obtrusive and distracting to the participant, and thus minimise the risks of obtaining an inhibited report. The third dictaphone was held by the researcher as a spare, in case of failure of either of the two main dictaphones. Spare dictaphone tapes, and batteries were also carried at all times by the researcher in case of equipment failure.

4.4.2.3 Procedure

The think-aloud component would take place at three points during each shift –

1. After report at start of shift.
2. After first break.
3. After second break.

Each period of ‘thinking aloud’ covered the planning activity for the next period of work. These times were selected, following discussion with a number of Senior Charge Nurses, as being most likely to represent the periods when the nurse is considering what needs to be done, and is making decisions about these matters.

The student and staff nurse were isolated from one another, and were asked to think-aloud independently of one another. By restricting the think-aloud component to these times it would achieve the objective of gaining insight into the planning of care and setting of priorities. However, it would avoid any potential problems of thinking aloud whilst providing direct patient care, including problems of confidentiality, i.e., thinking aloud about other patients whilst providing care for one. Additionally, it would be technically difficult to have both student and staff nurse thinking aloud at the same time. It also avoided any possible influence that one participant might have had on the other; a principal concern being that the priority setting of the staff nurse might influence the priority setting of the student, the so-called ‘halo’ effect.

Prior to conducting the main study it is recommended that participants be given the opportunity to practice thinking aloud. This familiarises the participant with the concept of thinking aloud and introduces them to any equipment that may be used. As each participant was contacted regarding the days in which they would be involved in the study, they were also advised that the researcher would meet with them to conduct a practice TA session. To this end simple puzzles that were unrelated to the main TA activity were used (Appendix XVIII).

4.4.3 Observation Study

4.4.3.1 Aims of Observation Study

Observation was undertaken in order to provide a detailed examination of the participants as they engaged in the work of staff nurse or student nurse. Close

observation, using an activity schedule designed for this purpose, would enable a comparison to be made between planned and actual activities. Observation would also permit a study of those factors in practice, which might impinge upon the priority setting process, and facilitate or impede the implementation of such plans. These factors could be compared with the factors elicited during the simulation studies earlier in the study. Lastly, by the use of observation, a contextual element can be added to the data regarding priority setting that may not be present in simulation studies. Thus the use of observation method would complement the think-aloud reporting, and provide a wider view of the priority setting process.

4.4.3.2 Development of Activity Schedule

Unlike a simulation or laboratory setting, where the researcher can ask the participant to repeat an activity, studying clinical practice in situ requires that the researcher must ensure, as far as is possible, that no observations are lost. The nature of clinical practice is dynamic and unpredictable, and therefore, the researcher must develop a protocol for recording the reality of that practice. It would not be possible to stop a practitioner and ask them to repeat a particular part of the observation period. In the real world of practice, in the 'swampy lowlands' (Schon, 1988) once a moment has passed then it is lost.

It was important therefore, to develop an activity schedule that would record those events, and other information pertinent to those events, which would allow the researcher to answer the research questions. It may be that one does not subsequently use all of the data gathered during the observation period, however, it is better to have gathered it and not use it, than to not gather it and discover that you need it later.

The activity schedule (Appendix XXX) was developed from data gathered during earlier work and the researcher's own clinical experience. In particular, during earlier phases of the study, participants had indicated that interruptions had a significant impact on their ability to carry out their plan of care. During the clinical phase of the study, therefore, it was hoped to determine the extent to which interruptions to the implementation of the intended plan of care actually occurred. The activity schedule was piloted in a ward that did not participate in the main study. This demonstrated the appropriateness of the schedule and gave the researcher the chance to practice the necessary skills required when using observation method. No amendments were required.

To recap, the purpose of using observation in the clinical phase of the study was to explore the extent to which senior staff nurses and junior students adopted a planned approach to their work. It would also enable the researcher to examine the extent to which the factors that act as barriers to, or facilitators of priority setting, as elicited in simulation methodologies, are apparent in the 'real world.' Lastly, observation would expose the context in which such priority setting behaviour occurs.

4.4.3.3 Procedure

Following each period of think-aloud reporting, observations were commenced, alternating between participants; the decision whether to commence with staff nurse or student being decided randomly by the tossing of a coin, except on those occasions where only one participant was available. Each period of observation lasted approximately thirty minutes. At the end of each period of observation a five-minute rest break was taken to help reduce the effects of observer fatigue. This also had the added benefit of permitting those being observed a similar period of respite. Observations were not continued during patients' meal breaks for the reason indicated in section 4.8.2.2. In order to determine the extent of coding stability over the data collection period, a colleague of the researcher undertook to randomly co-code observed activities on a number of occasions throughout the research period. This yielded an 87% inter-rater agreement from a sample of 7.2% of the total number of activities observed.

4.4.3.4 Field Notes

Field notes were kept throughout the period of the study. They were recorded contemporaneously on the activity schedule recording sheet for subsequent analysis. The keeping of notes during the clinical phase of the study would permit the identification of any aspects of the clinical environment that might impinge upon the activity of planning and priority setting. Keeping notes would also allow the researcher to record any thoughts related to the research *per se*, i.e., analysis, unanticipated difficulties, further questions, meaning of findings, and so on.

4.4.4 Post-study Interview

In order to explore further, issues raised during the think-aloud reporting and the observation period, a semi-structured interview was scheduled for each set of participants. The schedule used for the interview was essentially that which was used in the previous phase of the study and described in chapter three, however some additional areas were explored in relation to the clinical aspect of the study and the methods used

(Appendix XXXI). These questions related to the skill of priority setting, principally the development and importance of this skill in practice. The interview took place at the end of the final period of observation. In this way the discussion would be focussed on matters that were still fresh in the respondents mind. It was decided to interview both participants of each set together in a joint interview. The reasons for this were two-fold. Firstly, it was anticipated that this format would enable the generation of a richer and more varied data set, as participants exposed in the interview their own particular perspective on the nature of planning and priority setting. It was anticipated that this might trigger lines of thought in their co-respondent that might otherwise have remained hidden. Secondly, the researcher felt that such a joint interview could be a valuable learning activity for both senior staff nurse and learner nurse. By listening to one another they would be encouraged to reflect upon the planning and rationale of caring for several patients simultaneously, and in so doing could uncover important insights which might lead to improvements in their own priority setting and in their teaching and learning about this key nursing skill.

4.5 *Study participants*

4.5.1 Population

As in previous phases of the study, the clinical phase sought to compare trained nurses with learner nurses. In order to increase the contrast between these groups, it was decided to compare 'E' grade senior staff nurses with term two student nurses, that is, the study would not include 'D' grade junior staff nurses or term six student nurses as previously. Again, as in earlier phases of the study, the sample would be drawn from those senior staff nurses working full-time day duty in general medical wards (N=6) in a large teaching hospital in the north-east of Scotland. The sample of nursing students would be drawn from a cohort of students undertaking a pre-registration Diploma in Higher Education (Nursing) at a local School of Nursing and Midwifery, and who were on their Care of Adult clinical placement in term two of their programme.

4.5.2 Sample

The sample of nursing students (N=5) was a purposive, convenience sample, in that all the term two student nurses who had been allocated to this particular clinical experience at this specific time were to be included in the study. This clinical placement would be their second experience on an adult ward, the previous one being four weeks long.

Due to the numbers of students to be included in the study and the way in which they had been allocated to wards by the Allocation Department of the School of Nursing and Midwifery, two students were allocated to the same ward. As a consequence, the number of wards involved in the study was reduced by one (N=4).

The sample of senior staff nurses (N=5) was a purposive sample in which suitable staff nurses who met the criteria described in the above section were identified through discussion with the Senior Charge Nurses in the relative medical wards. Additionally, they had to have completed a preceptorship-training course in order that they would be available to supervise the nursing student participating in the study, who would be assigned to them by the SCN.

4.5.3 Characteristics of Sample

The following table provides a summary of the characteristics of the senior staff nurses in this phase of the study.

	<i>Median</i>	<i>Range</i>
Age (years)	26	25-28
Time at 'E' grade (months)	21	6-72
Time in current ward (months)	17	9-30
Time since first qualification (months)	53	36-108

Table 4-2: Summary of age, and length of time in relevant positions, of senior staff nurses.

As can be seen, the staff nurses in this study were relatively young with an age range of between 25 and 28 years. They had all been qualified for a minimum of 3 years, and had been functioning at 'E' grade level for at least six months.

All staff nurses held the professional nursing qualification Registered General Nurse, and in addition two held the academic award of BSc (Hons) Nursing.

A summary of the nursing students can be seen in table 4-3.

	<i>Median Range</i>	
Age (years)	23	19-27
Previous caring experience (months) *	6	0-48

*Two of the students had no previous caring experience.

Table 4-3: Summary of age and any previous ‘caring experience’ prior to commencing nurse training.

The nursing students were slightly younger than the staff nurses, with ages ranging from 19 to 27 years. Three of the five students also had some unqualified caring experience prior to commencement of their nurse training.

4.6 Characteristics of Study Environment

The study hospital is a teaching hospital located in the North East of Scotland and serves an area of 3,000 square miles with a population of approximately 350, 000. The ward design was the so-called ‘race track’ design comprising of 3 x 6 bedded bays and 6 single side-rooms (with the exception of Ward A which had been converted to provide an additional 6 bedded bay). The wards used in the study were all general medical wards, although wards would have some minor specialisation according to the particular interests of the medical consultants. Wards were single sex, although it was not uncommon for some patients of the opposite sex to be present, either in single side-rooms or occupying a complete bay. It should be noted that wards did not have toilet and washing facilities for patients of both sexes. This would mean therefore, that the presence of patients of the sex opposite to the ward’s nominal designation would give the nursing staff additional problems in planning and implementing their care (see Table 4-4).

<i>Ward</i>	<i>No. of beds</i>	<i>Nominal Sex of ward</i>
A	30	Male
B	24	Male
C	24	Female
D	24	Male

Table 4-4: Size and nominal sex of wards used in study.

During the study, a number of characteristics pertaining to the clinical environment were noted each session. These included bed occupancy rate, number of patients allocated to participants, number of staff on duty, patient dependency scores (where kept), and

patients' admitting diagnoses (see Tables 4-5 to 4-7). In addition to permanent staff comprising trained nurses and untrained staff, wards would also have an allocation of students who would be either rostered, or supernumerary. Rostered students were in the final six months of their training, and were regarded as being part of the ward complement, that is, they are part of the ward work force as well as continuing to be students. Supernumerary students, in contrast, were not taken into account in any staffing calculations.

Ward	Day	Bed occupancy rate (%) *	Number of allocated patients	Number of staff on duty		
				Trained	Untrained	Rostered students
A	1	83 → 70	6	4	0	0
	2	90 → 100	6	7	1	0
	3	76 → 83	5	4	1	0
A	1	97 → 93	5	4	2	0
	2	100	10	3	0	1
	3	87 → 93	7	3	1	1
B	1	100	5	5	2	1
	2	100	5	5	2	1
	3	100	5	5	0	1
C	1	96 → 100	5	5	2	0
	2	100	9	3	1	0
	3	100 → 104**	7	3	1	0
D	1	100	5	3	0	1
	2	100 → 96	9	3	3	0

*Where two figures are presented this represents the bed occupancy at the beginning and end of each observation period.

**At the end of the observation period there were 25 beds present in a 24 bedded ward.

Table 4-5: Key ward data for each ward during each day of study.

Clinical area		Dependency score	
Ward	Day	Median	Range
B	1	2	1-3
	2	1	1-3
	3	2	1-2
D	1	1	1-3
	2	3	1-4

Table 4-6: Patient Dependency scores (where kept). The minimum dependency score possible is 1, the maximum 4.

The admitting medical diagnosis of each patient was also noted. There were forty-one discrete diagnoses reported by the participants (Appendix XXXII), the most frequent being Chest Pain and Cerebro-Vascular Accident. Table 4-7 shows the number of different diagnoses that each set of participants had to care for over the period of the study.

	<i>Day</i>	<i>No. of diagnostic categories</i>	<i>No. of allocated patients</i>
A	1	9*	6
	2	7	6
	3	5	5
	1	5	5
	2	10**	10
	3	9	7
B	1	5	5
	2	6	5
	3	5	5
C	1	5	5
	2	10	9
	3	7**	7
D	1	7	5
	2	10	9

Table 4-7: Number of diagnostic categories and allocated patients per day.

*The number of diagnostic categories may exceed the number of allocated patients because some patients were recorded as having more than one diagnosis.

**In these instances not all of the patients' diagnoses were known to the researcher

From this data a sense of the context in which the study was taking place can be gained

4.7 Analysis

In this section details of the analytical approaches used for each of the different methods used are given.

4.7.1 Think-aloud Study

The tape-recorded reports that were produced from the TA activity were transcribed verbatim, using a Philips 555 Transcription System. The researcher completed all

transcription. This ensured consistency of approach, and perhaps more usefully, allowed the researcher to become immersed in the data in a manner that cannot be achieved if someone else does the transcription. In the previous chapter the verbal protocols were analysed using thematic content analysis. This qualitative approach was adopted in order to identify the participants' underlying cognitions and those influencing factors that might impinge on their decision-making. In chapter four the resulting verbal protocols were analysed using two approaches. The first approach used a thematic content analysis as in chapter three, adapted from Burnard (1991). This permitted comparisons to be made with the findings from the simulated exercise. A further analysis of the verbal protocols was then undertaken using a technique similar to that described by Green & Gilhooly (1996). This required the development of a coding schedule (Appendix XXXIII), which was derived from the earlier thematic content analysis. This latter approach to analysing the TA data yielded a quantitative perspective on the think-aloud reports, thus allowing comparison between senior staff nurses and junior students.

4.7.2 Observation study

4.7.2.1 Activity Schedule

The data from the activity schedule were entered into SPSS version 9.00 for Windows for subsequent analysis.

4.7.2.2 Field Notes

The field notes gathered during the study were sorted into two categories; those notes pertaining to the observational activity itself, and notes related to wider research issues. The notes were then summarised and reported on.

4.7.3 Post-study Interview

The interview was carried out jointly, as planned, in four of the five participant sets. In the final participant set staff nurse and student were interviewed separately due to the staff nurse being called away to a ward meeting. Each interview was conducted on the final day of observation, in a quiet room in the clinical area that was normally set aside for interviewing relatives or patients. With the participants' permission, the interview was tape-recorded, using a dictaphone, for subsequent analysis. As per the TA reports the interviews were transcribed verbatim and were analysed using an approach adapted from Burnard (1991). The analysis of interview data was more fully treated in chapter

three. This approach to analysis permitted a thematic content analysis of the data thus enabling the exposition of common and unusual findings from the data.

4.8 Result

4.8.1 Think-aloud Study

The TA aspect of the study yielded data that were naturally organised into discrete reports of varying length (see Table 4-8). If all participants had been available, for all three sessions, as originally planned, then the maximum number of verbal protocols generated by the TA reporting would have been 90 individual reports. However, it will be recalled from section 4.4.1.2 that due to unforeseen circumstances the participants in Ward D were only to be available for two rather than three days. This reduced the actual maximum number of reports possible to 84. In the event the actual number of TA reports generated was 68, due to sickness and other reasons, achieving a reporting rate of 81% of all possible reports (85.7% for senior staff nurses and 76.2% for nursing students). An example of one participant's TA report is given in appendix XXXIV.

<i>TA report</i>	<i>SN 1</i>	<i>SN 2</i>	<i>SN 3</i>	<i>SN 4</i>	<i>SN 5</i>
1	190	162	261	215	234
2	96	51	145	144	280
3	110	155	146	114	276
1	155	103	265	111	237
2	136	86	145	141	*
3	26	79	164	*	*
1	136	75	210	*	**
2	79	81	171	*	**
3	114	126	112	*	**
	St 1	St 2	St 3	St 4	St 5
1	88	777	478	151	226
2	121	140	164	106	134
3	83	106	140	99	179
1	213	522	256	103	**
2	63	104	144	82	**
3	63	96	159	247	**
1	110	*	*	257	**
2	86	*	*	181	**
3	75	*	*	*	**

*Absent due to sickness

** Not available for other reasons

Table 4-8: Length of each TA report (in words)

Although students TA reports were generally longer than those of staff nurses (see Table 4-9) there was no significant difference in the number of words used in their reporting during the TA activity between staff nurses and nursing students (Mann-Whitney, $U=562.5$, $p=0.868$).

	<i>N</i>	<i>Median</i>	<i>Range</i>
Staff nurses	36	142.5	26-280
Nursing students	32	137	63-777

Table 4-9: Summary statistics for number of words in TA reports

Adopting the approaches as indicated in Section 4.7.1 above, initial content analysis of the verbal protocols yielded a number of categories. These were grouped under three main headings and are found in table 4-10.

<i>Cognitive processes</i>	<i>Planning goals</i>	<i>Influencing factors</i>
Prioritising (AP)	Administer drugs (DA)	Barriers/facilitators (BF)
Considering options (CO)	Administration (Am)	Dependency (Dy)
Deciding (DN)	Assessment (A)	Knowing patient (KP)
Describing (DB)	Communication (Cm)	Personal characteristics of patient (PC)
Reviewing (RW)	Direct care (DC)	Severity of illness (ILL)
Justifying (JY)	Managing work (MW)	Time-related (TR)
	Supervision (S)	

Table 4-10: Categories obtained from content analysis of TA reports.

Each category was defined to guide the coder in the next phase of analysing the verbal protocols (Appendix XXXIII). Following segmentation of the TA transcripts, a random sample of transcripts was selected and a segmentation reliability calculation was undertaken as indicated by Gilhooly et al. (1988) and Green & Gilhooly (1996). This requires two reviewers to independently segment the transcripts after which the level of agreement between the two is calculated. At the first attempt, this achieved an intercoder agreement of 81%. As Green and Gilhooly suggest an agreement of at least 85%, the transcripts were reviewed to identify points of divergence between the two coders. This involved both reviewers meeting with their segmented transcripts and identifying those segments where they disagreed. An open and frank discussion regarding the segmentation took place, and both reviewers made some revisions. Subsequently, a

further random sample of transcripts was selected and the reliability calculation repeated. The intercoder agreement rose to 87% and therefore the segmentation was judged to be valid.

Following segmentation, the transcripts were then reviewed and each segment coded using the coding schedule described earlier. An example of this is given in tables 4-11 and 4-12.

<i>Segment</i>	<i>Code</i>
I'll have to go and check that there's Iloprost made up for B and then I'll have to go round my patients to make sure that they're all okay... before getting the drugs organised	Managing work, Deciding Assigning priority, Deciding Assessment, Justifying Assigning priority, Managing Work

Table 4-11: Example of coding of TA segments

<i>Segment</i>	<i>Code</i>
I've got five patients today one high dependency one medium dependency and the other three low dependency one definite going home, one query going home... the priority first of all is to... get the drugs with KT	Describing Describing, Dependency Describing, Dependency Describing, Dependency Describing Assigning priority Deciding, Drug administration Deciding, Supervision

Table 4-12: Further example of coding of TA segments

The following tables (4-13 to 4-15), indicate the percentage of segments from each participant's verbal protocols that referred to the stated category for each participant. The mean for each of the two groups, i.e., senior staff nurses and nursing students is given in bold.

<i>Cognitive Processes</i>						
<i>Participant</i>	AP	CO	DN	DB	RW	JY
SN 1	6.3	2.5	24	16	4.4	3.1
SN 2	10	3.8	17	26	1.3	3.2
SN 3	17	4.3	22	12	5.8	6.3
SN 4	5.6	0	21	20	6.3	1.4
SN 5	6.1	1.8	11	18	1.8	3.1
St 1	2.5	2.5	16	34	5.6	4.3
St 2	1	1.7	8.3	51	5.9	1.4
St 3	8	5.2	6.6	23	11	2.1
St 4	1.8	1.1	9.6	31	7.8	4.6
St 5	0	9.4	3.1	42	3.1	3.1

SN	Staff nurse
St	Student nurse
AP	Assigning priority
CO	Considering options
DN	Deciding
DB	Describing
RW	Reviewing work
JY	Justifying actions

Legend

Table 4-13: Percentage of segments that made reference to each category related to cognitive processes as reported by each participant in their TA reports.

In respect of the cognitive processes apparent during the TA activity, it should be noted first of all that the senior staff nurses make more explicit reference to priority setting than the students. There is also more evidence in the VP's of decision-making by the trained nurses. There appears to be little difference in the number of justifications contained within the VP's of either learner or trained nurses. One aspect of interest is the number of segments within the verbal protocols of the learners that were essentially descriptive.

<i>Planning goals</i>							
<i>Participant</i>	DA	Am	A	Cm	DC	MW	S
SN 1	5.7	6.9	9.4	11	5	6.9	5.7
SN 2	1.9	6.4	12	2.6	5.8	1.9	0
SN 3	9.7	5.8	8.2	8.2	3.9	11	12
SN 4	6.3	5.6	7.7	2.1	6.3	4.9	2.1
SN 5	1.8	5.5	12	4.9	4.3	9.2	3.7
St 1	2.5	5.6	12	1.2	5	0.6	2.5
St 2	0	0	9.7	3.5	4.5	0	0
St 3	2.1	1.4	8.7	0.7	6.3	0	3.1
St 4	1.4	4.3	13	0.7	3.5	0.7	0
St 5	0	3.1	4.2	2.1	3.1	0	1

SN	Staff nurse
St	Student nurse
DA	Drug administration
Am	Administration
A	Assessment
Cm	Communication
DC	Direct care
MW	Managing work
S	Supervision

Legend

Table 4-14: Percentage of segments that made reference to each category related to planning goals as reported by each participant in their TA.

Table 4-14 deals with the object of the planning activity, that is, the planning goals. It can be seen that within their TA reports the senior staff nurses make greater reference to the goals of drug administration, general administrative tasks, communication, and managing work. Additionally, both learner and trained nurses refer more or less equally to goals related to assessment and direct care.

Participant	<i>Influencing factors</i>						
	BF	Dy	KP	PC	ILL	TR	M
SN 1	1.9	0	0.6	0	1.3	6.9	3.1
SN 2	0.6	0.6	0	0	0.6	7.7	3.8
SN 3	8.7	1.4	1.9	0	0	7.7	1
SN 4	1.4	2.8	0	0	0	9.9	2.8
SN 5	3.1	3.1	0	0	0	6.1	2.5
St 1	1.2	0.6	0	1.2	0.6	2.5	1.9
St 2	1.4	1.7	1.7	3.1	1.4	0.7	6.9
St 3	0.7	1.4	0.7	0.3	0	3.5	2.4
St 4	1.1	1.1	0.7	0	0	1.8	7.4
St 5	1	4.2	5.2	1	0	2.1	4.2

SN	Staff nurse
St	Student nurse
BF	Barriers, facilitators
Dy	Dependency
KP	Knowing patient
PC	Personal characteristics of patient
ILL	Severity of illness
TR	Time related
M	Miscellaneous

Legend

Table 4-15: Percentage of segments that made reference to each category related to influencing factors as reported by each participant in their TA.

Table 4-15 demonstrates those factors in the TA reports that appeared to be taken into account by the participants in devising the plan of care for their case-load. It should be noted that the senior staff nurses appeared to be more aware of time related issues, such as knowing the time an investigation was due to take place, and they were also sensitive to issues that might facilitate or interfere with their plan. Although not involving a large proportion of the segments overall, it is nonetheless interesting to note that the students in their reports made reference to knowing patients and their personal characteristics.

Differences in the verbal protocols of senior staff nurses and nursing students were analysed using a Mann-Whitney U test (two-tailed). The complete results are given in appendix XXXV, and the key findings are indicated below.

	<i>U</i>	<i>p</i> ≤
<i>Cognitive processes</i>		
Deciding	1	0.016
Describing	1	0.016
<i>Planning goals</i>		
Administration	1.5	0.016
Communication	2.5	0.032
Managing work	0	0.008
<i>Influencing factors</i>		
Personal characteristics of patients	2.5	0.032
Time related	0	0.008

Table 4-16: Mann-Whitney U test (two-tailed) comparing verbal protocols of senior staff nurses and nursing students.

4.8.2 Observation Study

4.8.2.1 Activity Schedule

This section reports the key results obtained from observation of senior staff nurses and student nurses as they attempted to implement their plan of care. Work undertaken in earlier phases of the study had suggested that interruptions had a significant impact on the management of patient care, and therefore, data were sought during the clinical phase of the study in respect of the frequency of these events. Interruptions in this context are events that break the flow of a previously planned aspect of work. They can be relatively minor, such as stopping to give directions to a lost visitor, or major such as going to the assistance of a patient about to fall. They can be of short duration, or may be quite lengthy. Figure 4-3 demonstrates the extent of interruptions to the flow of work for all nursing students and should be compared with that for the senior staff nurses. It can be seen that senior staff nurses experience more interruptions to their work pattern. This difference is significant ($\chi^2=55.75$, $df=1$, $p<0.001$).

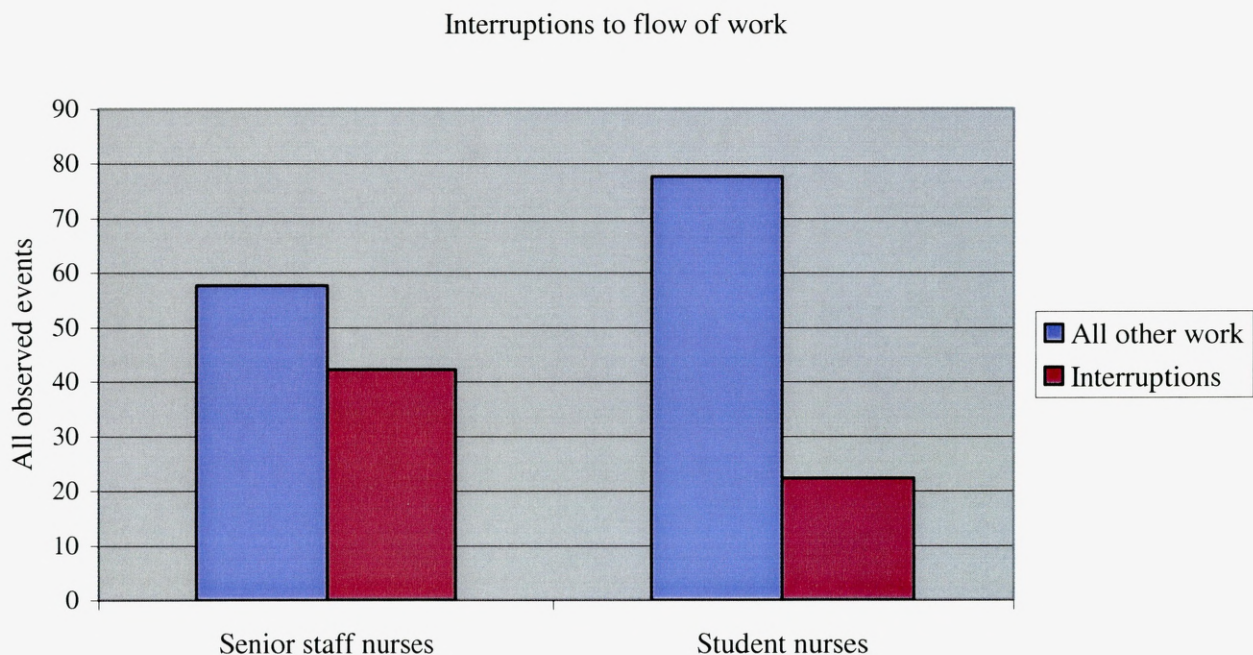


Figure 4-3: Interruptions to work of student and trained nurses as a proportion of all observed events.

The following table illustrates that although senior staff nurses had to deal with a greater number of overall interruptions to their plan of work, the median length of such interruptions is very similar for both senior staff nurse and student nurse.

	<i>Number of observed episodes</i>	<i>Median</i>	<i>Range</i>
Senior Staff nurses	337	22	3-510
Student nurses	110	23	3-175

Table 4-17: Time taken for category labeled ‘Interruptions’ expressed in seconds.

When comparing the work of student and trained nurses it might be supposed that learner nurses would have less control over their own work pattern with their activity being principally directed by supervisors or even by demands made by patients, i.e., they would adopt an essentially reactive rather than proactive style of working. Figures 4-4 and 4-5 illustrate the source of demands in respect of who initiated the observed behaviour or event.

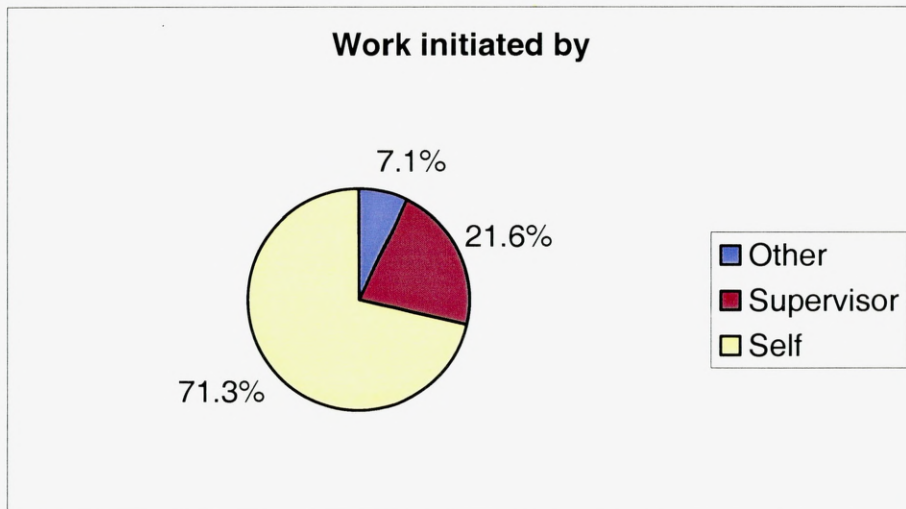


Figure 4-4: Source of demands – indication of person responsible for initiating observed event for student nurses.

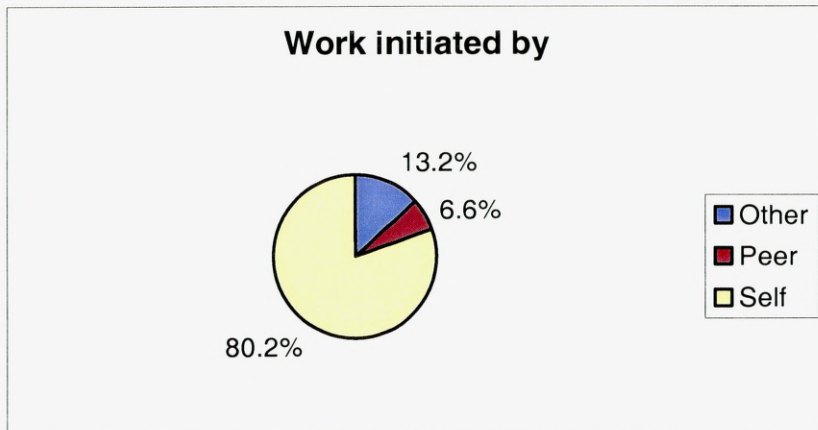


Figure 4-5: Source of demands – indication of person responsible for initiating observed event for senior staff nurses.

The data support the general assumption that senior staff nurses are more autonomous and self-directed, however, it is interesting to note that nursing students in this study were self-directed to a high degree. In addition, it is useful to expand the ‘other’ category and determine who else was making demands upon the participants. Although for student nurses, most work is initiated either by themselves, or their supervisors, it is interesting to note that demands made by patients other than their own forms the single largest component of the ‘other’ category (Table 4-18). This contrasts with the findings in the senior staff nurse data that show a much smaller number of demands initiated by ‘other patients.’ This finding is not inconsistent with the view that student nurses are tending to react more to external demands placed upon them, rather than taking control and determining their own response to the situation that they find themselves in.

<i>Event initiated by</i>	<i>Student nurses (%)</i>	<i>Trained nurses (%)</i>
Self	71.4	80.2
Manager/Supervisor	21.6	1.2
Peer	0.4	6.6
Own patient	0.6	0.6
Other patient	3.7	1.4
Relatives	0.2	1.8
Doctor	0.6	2.0
Auxiliary nurse	0.8	0.4
Paramedic	0.0	0.5
Other	0.6	2.5

Table 4-18: Comparison of who initiated observed events for student and trained nurses.

Table 4-19 shows the time data for observations made using the activity schedule. It can be seen that student nurses generally took longer per observed event with a median of 43.5 seconds. A Mann-Whitney U test (two-tailed) shows a significant difference in the length of time taken to complete activities between the two groups ($U=178652.5$, $p \leq 0.009$).

	<i>Observations Median Range</i>		
	<i>(N)</i>		
Senior staff nurses	795	39	3-903
Student nurses	492	43.5	3-1230

Table 4-19: Time taken (in seconds) by student and trained nurses per observed episode (Mann-Whitney U test (two-tailed) $U=178625.5$, $p \leq 0.009$).

Figures 4-6 and 4-7 show graphically the time taken (in seconds) by students and staff nurses for each discrete event observed. It is interesting to note that both students and staff nurses appear to engage in a high frequency of brief encounters with patients.

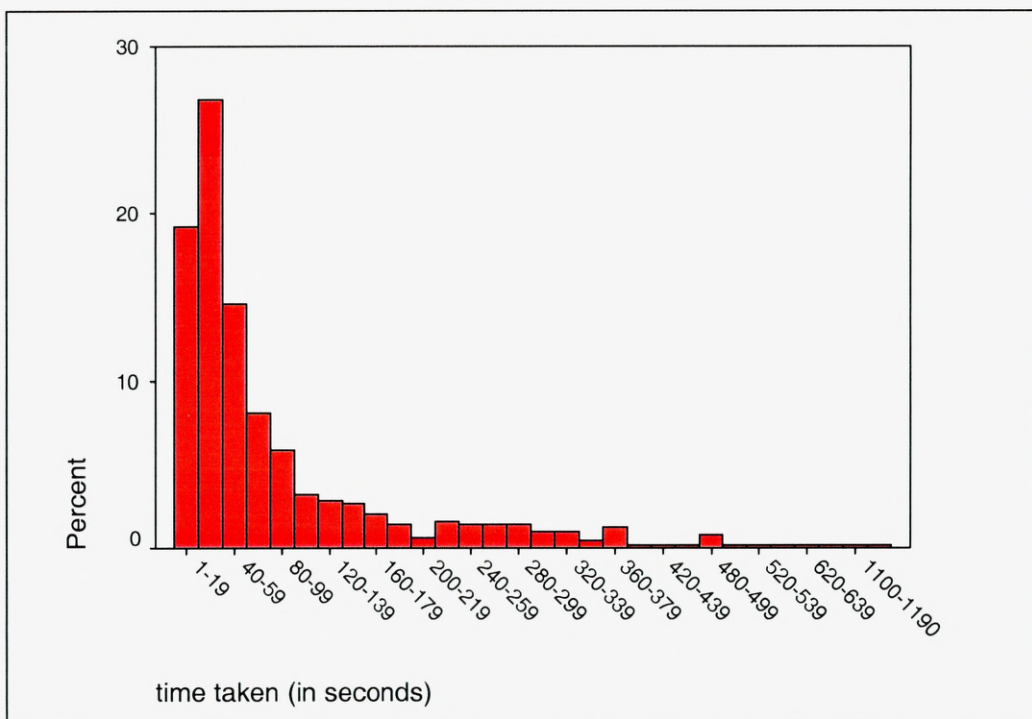


Figure 4-6: Time taken (in seconds) by student nurses per observed event.

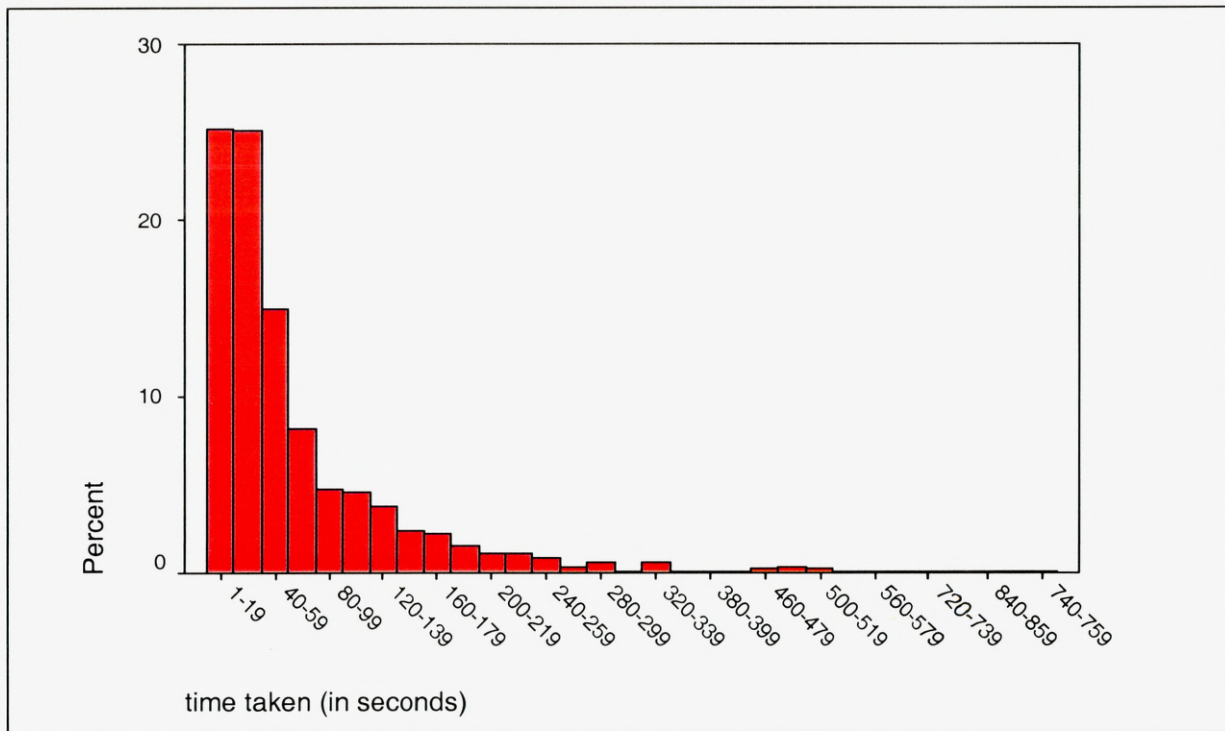


Figure 4-7: Time taken (in seconds) by staff nurses per observed event.

4.8.2.2 Field Notes

Contemporaneous field notes gathered during the period of observation fell into two main categories; firstly, notes relating to the observations being undertaken, and secondly, notes relating to wider research issues which occurred to the researcher during the period of observation.

In the first category the field notes recorded observations of two types, namely observations that could be regarded as predictable, and those that were unpredictable.

Those events that could be regarded as predictable allow the researcher to consider them in advance, and to plan, or try out strategies for managing them. For example, during the period of observation the researcher was subject to repeated interruptions. Initially, these interruptions were from individuals who recognised that the researcher was not normally present in their environment, and who wished to know what the researcher was doing. As the researcher's presence in the research area became more familiar to those who were regularly present in the area, this form of interruption decreased. However, the researcher had to develop strategies for minimising the impact of such interruptions. If a member of staff asked what the researcher was doing then a brief verbal explanation was given, *'I am looking at the way in which staff nurses and students organise their work.'*

In response to a similar enquiry from a patient, the researcher had prepared a patient information sheet that could be given to the patient with little interruption to the period of observation (Appendix XXXVI). A useful strategy for preventing interruptions or for breaking them off when they occurred was to avert eye contact, thus reducing the likelihood of interaction.

A different form of interruption occurred from visitors to the area, and patients who thought that the researcher was a member of the ward staff. If the researcher could respond to the enquiry quickly, such as a visitor asking for directions, then he would do so. However, if the response was likely to require a more sustained response then the visitor or patient was referred to a member of staff.

A last form of interruption resulted from familiarity, that is, as the researcher's presence in the clinical area became more familiar to the nursing staff, they were more likely to engage the researcher in general conversation. This was particularly problematic around the area of the nurses' station where one was more likely to encounter nurses other than the participant being observed. Again, the researcher had to try and minimise these interruptions that could be relatively lengthy. This could be done by standing as far from the nurses' station as clear observation permitted; by avoiding eye contact wherever possible; and by pleasantly, but surely not encouraging any interactions that did occur.

Another example of a predictable event that the researcher could prepare for in advance was that of 'poor practice.' When observing professionals in practice it is likely that one will observe instances of practice that can be described as 'poor' or 'sub-standard.' This presents the researcher with a dilemma, namely, whether to ignore the incident of sub-standard practice, or to intervene and correct it. As a nurse, as well as the person conducting the research, the researcher in this instance has certain professional obligations, which include maintaining standards. However, this must be weighed against the potentially detrimental effect on the research if one interrupts the normal behaviour of the participant. Some examples will illustrate this point. On one occasion a student was seen carrying a large bundle of dirty linen through the ward, the correct practice being to use a linen 'buggy' for this purpose. Carrying linen through the ward in this manner carries with it the risk of contamination and spread of infection, which is, of course, potentially harmful to patients. On another occasion a staff nurse, having dispensed a patient's medication, asked a student to administer the medicine to the patient unaccompanied. This is contrary to current drug administration guidelines, and carries with it a risk of drug error, that is the patient being given the wrong drug or the

correct drug but at an incorrect dose or time. Finally, a student was noted to measure a patient's blood pressure using a poor technique. In doing so, the student risks recording an inaccurate blood pressure.

As a qualified nurse, with considerable experience, the researcher would normally be expected to correct these instances of poor practice, however, to intervene may have detrimental effects on the conduct of the research. In such situations it has been the practice of many researchers not to 'spoil' the research by such intervention, unless not to do so would place the patient at significant risk. This was the approach adopted by the researcher in the course of the study. In itself, however, it raises a further question of what constitutes 'significant' risk. The researcher would also wish to acknowledge that whilst there were examples of poor practice, these were never so severe as to compel the researcher to intervene, and indeed the researcher witnessed many examples of good practice.

The second category of observations were those that could be regarded as unpredictable in nature. The importance of these is that they could not be taken into account in the planning of either the participants or the observer. For example, on one occasion the fire alarm went off delaying the lunch break of the participants, such that the subsequent period of observation could not take place as planned. This meant adjusting the observation schedule accordingly. And on another occasion, the Senior Charge Nurse called in sick, leaving the participant as the senior nurse on duty. Field notes also provide the researcher with a record of the context in which the observations took place; something, which an activity schedule on its own, would fail to capture.

What follows is a summary of the main observations from the field notes.

Observation period	Participants: SN1/St1
1	Researcher sat in on ward hand-over, and joined staff on 'walk-around' report. SN1 was team leader and allocated patients to team members. Very confused patient in ward, continuously pulling at urinary catheter, nasogastric feeding tube and IV lines. Repeatedly throwing off covers (patient had no clothes on). A second confused patient repeatedly asked staff where his bed was. One patient discharged himself AMA (against medical advice).
2	SN1 informs researcher that the previous evening had been very busy with thirteen admissions and one death. Three admissions are due that morning. SN1 comments – 'I don't know what I'm going to do – just wait for disasters to happen.' Occasionally other staff members ask researcher questions, e.g., 'Have you seen Staff Nurse Bloggs?' SN1 engaged in prolonged search for missing case notes. Researcher noted potential conflict regarding student participants in respect of roles as researcher and educator.
3	Additional patient allocated to participants in course of observation period. Clinical staff appears comfortable with researcher's presence. Many off-the-cuff comments and asides. Researcher beginning to experience some physical discomfort as a result of prolonged periods of standing.

Table 4-20: Field notes associated with observation of participants SN1/St1.

Observation period	Participants: SN2/St2
1	St2 is off sick. During shift a patient becomes critically ill and is transferred to Coronary Care. SN2 asked researcher if during think-aloud she should only refer to her own case-load or should include her ward work – advised to include all that she felt was relevant to her planning. SN2 stated that she didn't plan very far ahead.
2	St2's first day working with SN2.
3	Senior Charge Nurse is off sick. SN2 is senior nurse on duty. SN2 reviews care plans with St2. At one point St2 is working with another student, giving care to a very dependent patient.

Table 4-21: Field notes associated with observation of participants SN2/St2.

Observation period	Participants: SN3/St3
1	St3's second day in ward, and first working with SN3. Occurrence of poor practice. Researcher returned to ward after lunch to resume observations, however, participants were only just about to take lunch break.
2	St3 off sick. A second student (not part of the study) was also off sick. SN3 appeared to attend to most dependent patient first. Researcher returned to ward after lunch to resume observations, however, participant was only just about to take lunch break. On return to ward SN3 expressed nervousness about think-aloud. When another staff nurse left the ward for an errand the researcher was counted in the number of nurses left on the ward (<i>presumably for safety reasons</i>)
3	Early in shift a work colleague of the researcher entered the ward on a personal matter. The researcher responded to this by withdrawing temporarily to a distance. During the period of observation the researcher became aware that the previous evening the staff had to 'board' out four patients in order to receive new admissions. In the course of this observation period there were a further two admission.

Table 4-22: Field notes associated with observation of participants SN3/St3.

Observation period	Participants: SN4/ St4
1	<p>Medical examinations due to take place in ward later in day. SN4 on ward round. In aside to auxiliary, SN4 comments – ‘Computer care planning – I haven’t mastered that yet.’ There is a new system being introduced into ward. Researcher returned to ward after lunch to resume observations, however, participants were only just about to take lunch break due to a fire alarm</p>
2	<p>SN4 is off sick. Only two ‘D’ grade staff nurses and St4 have arrived for duty. St4 offers to ‘muck in.’ Admissions ward calls (07.10 hrs) with a request to transfer patients. This precipitates a search for patients suitable for boarding. It is a ‘post-admitting’ day and there are already 15 boarders. Additionally there were four new admissions during the previous evening. Staff nurse comments ‘The new admissions (<i>from previous evening</i>) haven’t been admitted yet – the computer’s gone right out the window – it’s a complete joke.’ Staff nurse is calling other wards looking for help – an auxiliary is sent along. Two admissions arrive on ward, however the ward is only prepared for one. Currently there are twenty-five patients in a twenty-four bedded ward. A patient in a side-room has severe chest pain and a doctor is called to see them. Ward staff are trying to board three patients. 08.00 hrs – ‘E’ grade staff nurse arrives on duty. 08.55 hrs – St4 has spent most of early part of shift working with auxiliary or looking for things to do that she can manage on her own. One of two patients who arrived earlier is transferred out to a surgical ward. A duty-manager arrives to offer support.</p> <p>It is 09.05 hrs before St4 and a staff nurse can discuss the patients that they will be caring for on this shift. St4 is sent on escort duty to X-ray (<i>this is only meant to happen for good educational reasons</i>). Staff nurse comments – ‘We are having to use her as a pair of hands.’ Staff nurse comments on the fact that no patient dependency scores are kept and that this might lead to an imbalance in the distribution of patients.</p> <p>St4 appears to have a very good relationship with patients.</p>
3	<p>SN4 asks St4 if there is anything she particularly wants to do or see, and is offered the opportunity to go with a patient having an investigation. SN4 has to leave ward briefly to obtain controlled drugs from adjacent ward. SN4 leaves ward to collect patient from X-ray (<i>this is because patient has had sedation</i>). Relative to researcher, laughing, ‘I hope you’re not writing about me.’</p>

Table 4-23: Field notes associated with observation of participants SN4/St4.

Observation period	Participants: SN5/St5
1	St5 has had shift changed and is not therefore present. Following TA, SN5 indicates that as she goes round her patients additional things will occur to her which will require her to modify her plan. Additionally, as team leader, she also likes to find out about other patients in her team, as she may have to care for them on a later shift. Two discharges and two new admissions are expected in the course of this shift. SN5 prepares to receive one of the new admissions
2	<p>SN5 will act as ward co-ordinator this shift. St5 is unsure about TA. Again, aware of potential conflict which may arise in roles as researcher and educator. St5 is in bathroom with patient. She 'buzzes' for help and has to wait several minutes before anyone responds. Patient in aside to researcher – 'We always wondered what that chap was doing until one day we caught him working.'</p> <p>SN5 in aside – 'If you don't pin them (<i>doctors</i>) down to write scripts the patient would never get home.' Researcher returned to ward after lunch to resume observations, however, participants were only just about to take lunch break</p>

Table 4-24: Field notes associated with observation of participants SN5/St5.

In the course of the observation period a number of notes were made which referred to general issues associated with the research.

Technical/Observational issues

- **Clarifying coding for new observations.** Early in the observation period a number of activities were noted that required decisions regarding appropriate coding to be made. Activities that involved preparing equipment, setting up trolleys, clearing equipment away would be coded under 'Technical Activity.' Not having a category for instruction or teaching, it was decided to record this activity as 'Other.'
- **Coding mixed activities.** It was quite common for participants to be engaged in activities that crossed boundaries between activity types. For example, a participant may measure and record a patient's blood pressure, and at the same time use the opportunity afforded by this interaction to talk to the patient's relatives. Where mixed activities occurred, the researcher recorded the primary activity.
- **Observation error.** Perhaps the principle cause of potential observer error was observer fatigue, this being both mental and physical. To help reduce this source of error the researcher took a five-minute break after every observation period of thirty minutes. A further potential source of error was that of missing an observation whilst recording a previous one. Some activities were very brief, in the order of 4 – 5 seconds, making starting, stopping, resetting, recording and restarting the

stopwatch very difficult. Any interactions that lasted less than approximately five seconds were likely to be missed.

- **Meal times.** The researcher noted that meal times in all wards appeared to be periods when team working and primary nursing was set aside, and the distribution of meals became a whole ward activity. At these times observation was suspended and the researcher would normally take his own break.
- **'Grass is always greener.'** In the course of the data collection the researcher was aware that there were a few occasions when it seemed that activities and participants other than those which the researcher was meant to be observing, appeared to be capable of yielding 'much more interesting data.' This came to be regarded as the 'grass is always greener' effect of observing in a complex environment, in which the researcher is exposed to potentially, multiple alternative scenes that could be observed as opposed to the one 'true' scene that should be observed. Once the researcher had identified this as a potential problem in observational research then it was possible to be alert to its occurrence and to minimise any likelihood of going 'offline.'

Theoretical issues

- **Observer effect.** It is clear that the presence of an observer and the process of being observed can, at least initially, affect the observed and the observations being made. That is, the researcher may not see a true image of the phenomenon under investigation. Prior to the beginning of the study the researcher decided that he would try and minimise the disruption to the normal working of the participants as much as was possible. To this end observations were made at a distance of between 2 – 5 metres wherever possible. The researcher would not follow participants into bathrooms, washrooms, or behind screens, would not question the participants whilst they were working, and would allow the normal work pattern to proceed, as far as possible, in the manner it usually would.
- **Clinical environment.** To any observer in a setting such as a hospital ward, it quickly becomes apparent that such an environment is very rich and varied; it is dynamic, and to a large extent unpredictable. This complexity is something of a paradox both for the researcher and for the clinician. For the researcher, the clinical environment is in stark contrast to the controllable and predictable environment that is the laboratory setting. For the clinician the paradox is perhaps even greater. The ward is an unknown land, where order is the clinician's goal, but where it is rarely achieved.

- **Think-aloud.** As the study progressed it became evident that participants were more comfortable, more fluid in their reporting. It was difficult to avoid providing the participant with any verbal or non-verbal feedback that may be interpreted as approval or disapproval. To reduce this risk the researcher tended to adopt a position to the side and slightly behind the participant. If this were not possible then the researcher would avoid eye contact during the TA reporting, and maintain silence unless reminding the participant to ‘think aloud.’
- **Interview.** During the period of observation, questions occurred to the researcher that were subsequently incorporated into the participants’ interviews. Questions were specifically asked about the participants’ experience of TA reporting, and also of being observed. Additionally, participants were asked if they could identify anything that had particularly helped or hindered them in relation to planning and implementing care.
- **Roles.** Prioritising appears to be related to role, i.e., what is important is dependent upon the role one is currently trying to fulfil. The question also arose regarding the extent to which the role one currently occupies is appointment, or activity, specific.

4.8.3 Analysis of Post-Study Interviews.

Chapter three provided a general overview of the analysis of interview transcripts. As described previously, in section 3.3.2.5, the interview transcripts in this study were also analysed using thematic content analysis, as adapted from Burnard (1991). The results from this analysis are presented below. The categories and themes drawn from the interview data are given in table 4-25. An example of one such interview transcript is given in appendix XXXVII.

Impact of illness on priority setting.	A nursing v. medical model for prioritising. Illness severity. Variable significance of medical diagnosis. Commonness of disorder.
Managing interruptions.	Characteristics of interruptions. Strategies for managing interruptions.
Confidence and priority setting.	Confidence affected by work/environment related factors. Developing confidence as a consequence of increasing skill in priority setting. Confidence as a feature of roles/responsibilities.
Managing decisions.	Deciding priority actions. Strategies for deciding. Priorities set with reference to patient. Priorities set with reference to working environment. Intuitive judgement.
Role of experience and education.	Effect of level of clinical skill/experience. Importance of education and knowledge base.
Personal perspectives on care.	Philosophy of carer. Changing philosophy of carer. Professional factors.
Context of caring for patients.	Questions of learning environment/context. Social context of nursing.
Roles.	Current role. Role constraints.
A key skill.	Priority setting as key characteristic required in nurse. Nature of priority setting skill. Effects of lack of skill.
Becoming skilled.	Skill as a function of education/ experience. Challenging students. Importance of relationship with preceptor. Changing skill affected by changing role. Personal characteristics/traits of individual nurses. Forgetting.

Table 4-25: Priority setting themes and their associated categories.

In the following section, the categories, as exposed in response to each particular question, are explored in some detail, and are accompanied by a table indicating whether the category was present for both staff nurses and students. Comparisons can therefore be drawn between students and senior staff nurses. It will be noted that certain categories are highlighted in response to more than one question. Questions 1-4 dealt with the setting of priorities *per se*, attempting to identify the key elements of this skill. Question 5 considered the specific issue of managing care and juggling patient priorities. Questions 6-8 looked at the development and acquisition of priority setting skills. Question 9 asked senior staff nurses to consider those things in their daily routine that facilitate or hinder priority setting.

Q1. In prioritising the care you gave your patients, what were you trying to achieve?

This question allowed the participants to explore their planning with a particular and explicit emphasis on priority setting. Prior to the interview, the researcher had avoided using the term ‘prioritising’, referring instead to planning and organising work or case-load. The purpose of this was to try and ensure that any priorities set were natural and usual for the participants, rather than creating any sense that they had to present the ‘right’ priorities within their care plan.

Staff nurses	Categories	Nursing student
✓	Priorities set with reference to some factor arising from a consideration of patients	✓
✓	Priorities take account of some goal or feature within the working environment	✓
✓	Personal perspectives on care	✓
✓	Illness severity	-
✓	Role of intuition	-
-	Effect of level of clinical skill/experience	✓
✓	Education	-

Table 4-26: Aims of priority setting.

Nb. ✓ indicates that category was present in participants’ responses.

In relation to this question there were a number of points of similarity between students and staff nurses. Both groups identified factors that were focused on the patient.

Students described preparing patients for events that would occur later in the day. They talked of meeting needs, and of identifying problems, of satisfying patients, and of encouraging patients to communicate.

Staff nurses talked about reviewing all patients, and of involving patients in decision-making. It was important to take into account patients’ perceptions, and to organise care in a way that was specific to individual patients. Working with the patient and identifying needs on the basis of feedback was also mentioned.

Both groups talked about the level of dependence or independence of patients as being important. Staff nurses used the phrase ‘optimum level of functioning’, which is perhaps a broader concept. Students refer to care being determined by the patient’s ‘physical

state.'

Staff nurses also indicated that they might attend to dependent patients as a priority. This might suggest the use of a rule or maxim. One staff nurse talked about quality of patients, however, she doesn't make clear what this means –

'I mean things just kind of... tend to fall into place usually... depending I think on the busyness of the ward and what the quality of the patients are like, I think....'

Both groups also cited work or environmental factors that may need to be taken into account, however, in different ways. For the students, guidance is important, either in the form of handover reports, or from their preceptor. For staff nurses, work-related goals included being effective, providing continuity, ensuring patient safety and comfort and completing the work. They also noted the effect of how busy the working environment was, and the effect of liaising with other departments and meeting external deadlines.

Both groups referred to the place of care plans in planning work, with staff nurses also referring to the need for re-evaluation.

One category that might be called personal perspectives of care, or philosophy of the carer, suggested that students tend to think in tasks, and in parts, rather than in 'wholes', whereas, staff nurses have a more holistic perspective. Staff nurses also described not working to a system of rules, notwithstanding the apparent rule given above, regarding attending to dependent patients first.

Students, perhaps not surprisingly, talked about the effect of clinical skill/experience on their ability to care for patients, indicating that they may set different priorities due to a lack of skill and that they may attend to lesser problems or needs that are more basic.

Staff nurses indicated the role of intuition, talking about things 'falling into place', and about the obviousness of certain needs. They also suggested that nurse training brought about changes in priority setting as a result of experience and a growing knowledge base.

Q2. How confident were you about your prioritising?

Confidence, it has been suggested, is a key feature which distinguishes between expert and novice nurses (Baumann, Deber, & Thompson, 1991; Benner et al., 1992; Jasper, 1994). It was expected then that differences related to feelings of confidence in respect of priority setting would be apparent in the interview data.

Staff nurses	Categories	Nursing student
✓	Confidence affected by work/environment related factors	✓
✓	Importance of experience	✓
-	Importance of education	✓
✓	Confidence as a feature of role/responsibilities	✓
✓	Confidence as a consequence of skill level in relation to priority setting	-
-	Skill acquisition	✓
✓	Changing confidence	✓

Table 4-27: Level of confidence in priority setting skill.

Both groups identified factors associated with work, and the working environment, as affecting confidence. Both groups talked about the importance of familiarity with, or of knowing, the area. For students this was extended to knowing staff, and also patients. Students also felt that people’s attitudes and responses towards them affected their confidence. Staff nurses identified the unpredictable and stressful nature of the clinical environment, and the effect of changing environments and practices on confidence.

Experience was seen as being important for both groups, with students acknowledging that their confidence was affected by limited experience as well as technical/practical skills. For staff nurses, experience was about knowing patients better, having more insight and better cognition.

Students identified the effect of roles/responsibilities upon confidence noting the demands of responsibility, and the expectations and demands that others placed upon them. For staff nurses, this was much more significant. They acknowledged the effect that changing roles/responsibilities had, especially upon first qualifying or promotion, with more management responsibilities, supervising others, and delegation. They also acknowledged the effect of other people’s perceptions, expectations and demands. Initially they may have taken on too much.

Both groups reported changing confidence, with students expecting an increase in confidence, linking this with improving ability and skills. Students also noted that stressful periods might affect confidence. For staff nurses, changing confidence involved an increasing confidence both in themselves and in others until they reached a point of feeling very confident and independent.

Students identified two further categories, namely, the benefits of education and skill acquisition. In the former, they suggest that their confidence is negatively affected by a limited knowledge base, and that confidence will improve as this knowledge base expands. They also talk about knowing the significance of test/actions, the ‘significance of little things.’ Students also expressed a need to learn how to prioritise and manage self.

Finally, staff nurses talked about growing in confidence as a consequence of being skilled in priority setting. They identified a lack of confidence in their decision-making skills rather than in their clinical skills, associated this with being able to identify and set priorities. A critical period in the development of their confidence is also referred to, suggesting that they were less confident when first qualified, and of needing guidance from their SCN especially at this time.

Q3. What criteria do you use to decide what to do next?

Whereas question one required the participants to consider their approach to priority setting from a global perspective, i.e., what was it that they were trying to achieve, here they are asked to try and identify specific aspects of their priority setting.

Staff nurses	Categories	Nursing student
✓	Work or environmental considerations	✓
✓	Choosing related to patient	✓
✓	Strategies for priority setting	-
✓	Deciding priority actions	-
✓	Intuitive judgements	✓
✓	Social context of care	-
✓	Philosophy of carer	-
✓	Choosing as a feature of education/experience/knowledge	✓

Table 4-28; Criteria used make priority setting decisions.

Both groups identified two categories that were mentioned earlier, that is, deciding priorities in relation to the patient, and in relation to the work or environmental considerations.

Students suggested that they decide what to do next in relation to patient needs, or comfort. They identified physical care, and severity of illness, as guiding choices. Another category is that of potential for harm. Staff nurses also reported patients' needs and comfort, as well as potential for harm as influencing their priority setting; however, they also include patients' preferences, and their ability to cope. Knowing the patient is regarded as important.

In relation to work, students may decide by 'working to the clock', that is, students say that the activities they plan may be determined by time of day, or by certain pre-set events. They will use information from the handover, and indicated that their freedom to act may be limited.

Staff nurses also identified time constraints and their potential impact upon priority setting, but emphasised that care takes place in a 24-hour framework. They identified activities that they wished to 'get out of the way', or previously unfinished work. They suggested that they might plan work in a way that allows time for longer activities. They also suggested a number of strategies that they may employ; strategies such as listing, omission (what can be left out), deferring, attending to what's left, and delegating.

Staff nurses stated that certain actions are a high priority, and introduced concepts of relative urgency and immediacy. They suggested that minor/routine activities might sometimes have a higher priority. The concept of reverse prioritising is also introduced. In this strategy the nurse decides what is least important and gradually eliminates activities until what remains is the most important or urgent.

Both groups indicated that intuition may have a role here; with students talking about 'common sense' and intuition as helping them decide what to do next. Staff nurses talk about 'just knowing' or the 'obviousness of the appropriate response', and they also talk about deciding 'automatically.'

For the students knowledge and experience are again mentioned - knowing what's most important and the effects of previous experience. For the staff nurses, this is reflected in knowledge based actions and consideration of the consequences.

Two categories are exclusive to staff nurses in relation to this question. The first is the social context of caring for patients, and mention is made here of ritual, and the social world of nursing. The second category reflects the personal perspective, or philosophy of the carer. These too may influence which priorities are set next.

Q4. How important is the medical diagnosis in prioritising nursing care?

For many years nursing was defined almost exclusively by its relationship with medicine. Indeed, nursing curricula were usually developed around the so-called medical model. This is essentially a disease-orientated model, and nursing actions usually involved the implementation of medical prescriptions and treatments. More recently, as nursing has evolved as a separate profession, models of nursing have been described that are independent of, and in marked contrast, to the medical model. However, nursing rarely occurs in complete isolation from medicine, and indeed the relationship between the two will vary in strength from speciality to speciality.

This question explores the extent to which the decisions of care made by nurses are determined by medical diagnosis.

Staff nurses	Categories	Nursing student
✓	Illness severity	✓
✓	Varying significance	✓
✓	A nursing v. medical basis for prioritising	✓
✓	Importance of education	✓
✓	Commonness	-
✓	Intuition	-

Table 4-29: Importance of medical diagnosis in priority setting.

Both groups acknowledged that severity of illness might be important, with staff nurses referring to acute changes and life-threatening conditions, whereas students talked of physical problems, and of complicated cases. One student gave an example of a patient whose care was principally determined by his medical condition.

The significance of the medical diagnosis varied for both groups. Students saw it as ranging from ‘not being important’ to ‘always being important.’ One student qualified it as ‘not being important at her level.’ Staff nurses perceived the medical diagnosis as ranging from ‘not being important’ to ‘fairly important.’ For the staff nurses, care for most patients is not determined by the medical diagnosis, and it is important not to see

patients in terms of their medical diagnosis, although acknowledging that certain nursing actions are linked to diagnosis.

Both groups identified a nursing, rather than a medical basis, for prioritising care. The students, however, had a fairly restricted view of what that basis was, simply acknowledging that medical problems and nursing care may be different, and that for them it was sufficient to know the 'patients limits.' For the staff nurses this concept was much more developed, with nursing focusing on problems and immediate needs rather than diagnosis. Nursing looks for 'other things', including the patient's age, extent of debility, dependency, and evidence of distress.

Both groups again referred to the effect of education, with students stating that their knowledge base was insufficient for the medical diagnosis to have much influence; whereas staff nurses suggested that knowledge might underpin actions.

The staff nurses also made reference to intuition or obviousness, and also, to how common certain medical conditions were in their area, i.e., life-threatening events were infrequent, whereas other conditions, such as acute breathlessness may be more frequently encountered.

Q5. How did you manage interruptions to your plan of work?

In chapter three it was suggested that priority setting might be affected because of difficulty in dealing with the variety of disruptions and interruptions which inevitably occur in the day-to-day work of nursing. This question seeks to explore the way in which the participants incorporated disruptions and interruptions in the course of the study period.

Staff nurses	Categories	Nursing student
✓	Characteristics of interruptions	✓
✓	Strategies for managing interruptions	✓
✓	Characteristic required in nurse	-
-	Level of experience	✓
-	Intuitive judgement	✓
✓	Forgetting	✓

Table 4-30: Managing interruptions to plan of care.

Staff nurses stated that interruptions were frequent, and that they often have a nuisance quality e.g., answering the telephone, but that nonetheless, they may be important. There are times, however, when they are more problematic e.g., during drug rounds. The urgency or seriousness of the cause of the interruption needs to be taken into account when deciding how to manage it, as does the estimated time that the event is likely to require. The staff nurses also acknowledged the unpredictable nature of their work, accepting that some interruptions were inevitable and often unforeseen.

Students appeared to have a much more restricted view of disruptions, acknowledging that the extent of the interruptions may be important. Interruptions may be relativistic and situational, that is, what counts as a significant interruption to a plan of work will, in part, depend upon what the nurse is currently doing and what the interruption is.

Both groups suggested a number of strategies for managing interruptions to their plan of work. Both staff nurses and students suggested focusing on the plan of care, reviewing the plan, or resuming the plan as possible responses. They also talked of deferring actions or requests. They also talked of working around or through interruptions. Staff nurses stated that they might have to re-organise or modify plans. One staff nurse suggested that she often responds immediately, otherwise she may forget. One student nurse acknowledged that she might simply attend to the most recent demand. Another student stated that different kinds of disruptions require different solutions. One strategy available to the staff nurses is that of delegation; this would normally not be available to students at an early stage of training. The staff nurses proposed that one characteristic required in a nurse is that of flexibility.

The students, once again, referred to the importance of experience, including the link between experience and confidence and skill. They talked about still having a lot to learn, and of having limited experience of the question. Acknowledgement was made of the skill of the staff nurse in this regard. Students also referred to a view that didn't see their actions, or work, as being significant. Problems of forgetting were referred to, and intuition was alluded to by a student who said that one 'automatically prioritised' when faced with disruption.

Q6. How do you think that your skill in prioritising has changed/will change over time?

Becoming a nurse involves development and change. It requires the acquisition of knowledge and experience. If priority setting is regarded as a key skill in nursing as suggested in chapter one, then it should prove useful to explore how this changed, or is expected to change over time.

Staff nurses	Categories	Nursing student
✓	Skill as a function of experience	✓
✓	Skill as a function of education	✓
✓	Changing skill affected by changing role	✓
✓	Nature of skill	-
✓	As a function of changing philosophy of carer	✓
-	Change in level of dependence on preceptors	✓
✓	As a function of professional change/changing environment	-
-	Changing confidence	✓

Table 4-31: Changes in priority setting skill over time.

Students expected improvement, that is, they expected skill development. They indicated that they would, in the future, be capable of a more flexible response than they are at this current point. This change is linked to familiarity with clinical placements, and to experience and education. These junior students see 3rd years as skilled and confident. They talked of apprentice-ship or modelling others as a means of becoming skilled. An expanding knowledge base will allow them to make sense of their experiences and to link theory to practice. Some were not previously aware of priority setting as an issue, although one student stated that learning to set priorities was a personal objective. Learning to prioritise is seen as an ‘implicit process.’

For staff nurses, acquiring priority setting skill is also a function of experience; of recognising situations. Their prioritising has improved with a better understanding of how and/or why certain things occur. They talked of a critical period in their learning, and of apprentice-ship. They suggested that what is needed is enough time in placements with the opportunity to develop skills in less demanding environments. They also acknowledged the importance of a sound knowledge base, and of supernumerary status for learning. Learning how to set priorities was not made ‘explicit’ to them in their training.

Both groups see changes in role linked to changing skill. Staff nurses refer to the taking on of new roles and responsibilities, of increasing responsibility and accountability. They see the student role as being more limited. Students emphasised the importance of fitting in and socialisation, as well as taking on increasing responsibilities.

For the students, time would bring about a growth of confidence that was seen as important, as well as a decreased level of dependence on preceptors. Students currently look for external validation of decisions, but in the future they will function more independently, and won't require the same degree of approval. Lastly, students talked about the change in their perspective or philosophy, in that they would have a wider rather than a narrow view; they would see the 'whole.'

Staff nurses also talked about changing perspectives, of individualism and holism as well as the need to keep things in perspective. They also suggested that changes in practice, and approaches to care required changes in one's view of priorities.

The staff nurses talked about the nature of the skill of priority setting. Some nurses were better than others – individual differences. Some saw the skill as developing automatically; as an unavoidable aspect of practice. It is a skill which must improve and which can improve in all. It may reflect a natural trait, and is linked to confidence and skills.

Q7. How important is this skill to being a proficient nurse? Why?

This question did not appear in the interview schedule in the second phase of the study. It appears here because early in the first interview of the clinical study, when asked how her priority setting skills had changed, one participant responded:

'A lot. It's continual development. Experience – you have to learn how to prioritise – you don't just know how. Gaining knowledge - getting to know patients, knowledge, and experience. Recognising situations.'

This response, plus the literature cited earlier describing priority setting as a key skill, led the researcher to explore the significance of this skill further in this question.

Staff nurses	Categories	Nursing student
✓	Nature of skill	-
✓	Effects of lack of skill	✓
✓	Experience	✓
✓	Characteristics/traits of individual nurses in relation to this skill	✓
✓	Professional factors	-
✓	Role	-

Table 4-32: Importance of priority setting skills for nursing practice.

Staff nurses noted that this was an important skill, however, they also suggested that not everyone was skilled. They suggested that the nature of the skill is in relation to giving structure to the planning process; it is about prioritising and managing competing demands.

In talking about the effects of a lack of skill, staff nurses referred to colleagues appearing harassed/stressed, of unfinished work, finishing shift late, of care that is piecemeal and fragmented. An absence of this skill appears as failure - of things not getting done properly. However, they also noted that where this skill is present then the nurse has the appearance of being organised. Experienced nurses, skilled in this regard, may not always agree about priorities set, however, they can recognise that they are present.

A number of aspects related to the individual nurse were reported. These included how the skill of priority setting at work was related to personal characteristics, i.e., some saw themselves as being organised in their own personal lives, this was the way they were as individuals. The ability to have good time-management skills was important. Another important skill was that delegating, of being able to delegate work appropriately to others. For some, another important element in respect of their approach to priority setting was the nurse's approach to care, in particular whether they were inclined to adopt a holistic versus task orientated approach.

Difficulties associated with this skill include assuming too much responsibility as a junior staff nurse, which is linked to a lack of experience.

Students talked about the effects of a lack of priority setting skill as resulting in muddled, inefficient working. There might be an air of panic evident. A lack of confidence is also apparent in those not skilled at priority setting. The students also comment on aspects related to the individual nurses, suggesting that attitude towards work, and the nurse's personality was a factor. There are individuals who let 'everything sail by.'

Q8. How could learners be helped to develop this skill?

Again this question does not appear in the earlier interview schedule, however, it was included because in response to the previous question a number of participants indicated that not all nurses were necessarily skilled at setting priorities. It seemed important, therefore, to explore with the participants, ways in which the acquisition of priority setting skill could be facilitated.

Staff nurses	Categories	Nursing student
✓	Questions of learning environment/context	✓
✓	Challenging students	✓
✓	Experience	✓
✓	Relationships	-
-	Education	✓
-	Role constraints	✓

Table 4-33: Developing priority setting skill in learners.

In relation to this question, staff nurses commented on a number of aspects. They thought that it was important for the student to be challenged, that they be encouraged to think about their care planning and to take responsibility for it. The role of student contrasts quite significantly with that of being a staff nurse. The context in which learning to set priorities occurred was referred to, and the 'reality shock' inherent in clinical practice was noted. Experience was again a factor, and the notion of apprenticeship was seen as important. It was suggested that there might be different skill levels to be considered in respect of priority setting.

Relationships were also significant, especially the relationship with one's preceptor. It was important to have the support of a senior; a proficient, skilled preceptor who could be a role model for the students.

Students also recognised the importance of being challenged, of being questioned and asked to justify their decisions and actions. They also noted the importance of questioning. Students talked much more about the importance of experience, of the concepts of modelling and apprenticeship. They talked of the need to have ‘real practice’ for clinical experience (*as opposed to simulated practice*). Experience also had to be varied. Students talked about rehearsal, and about observation. With experience comes knowledge and knowing more about what is going on around them, e.g., understanding the significance of tests, and so on. Comment was also made about the unpredictable nature of nursing work.

In talking about the context of learning to set priorities, students referred to the advantages of learning in the ‘real world’ of practice, that this skill should be grounded in reality. They talked of ‘seeing’ versus ‘imagining’, of ‘simulation’ versus ‘reality.’ The immediacy and the dynamic nature of nursing work couldn’t be simulated. Simulated learning would be ideal and unrealistic.

For students, priority setting couldn’t be taught but rather had to be experienced. There was no supporting theory. Learning to set a priority was affected in part by their role as students, and the limited independence that they had as a result of this.

Q9. Can you identify any aspects of your daily routine, which help or hinder in the setting of priorities?

This question was only asked of the senior staff nurses and was intended to uncover those particular factors that may facilitate, or otherwise, priority setting in practice.

Staff nurses	
<p>Hinders</p> <p>Ward rounds - disrupts care.</p> <p>Acute changes in patients’ condition.</p> <p>Unpredictable nature of work.</p> <p>Administrative activity e.g., doctors rounds, taking nurse away from direct patient care, placing constraints on functioning of staff nurse in implementing plan.</p> <p>Severity of illness.</p>	<p>Helps</p> <p>Role of SCN.</p> <p>Being aware of the timing of events.</p> <p>Knowing patients.</p> <p>Having information.</p> <p>Integrating information into plans.</p>

Table 4-34: Factors that facilitate or inhibit priority setting in clinical practice.

Those factors, which appeared to hinder the senior staff nurse included administrative tasks, e.g., ward rounds, an activity that nurses seemed to view as taking them away from the patient, and that constrains the nurse in the execution of their plans. However, this view of the ward round as an 'administrative chore' may not be one held by all the members of the multi-disciplinary team. Indeed, a ward round can be viewed as a key decision-making event. Sudden changes in the working situation, or in the patients' condition, also make planning care difficult. The severity of the patients' illness may also have an impact.

A key person in promoting efficient working is that of the Senior Charge Nurse. Also important is the extent to which the nurse knows the patients in their care, and has relevant information in order to inform planning. Being aware of the timing of events is also important.

4.9 Discussion

In this chapter, the broad aims of this phase of the study were to answer the following questions. Firstly, are there differences between learner and senior staff nurses in their setting of priorities in practice? What is the nature of these differences? Are there differences in the priorities that are set by these two groups, or are the differences in the processes by which these decisions are made? Additionally, to what extent are those factors and influences of priority setting, as elicited in simulation methodologies, and described in the priority setting model in chapter three, apparent in the 'real world'?

4.9.1 Key Findings

In relation to the question of priority setting, a number of points can be highlighted. Turning first to the TA reports. It was seen that the senior staff nurses were much more likely to make explicit reference to the process of assigning priorities than the student nurses, with a mean value of 9% of all segments referring to priority setting for the senior staff nurses, compared with only 2.66% for the student nurses. As TA reporting is intended to expose cognitive processes that occur when attempting a problem-solving or decision-making task then these results demonstrate that senior staff nurses gave greater weighting to the importance of priority setting in planning patient care. Why should this be so?

Student nurses suggest one possibility why this should be when they talk about the impact of their relative lack of clinical skill and experience. And again, in a number of places they also made reference to their limited knowledge base at this early stage in their training.

From the TA data it can also be seen that there are differences in relation to other cognitive processes associated with planning patient care. The senior staff nurses' reports contain significantly more references to decision-making, with 19% of all segments containing mention of deciding, as compared to 8.72% in the students' reports. This is significant at $p \leq 0.016$. This is perhaps not surprising as it may represent differences in their respective roles. Experienced senior staff nurses are, after all, expected to make decisions about patients in their care.

Similarly, a marked difference in the category labelled 'describing' can be seen. In this category, 36.2% of student nurses reports contain references to this cognitive process compared with only 18.4% of senior staff nurses reports. Again, this is significant at $p \leq 0.016$. At this early stage in their nursing career, student nurses' experiences are extremely limited as they themselves attest to throughout the data. One consequence of this inexperience is that they have not yet constructed a range of more complex schema within which they may make sense of their experiences. It may also be that these highly descriptive TA reports are indicative of cognitive overload, of a state in which the 'planner' is unable to adequately define and refine the situation or problem space that they are faced with. Excessive use of descriptive narrative in TA reports may be associated with lack of skill in relation to priority setting and planning care.

In relation to planning goals, differences between senior staff nurses and students are largely in relation to role specific elements such as managing others, general administrative duties and administering medications. These are tasks that would not generally be part of junior students' routine duties and therefore do not form a significant proportion of a student's planning goals. It is interesting to note that senior staff nurses make greater reference in their reports to goals associated with aspects of communication. A key element of the students' early theoretical programme is in relation to communication and interpersonal skills, and one might have expected this to be evident in their planning.

In considering a range of other variables that are evident in the TA reports, it can be seen that issues related to time and time management, such as when a particular treatment might be scheduled, or being unsure of when an investigation might take place in the course of the day, are important. It can also be seen that the staff nurses appear to have a greater awareness of the importance of this variable in their planning. Senior staff nurses make reference to this in 7.66% of the segments as opposed to the students 2.12%. This difference is significant at $p \leq 0.008$. This finding might suggest that there is a need for education relating to time management, early in their programme of studies.

A further interesting finding in relation to priority setting was the observation and reporting of a range of different strategies. In addition to identifying and attending first to the 'most important' or 'high' priority tasks, a number of other strategies were used. Sometimes difficult or complex tasks, or patients, were attended to first, or left until other work had been completed. The rationale for this approach being either that these patients, or tasks, needed to be undertaken in order to free the nurse to focus on the remaining workload without 'worrying' about what still had to be done. Alternatively, by leaving them until later the nurse would be able to give their undivided attention to the task, or patient, in question. A further strategy noted on a number of occasions was that of 'reverse prioritising' or elimination. By this is meant that the nurse would consider work to be done, and would decide what could be left or postponed until later. She would repeat this exercise until she was left with what needs to be completed first.

A final strategy noted was that of apparently not prioritising or planning at all – a just wait and see approach. At first glance this would seem to be a poor planning strategy, an abrogation of all that a systematic approach should suggest. However, on closer consideration, this strategy might be selected by confident and experienced nurses in response to a fluid and unpredictable environment. A notion that may be described as 'watchful waiting.'

No attempt was made to measure the efficacy of any of the above strategies and the last two strategies reported above were used exclusively by the senior staff nurse group.

Although reported on extensively in the interview data, little mention is made of the following variables in the TA reports, namely, knowing patients, the extent of a patient's dependency on others, and the severity of their illness. These will be further examined in the following section.

Earlier it was suggested that interruptions could have a considerable impact upon the implementation of any plan made and might interfere with the achievement of previously set priorities. From figure 4-3 it can be seen that during the periods of observation, interruptions were greater for the senior staff nurses than for the students (42.3% as opposed to 22.4%). However, this is not the result of these interruptions for senior staff nurses being necessary longer, but rather, more frequent. On the one hand, it seems entirely in keeping with what is known about the diversity of roles and responsibilities of senior staff nurses, and therefore it is perhaps not unexpected that senior staff nurses are frequently interrupted. Conversely, it is not perhaps surprising to find student nurses prone to fewer disruptions. However, the key question is perhaps not the frequency or duration of such events, but rather their impact on the work and plans of the individual nurse. Although earlier work had suggested that disruptions were seen to be a problem in the implementation of plans of care, it had not indicated that there would be differences between senior staff nurses and students as suggested above. These differences only became apparent because the study continued into the clinical setting, and because observational methods were employed as one of the tools of this phase of the study. Re-prioritising work may be one strategy used to accommodate the effect of interruptions (Bowers et al., 2001).

4.9.2 Other Findings

When carrying out any research study it is perhaps inevitable that other findings will emerge from the data. Some of these may be secondary to the main finding, whereas others will be serendipitous.

In conducting the clinical phase of this study, the researcher was reminded of the extremely varied and complex nature of the ward environment. In considering planning activities it is easy to assume that one is dealing with a stable and predictable setting. Indeed, one might go as far to say that that is how the 'world' should be. However, clinical practice takes place in a world that is unstable, dynamic and complex. The role of the nurse is to 'juggle and integrate multiple patient requests and care needs' (Benner, 1984). In addition, they must supervise student nurses and junior doctors, liaise with numerous paramedical staff and other hospital departments, as well as communicate with relatives and other outside agencies. In short, the clinical environment is a very different one to that of a simulated case-load. The image of a juggler who must not take their eye off the balls is apt.

A further finding was related to the characteristics of poor priority setters. Senior staff nurses indicated during interview that priority setting was an important skill, but that not everyone possessed this skill. They suggested that such nurses could be recognised by appearing harassed, or under pressure, of work that is unfinished, of nurses finishing shift late, and of its impact on patient care, which appears fragmented and incomplete. Again the importance of being skilled at time-management was highlighted. Senior staff nurses also indicated that a related skill was that of delegation. Failure to delegate work often leads to the nurse trying to carry out all the work themselves, and subsequently becoming overwhelmed. This inability to delegate, it is suggested, may be associated with a lack of confidence.

As a corollary of the question regarding characteristics of poor priority setters, participants were asked about the process of becoming skilled at priority setting. The responses could be grouped under a number of headings. The first relates to the need to develop critical thinking skills. This could be achieved by a number of strategies such as challenging students to explain and justify decisions they may make in respect of priority setting. Questioning students about plans, reflecting upon plans of experienced nurses and asking the student to account for them, perhaps suggesting alternatives, could also help in the development of this skill.

In addition to developing critical thinking skills, the value of having a skilled role model in this regard was referred to by both senior staff nurses and students. The students however, stressed the importance of the concept of modelling much more. They suggested that the key to developing competence in this area lay in the notion of 'student as apprentice.'

The form of apprenticeship they were postulating was not a passive one, in which the student became skilled simply by continuous exposure and the passage of time, but rather an active one in which students gained experience by working with a skilled and experienced preceptor who was prepared to challenge and question students and was equally prepared to be challenged. This relationship clearly requires mutual respect and a supportive environment. They were also equally certain about the need for 'real practice', the experience of actual clinical situations rather than any theoretical or academic input.

It can be seen from sections 4.8.1 and 3.7.1.1 that there appears to be a reduction in verbal protocol length in participants with greater experience. This may be due to the increasing complexity of the schema that they use, thus resulting in a more efficient problem-solving strategy, or alternatively, it may represent a more holistic approach to priority setting and planning care than is evident in less experienced nurses (see Table 2-12). A further possibility is that the development and use of problem-solving heuristics may increase with experience (Tversky & Kahneman, 1974; Fisher & Fonteyn, 1995; Murdach, 1995; Cioffi, 1997; Buckingham & Adams, 2000).

4.9.3 Strengths of Study

This, the third phase of the research study, has a number of particular strengths. Firstly, the use of multiple methods, i.e., TA, observation and interview. Each method helped, in its own right, to develop our understanding regarding priority setting in clinical practice. However, in combination, the three methods indicated above, helped provide a sense of completeness from the evidence that would not have been apparent if only a single method had been used. In other words, the use of multiple methods resulted in converging sources of evidence that strengthened the credibility of the findings.

A further strength of this work was the unique use of TA method. As reported earlier TA has been extensively used in non-clinical settings, and has recently been used to explore clinicians' reasoning in live practice settings. However, as was previously indicated, this has only been in respect of single patient case studies, that is, studies in which a single nurse is looking after only one patient for the duration of her shift. This study is the first reported use of TA in an actual practice setting where several patients were being cared for simultaneously. The experience gained in undertaking such a study should encourage other researchers to explore decision-making in complex clinical environments. There are two reasons why this is important. The first is, that caring for several patients at the same time is the reality of most nurses' working experience, and therefore needs to be explored further. Secondly, it is only by studying decision-making in actual practice that it is possible to unravel the complex nature of real-world, real-time decision-making and in this way better understand current practice, and thus, begin to explore strategies for preparing future practitioners.

A further benefit of a clinically based study was that the findings had an ecological validity that is, at best, limited in simulations (Lamond et al., 1996). This validity is important because it enables others to have a greater degree of confidence in such studies than would otherwise be the case if relying upon simulations alone.

4.9.4 Limitations of Study

As an essentially qualitative study, the sample size was small. However, the methods used in the study permit the generation of a rich and detailed data set from just such a small sample size. The study was conducted in a limited setting, namely the acute medical wards of one hospital, and included students from just one local School of Nursing and Midwifery. In that sense it could be argued that the findings lack generalisability. Neither can it be assumed that the findings regarding priority setting could be equally applied to nurses of different grades, working in a diverse range of clinical settings. Nevertheless, the findings do provide some insight into this key skill and support the need for further work in this area.

Another potential limitation in this study is the relationship of the researcher to the participants. In any research study a relationship between those conducting the study and those who are being studied must inevitably develop. In this study however, there was a prior relationship between the researcher and most of the participants, and for the students at least this could be construed as a power relationship. Furthermore, it is important to be aware of the possible conflicts that can exist when working in a familiar environment. By considering them in advance, one can at least be on one's guard to their effects. Nonetheless, the overall benefits of working in an area in which one has a professional background make the risks worthwhile.

4.9.5 Implications

Perhaps the major implication of this phase of the study was the recognition that the findings of the simulation phases of the study alone would have given an incomplete picture of priority setting by trained and learner nurses. Simulations can provide key insights and suggests avenues for future work; however, they lack that vital quality that studies conducted in 'the swampy lowlands' must necessarily possess. In order to understand the work of professionals in practice, and to appreciate the development of the skills necessary for the delivery of competent nursing care, then that care must be studied in the context in which it occurs.

Further, the work reported in this chapter has validated the use of TA methods in the study of decision-making in 'real-time' clinical practice. Despite difficulties it proved possible to use TA reporting to explore clinical decision-making as it happens.

4.9.6 Challenges of Undertaking Clinical Nursing Research

Whilst the rewards of conducting research into professional practice in its natural setting are that the findings will have a validity and applicability that may not otherwise be present, the nature of the clinical environment does present unique challenges. These are highlighted below.

Negotiating access is clearly essential to the conduct of clinical research. This requires both a formal and informal effort on the part of the researcher. Depending upon the exact nature of the research, formal application may need to be made to a number of executives at various levels within the organisation, and may require approval of the Local Research Ethics Committee (LREC). Over and above formal contacts, informal dialogue may be necessary at ward level, with the Senior Charge Nurse and intended participants. In the current research, formal contact was made with the Director of Nursing and Clinical Nurse Manager of the Hospital, and Principal/Dean of the School of Nursing and Midwifery. Discussion was also necessary with the Secretary of the LREC, although, on his advice, no formal application for ethical approval was deemed necessary.

Following the formal approvals and permissions, informal contact was then made with Senior Charge Nurses of the wards in which the study would take place, as well as the senior staff nurses and students who would be the study participants. NHS hospitals have their own very distinct history and culture, and in a sense, a researcher wishing to gain successful access to this strange and alien world needs to be sure of giving everyone their place.

As has already been mentioned, in this study the researcher had a history of association with both the hospital and the School of Nursing in which the investigation would be conducted. The researcher had previous contact with most of the participants, and a familiarity with the research environment because of his current and previous professional background. As has been argued, this prior association does not necessarily prohibit researchers from working in a familiar setting; indeed, it may even provide opportunities and insights that would not otherwise have been available. However, the researcher must reflect upon these issues most carefully prior to undertaking research 'so close to home.'

A particular difficulty in researching clinical nursing practice in a study of this type is the need to co-ordinate multiple off-duty rotas. Duty rotas are planned in order to ensure the best possible level of staff cover at an appropriate skill mix. Whilst it might have been feasible to negotiate that the researcher assigned specific duty patterns for the participants in this study, it would not have been desirable for a number of reasons. The first, and principal, being that this would have produced a distortion in the normal environment; the formulating of duty rotas are usually the remit of the Senior Charge Nurse. There may be many factors that the SCN is aware of that a researcher might not be. Secondly, in order to ensure the co-operation of the participants, the less the apparent disruption to them personally, the more likely they are to feel disposed to participate.

In this study, the researcher was fortunate in that the students were supernumerary, and therefore had a greater degree of flexibility regarding work patterns. They had agreed to adopt the work patterns of their co-participants, and therefore, the researcher only had to concern himself with co-ordinating five senior staff nurses' shifts for each of three study periods, plus a practice session, plus an interview, i.e., up to twenty-five visits over essentially a three week period bearing in mind that each senior staff nurse could be on one of seven different shifts. In addition, the students were only to be allocated to the wards in question over a four-week window early in the spring term. This was not negotiable, and students at the appropriate stage would not again be available for a further six months.

It is not hard to appreciate that a certain amount of patience, diplomacy and interpersonal skills are required to set up such a study.

4.10 Conclusion

In chapter four, priority setting was studied as it occurred in actual clinical practice. A variety of methods were employed, each of which contributed to an understanding of this skill as it occurs in real-time. In particular, the feasibility of using think-aloud method when caring for several patients was demonstrated. The environment in which priority setting occurs was shown to be more complex, unpredictable and dynamic than any simulation might achieve.

Chapter five will draw together findings from the three phases of this study, and will discuss implications that can be drawn from this study in relation to theory, practice and nurse education. Further work will also be suggested.

Chapter Five

Caring for Patients: Setting Priorities

Future Directions

5 Chapter Five: Caring for Patients: Setting Priorities – Future Directions

5.1 Introduction

Nurse educators and practitioners have long acknowledged that setting patient care priorities is a key component of every nurse's practice, and yet, there has been little direct study about this important aspect of nurse decision-making. The motivation for this study arose from observations made by the researcher within both clinical practice and in teaching. It appeared that whilst both learner and qualified nurses seemed to acknowledge the value of this skill, it was an area that some nurses, and many nursing students, experienced difficulty with in practice. However, upon further investigation it appeared that priority setting by clinical nurses, in respect of a patient case-load, had received little attention within the decision-making, problem-solving, or nursing literature.

This study was undertaken, therefore, with the following principal aims:

1. To describe the nature of priority setting in the clinical practice of nursing
2. To compare priority setting behaviours in nurses with varying levels of experience.

Chapters two and three of the current study used a simulated case-load to examine priority setting. This case-load was developed from actual clinical cases, thus increasing the validity of the simulation. In chapter two, four groups of participants with varying levels of nursing experience completed a prioritisation exercise using the simulated case-load. Chapter three developed the study further by combining the prioritisation exercise with think-aloud method, in order to explicate the processes and factors involved in reaching decisions about the order in which to deliver patient care. These were further examined by the use of semi-structured interviews subsequent to the completion of the exercise.

In chapter four, the main aim was to investigate the process of prioritising care as it occurred in 'real time' clinical practice, and to explore those factors that impact upon setting priorities. To this end, think-aloud method was once again employed and was supplemented by the use of observation and semi-structured interviews.

Priority setting is a dynamic, complex activity, and in the current chapter the most important findings from the current study will first of all be drawn together, the strengths and limitations of the study will be identified and discussed, and the implications of the work explored. Suggestions for further work will also be proposed.

5.2 *Summary of Findings*

In this section a summary of the main findings from each phase of the current study will be given.

The findings presented in chapter two demonstrate the utility of a simulated case-load in the initial study of nurse priority setting. This study suggests that priority setting is a skill, inherent in the planning of patient care, and about which nurses with similar levels of experience will agree to a certain extent. This study also suggests that priority setting varies between groups of nurses with varying levels of experience.

Further, in chapter two it was demonstrated that there is a trend towards 'seeing' in wholes, and favouring a person-orientated approach, with increasing levels of experience. By this is meant that some individuals across all groups favoured an approach to prioritising care that took the person as the unit of work, rather than individual tasks or activities of care. It was also seen that there was a trend away from favouring tasks or activities towards a more person-orientated approach with increasing experience. It has been argued that as novices acquire knowledge and experience, information regarding particular activities or patient care scenarios that are stored in long-term memory are gradually reconfigured into larger and larger units. This permits the more experienced to 'see' the task or problem in larger chunks or wholes, thus reducing the cognitive load upon working memory, and enabling faster performance (Newell & Rosenbloom, 1981; Proctor & Dutta, 1995). This chunking is not unique to this study or to nurses, as it is clear that chunking data or compiling skills is a universal occurrence. The findings above are suggestive of the work of Broadbent (1973) who indicates two approaches to thinking, namely serialist and wholist. He suggests that one is not necessarily better than the other, but makes the point that although it is possible to adopt each mode of thought, most individuals will have a preferred approach by the time they reach adulthood.

However, this finding is also interesting as it raises the question of whether, or to what extent, the preferred approach to organising nursing care is modified by nurse education and experience, or the extent to which it is a characteristic of the individual. There is an

emphasis within nursing upon providing holistic care, and it may be that as students progress through their programmes, and gain in clinical experience, that they adopt this predominant perspective rather than focussing on particular tasks or care activities. Nevertheless, the question as to why some participants favoured one approach over the other, and why, even within the most experienced group, some participants continued to focus on tasks, remains an intriguing one.

Chapter three continued the use of a simulated case-load in the study of priority setting, but combined it with the use of think-aloud method. The exercise concluded with a brief, semi-structured interview. In this study, a number of attributes of increasing expertise, as described by Benner and others, were highlighted. The central role of confidence was identified, and the suggestion was made that this is not simply a corollary of experience, but that rather it is the route through which meaningful experiences are mediated. In other words, confidence increased with experience, however, experiences were made more accessible, more meaningful, with increasing confidence.

There was some evidence of rule-based decision-making within the think-aloud reports. According to Benner this is an approach associated with limited experience. However, there was limited support from the data, for the role of intuitive judgement, a key feature of expert practice in the Bennerian model of expertise. This lack of evidence might be related to the restrictions of the simulation method rather than the absence of such forms of judgement within the participants themselves.

Two main characteristics of priority setting are suggested from the findings elicited in this phase of the study. Firstly, that priority setting is determined, in part, by views, values and perceptions held by the nurse regarding both the aims of care, i.e., the goals of nursing, and the object of that care, the patient. Secondly, the findings suggest that the development of certain psychomotor skills, a deepening knowledge base, and recurrent meaningful experiences, are each important in the development of the cognitive skill, setting of priorities.

One finding that appears to run contrary to the existing literature, was the suggestion made by a number of participants in respect of difficult, unpopular, or challenging patients (Stockwell, 1972; Lorber, 1975; Kelly & May, 1982; Roberts, 1984; Podrasky & Sexton, 1988; Johnson & Webb, 1995; Nolan et al., 1995). The existing literature proposes that nurses may respond to such patients by avoiding them, which clearly has implications for the care of such patients. However, the current study found that nurses

might deal with these patients as a priority, in order to then focus their efforts and attention on their remaining case-load. In other words, rather than the response to unpopular or difficult patients being one in which the nurse defers attending to them, in practice the nurse may respond to them as a matter of priority in order to mitigate the effects of repeated interruptions and calls for attention.

The methods used in this phase of the study were supported by the use of two expert panels to validate the functional levels of the participants. However, an important methodological concern was raised, in respect of the use of expert panels in research. It is not uncommon for researchers to use such panels in the construction and development of research tools, and in the analysis of research findings. However, it could be seen from a review of the relevant literature, that the manner by which these panels are convened, and how they make their judgements are often not reported. This is an important omission. It weakens the construct validity of such studies, and leaves the reader uncertain as to who the experts were, what the criteria were for their selection, and how their 'expertise' was used within the research. In the work presented in this thesis, these questions were addressed, in order that the reader could judge the nature of the expertise used in this phase of the study.

The findings in this phase of the current study strongly suggest that priority setting is the result of a complex interplay of factors, and not simply the requirement to place the most urgent or important activity first, then the second, and third, and so on, as was suggested in a number of nursing texts reviewed in chapter one. This study indicates that priority setting involves a number of different features, including psychomotor and cognitive skills, decision-making and time management skills, as well as the nurse's personal perspectives and philosophies of care. It is also affected by constraints and opportunities associated with his or her current role, and by the nurse's capacity to 'know' the patient.

Finally, in chapter four, the study of priority setting was explored in clinical practice. This provided the opportunity to compare priority setting as elicited by simulation methods with that which occurs in actual clinical practice. The use of think-aloud method allowed the exposition of those cognitive strategies that were employed by learner and trained nurses when planning care. The study found that senior staff nurses concentrated more overtly upon priority setting in their verbal protocols than the learner nurses. Furthermore, senior staff nurses engaged in more decision-making during the planning of care, whereas the students' protocols were much more descriptive. Senior staff nurses also appeared to be more keenly aware of time management, and the need to

frame their plan of care around fixed events.

This study also highlighted a range of different strategies that may be called upon by nurses when managing a complex case-load. These included attending to the most urgent or important activities first. Alternatively, a further strategy involved dealing with difficult or complex tasks, or patients, either first, or last. Some participants described the setting of priorities in reverse, that is, reviewing the least urgent or important, and eliminating activities until what remained was the activity or activities requiring immediate attention. Finally, the strategy of 'watchful waiting' was noted.

In the second phase of the study, a number of participants suggested that when caring for patients, interruptions were particularly problematic and likely to disrupt a nurse's proposed plan of care. Using observation in the role of 'observer as participant' enabled the nature and impact of interruptions to the nurse's plan of work to be elucidated. This part of the study identified that most interruptions are of short duration, however, they could be perceived by the caregiver as highly disruptive. The use of observation also identified that the interaction between nurses and patients was frequently of a short duration, a finding that was also supported by the work of Smith (1996).

It is apparent that not all nurses are skilled priority setters, and the likely impact that the lack of this key skill might have upon the work of the nurse was suggested by a number of participants in the study. Furthermore, possible strategies for developing this skill in learner nurses were explored.

In summary, then, the work carried out for this thesis is perhaps the first study of priority setting in relation to a patient case-load. It has examined priority setting by the use of multiple methods, including controlled, simulated case-loads, think-aloud method, and also by continuing the study into the complex, dynamic environment that is actual clinical nursing practice. A number of implications can be derived from this work, and these will be discussed further below.

5.3 *Limitations of Current Study*

In all studies there will be aspects of the research that are limited in some way or another. There will be things done that should not have been, and things not done that could have been. Some of the limitations of the current study have been previously identified in the relevant chapters. This section draws together some of the overall limitations of the research, and reiterates others.

The number of patients within the simulated case-load, as described in chapters two and three (n=4), appears to have been an under-representation of the number of patients normally allocated in a real case-load, when compared to the actual case-loads represented in chapter four (mean case-load=6.4). This may potentially reduce the face validity of the simulation. Although, it is possible that, in the time interval between the development of the simulated case-load and the clinical study, the workload of nurses in clinical practice might have increased. Furthermore, it might be that the period in which the clinical study was conducted was atypical, although there was nothing to suggest that this was in fact the case. It is also important to acknowledge, however, that in order to ensure that the simulation is manageable then inevitably some compromise regarding size of case-load may be required. However, in future, studies that propose to make use of simulations should consider the extent to which the case-load size is representative of clinical reality.

The nursing students and staff nurses in phases two and three of the study were all female and therefore the issue of gender perhaps needs to be considered as a limitation and as an area for further work. However, once again it is necessary to acknowledge the reality of the context within which a study is conducted, and in this work there were no male nursing students or qualified nurses working in the area at the time of the study.

Think-aloud was the principal method used in chapters three and four. This approach has been described as a '*cognitive psychology's most powerful tool for describing psychological processes*' (Hayes, 1981, pg. 51). A number of limitations of TA have been described (see section 3.3.1.3). The suggestion that it is not possible to think-aloud during concurrent verbalisation is no longer held to be a concern, however, the usefulness of think-aloud in the study of clinical nursing may be limited by a number of factors. These include the extent of task complexity, the impact of contextual factors in real world decision-making and the loss of such contextual information during analysis. Furthermore, the use of TA in clinical settings must take cognisance of the need to ensure patient confidentiality during such studies. Nevertheless, the use of think-aloud in the current study strongly suggests that it is an appropriate tool to investigate priority setting and indeed other aspects of problem-solving and clinical decision-making.

In a similar vein, the use of observation in the clinical phase of the current study provided an additional source of 'completeness' (Fielding & Fielding, 1986; Sim & Sharp, 1998), further enhancing the credibility and trustworthiness of the study findings as a whole. Nevertheless, observation as a method for studying priority setting possessed

a number of limitations. The dynamic and complex nature of nursing practice can pose problems for the researcher in coding observed events that may cross several coding categories at the same time. Furthermore, the nature of the clinical environment, especially its busyness, can also increase the risk of observation error. In particular, it was noted that the rich and varied environment found in clinical settings could lead to distraction and missed observations.

The scope of nursing practice and the context in which nursing care is delivered is in constant flux, and therefore the findings from this study are particular to a specific place and time. Nevertheless, this study was the first known attempt to explore the process of priority setting in nursing, and as such it was necessary to focus upon this in a particular location. However, an understanding of priority setting in clinical nursing practice will need to build upon the work begun here and will need to be reviewed and developed on a regular basis, although the underlying principles elucidated in the current work may remain the same.

5.4 Implications for Theory, Practice And Education Derived from the Current Study

The work presented here suggests a number of possible implications from a general theoretical and methodological perspective as well as for nursing practice and education. The following sections will consider each of these in turn.

5.4.1 Implications for Theory and Research

The clinical phase of the current study supported the earlier proposals (see section 1.3.3, and 1.6) that priority setting might occur at two points, namely, that the nurse may identify global goals and associated priorities for their case-load, and that they must also subsequently work out priorities at a more specific level. That is, once the nurse has identified the broad patient outcomes that they wish to work towards, and the interventions that they will use to achieve them, then the nurse must once again set more detailed priorities in order to enable and structure the implementation of the planned care. This is in contrast to literature reviewed in chapter one, which suggested that setting priorities was only associated with the planning phase of the nursing process, prior to goal setting, and the identification of appropriate interventions.

In this regard, then, it is suggested that priority setting occurs at two distinct levels, that is, at a macro and micro level of decision-making. At the macro level, the setting of priorities involves choosing between and amongst patients and their nursing/medical problems, whereas the setting of priorities at the micro level requires the selection and prioritising of particular interventions in order to achieve stated outcomes in relation to macro priorities. Figure 5.1 proposes a model for this two level approach to clinical priority setting. The model suggests that when faced with planning care and setting priorities, the nurse first of all undertakes a global assessment of their case-load identifying broad goals and priorities. Subsequently, a more detailed review of each patient allows the nurse to identify a number of key problem areas requiring and amenable to resolution, thus creating a problem set for each patient. At this point the nurse must consider the interventions that will be necessary to resolve patient problems and achieve desired goals and outcomes, and therefore will need to decide upon implementation priorities.

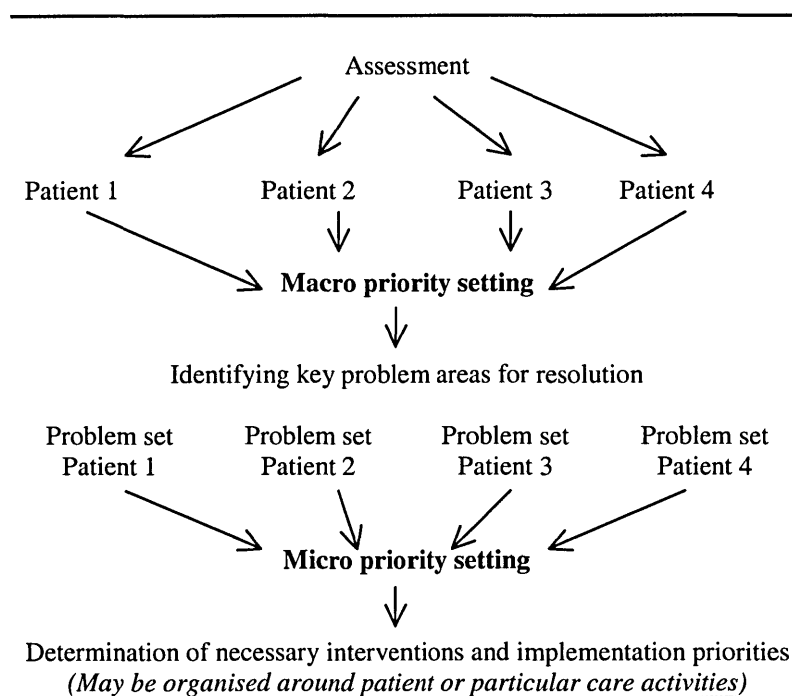


Figure 5-1: Two layered model of priority setting

Figure 5-2 proposes a model in which the process of priority setting is contained within the red square, and those determinants that may impact upon this process are indicated in the surrounding matrix. These determinants have been derived from the existing literature and the current study. What is not clear is the relationship between individual determinants and how or where they interact with the process of setting priorities. Neither is the relative weighting or significance between the determinants themselves identified.

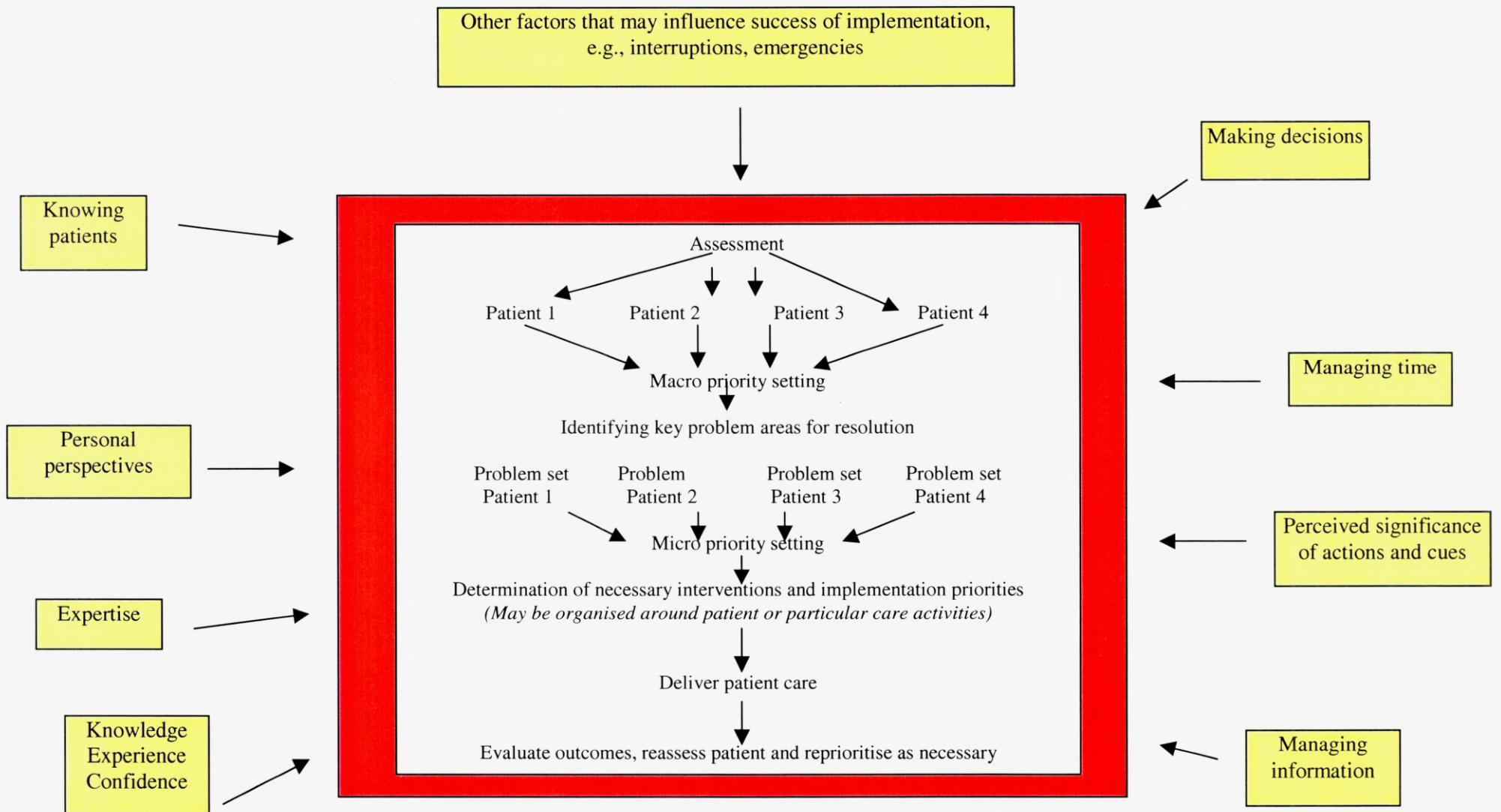


Figure 5-2: Priority setting model illustrating process and determinants

One of the main achievements of the current study has been the successful use of think-aloud methods to study priority setting as it occurred in clinical practice. Think-aloud method not only permits the study of cognitive processes involved in setting priorities, but may also help to identify the rationale underpinning nurses' decision-making, and expose areas that the researcher may wish to explore more fully using other methods. Despite the reservations indicated by Jones (1989) regarding the use of think-aloud methods in examining actual clinical practice, the findings from the current study support the work of Tanner (1989); Fisher & Fonteyn (1995); Fonteyn & Fisher (1995) and Greenwood & King (1995) in the use of such methods, with due consideration of pertinent ethical issues, to study clinical practice 'in situ.'

The findings of this study also support the proposal that nursing has matured and grown as a discipline and as a profession independent from medicine to which it was once so closely linked. Nursing now stands with its own identity, goals, theories and philosophies, albeit these continue to undergo constant evolution and development. The current work indicates that the delivery of care to patients is provided largely from a perspective of nursing rather than being solely determined by the patient's admitting medical diagnosis. Nevertheless, at times of critical or life-threatening illness the patient's medical problems will predominate the nurses' activities. It would seem reasonable to introduce the notion of what constitutes a critical or life-threatening event early in a student's academic life, perhaps using case studies drawn from clinical practice.

One of the unintended but interesting findings raised by the study was the difficulty inherent in the use of expert panels as a means of validating tools and findings. The problems lay not so much in the concept of using a panel of experts *per se*, but rather are related to the difficulties in the definition and selection of experts. It is important that future studies indicate the nature and level of the expertise that the panel is said to represent, and that they clearly identify how their expert judgement was used.

5.4.2 Implications for Practice

The findings from this work support the view that priority setting is a key skill for nurses and nursing practice. Additionally, a number of implications related to practice are suggested by the current study.

The importance of 'knowing patients' was identified as significant in prioritising care. It would therefore seem important that Senior Charge Nurses, and others with

responsibility for organising and planning the delivery of nursing services, consider how best to facilitate the nurse-patient relationship in order to assist individual nurses to achieve the goal of knowing their patients. One possibility would be to suggest that, wherever possible, continuity of care should be provided for patients by allocating the same nurse to provide their care over several shifts. This may also be facilitated by the use of primary nursing.

What other strategies might be beneficial in improving a practitioner's priority setting? Fonteyn (1998) suggests that, as with metacognition in general, thinking about your priority setting will help you improve this skill. How might this thinking about priority setting be promoted? Two possible strategies are proposed here. Firstly, the use of clinical supervision, and secondly, the use of reflection. The three functions of clinical supervision are normally described as formative, restorative and normative (Proctor, 1986; Rafferty, Jenkins, & Parke, 1998; Driscoll, 1999). It is in respect of the first of these, the so-called formative or learning function, that this strategy could prove useful in promoting the development of critical thinking, clinical decision-making, and in particular priority setting skills. Reflection on practice is also useful in the integration of theory and practice, and the development of the practitioner from novice to expert, and once again this strategy might be used to focus on, and develop, priority-setting skills (Marks-Maran & Rose, 1997; Heath, 1998). On a more practical note, it has been proposed that in planning work it would be helpful to write down what needs to be done, indicating on your notes how high a priority a particular activity or action has (Moon, 1998). Furthermore, nurses in practice require to be made aware of this significant aspect of clinical decision-making.

5.4.3 Implications for Nursing Education

The work presented in this thesis has contributed to a better understanding of problem-solving inherent in managing and prioritising care for several patients. This section will consider some possible implications from this study for the education of nursing students. Taylor (2000) suggests that by gaining an improved understanding of the processes involved in clinical problem-solving, educators would be able to better prepare students to become effective problem-solvers, thus leading to improved patient care.

The use of case studies and simulations based upon actual cases has been recommended as a means of improving nurses' decision-making skills, and in particular helping students to identify and prioritise patient problems (Bourbonnais & Baumann, 1985;

Fonteyn & Flaig Cooper, 1994). The use of actual cases, or simulations derived from such cases, would it is argued, facilitate the transfer of problem-solving and decision-making skills from the classroom into clinical practice. Simulations also have the added advantage of allowing students to explore these skills in a safe environment, in which poor judgements have no consequences, for real patients. These skills could then be incorporated into practice, and developed further in students' clinical placements.

Student nurses may also benefit from explicit guidance and support in developing priority setting skills, although the students in the current study suggested that this was best done in the context of clinical practice rather than the classroom. The student participants in this study identified the potential benefits of having a supportive but challenging preceptor, one who would question them regarding the decisions that the student might make in respect of organising their patient case-load. Fonteyn (1991) proposes that identifying the different categories of patient problems that nurses encounter in practice may facilitate the acquisition of clinical reasoning skills. This may help in the early development of recognisable patterns of cues related to patient problems, and construct development. In a similar vein, Crow & Spicer (1995) suggest that theoretical knowledge related to patient assessment and care planning could be better taught by being given in the context of clinical instances, thus facilitating the acquisition of clinically-based categories for organising knowledge in memory.

Findings presented in earlier chapters of this thesis support the central role of appropriate and meaningful experiences in becoming a nurse. Cioffi & Markham (1997) suggested that the need for repeated exposure to experiences of a particular 'type' might require clinical placements to be of a certain critical length, and indeed one of the recommendations of the UKCC (1999) report on fitness for practice was the need to ensure that clinical placements were of an adequate duration. This work supports the proposal that clinical placements need to be of sufficient duration to permit the acquisition of such meaningful experiences, and the development of confidence within nursing students associated with them. No recommendation is made here as to how long these placements should be. Furthermore, Henry (1991) suggests that student nurses and beginning practitioners should have the opportunity to experience a large variety of patient situations. Clearly, finding clinical placements with the correct balance of both range and length of appropriate experiences is a challenge to those with responsibility for allocating nursing students to clinical practice.

Student participants in the current study recognise the benefits of an active engagement with their supervisor. They acknowledge the benefits to their learning, and practice, of being stimulated, stretched and challenged. For this reason, the preparation of students' preceptors is of key importance in the preparation of competent practitioners of tomorrow. Of particular importance is the quality of the preceptor as a role model. Students quickly come to discern nurses whose practice they hold in high regard, and whom they should emulate. Corcoran et al. (1988); Dobrzykowski (1994) and Gordon & Grundy (1997) all promote the idea of apprenticeship at the side of skilled preceptors who will challenge the student, encouraging them to reflect upon their decision-making. It is important that this apprenticeship model should be an active one, rather than the passive 'sitting by Nellie' models of earlier times.

Interestingly, Corcoran et al. (1988) also propose the use of think-aloud method as a means of explicating expert nurses' 'tricks of the trade', that can then be made available to novices in particular areas of practice. They further suggest that the use of think-aloud techniques can enhance the quality of decisions made by nurses, by making more explicit the knowledge base and decision-making processes which underpin successful outcomes. In this way the nurse quickly learns to identify optimum strategies for practice. Extending this proposal, thinking aloud when planning care, with emphasis on setting priorities, could promote the acquisition of this key skill.

Broderick & Ammentrop (1979) propose that with further research into expert practice it will be possible to provide instruction for learners that would help in the development of skilled nursing practice. Watson (1994) suggests that further research could include an experimental approach in which the independent variable is the teaching of decision-making theory and skills with the dependent variable being the effect on the decision made.

It is clear that the preparation of nurses for this aspect of planning care could and should be developed further within the current pre-registration programmes in the United Kingdom. Educators and clinical preceptors of nursing students should be encouraged to promote critical thinking, decision-making and problem-solving skills in their students, and ought, in particular, to facilitate the development of priority setting skills.

5.5 Further Work

As a result of the work carried out in this study a number of possible avenues for further research are suggested. These are considered under two broad headings, namely, those related to a study of priority setting and novice/expert differences, and those of a methodological nature.

Priority setting and novice/expert differences

It was proposed in section 1.3.5 that priority setting could be facilitated by the use of a range of strategies and frameworks. The creation of a tool to assist in priority setting, could both enhance practice, and facilitate skill development in learner nurses. Such a tool might take the form of a prompt card, or aide-memoir. The impact of different strategies and frameworks upon priority setting and their utility in different clinical contexts should also be studied.

As stated above in section 4.9.4, one key limitation of the work undertaken for this thesis was that it was set solely in the context of acute medical wards in only one teaching hospital. Whereas, the current study provides a rich and detailed description of priority setting, and further develops an understanding of this important nursing function, the study of priority setting would be enhanced if further work were carried out in a range of diverse clinical settings. Comparisons could be made between priority setting in acute, continuing care and community based settings. Further studies could also compare acute medical areas with other acute and critical care areas. Bearing in mind the increasing use of agency and bank nursing staff, which may result in more nurses delivering care in areas other than that of their predominant expertise, it would be useful to consider the effect on priority setting of working outwith a practitioner's usual domain. Additionally, further work should consider undertaking a more detailed examination of how novices and experts cope with uncertain or novel situations. As has already been shown, the provision of nursing care in many settings occurs within a highly complex and dynamic environment that is often prone to the unexpected and sudden change and as such this work might illuminate useful strategies that could be employed in clinical practice.

As indicated in chapter one, the literature is replete with studies that explore expert and novice practice at a variety of different levels. The current work identified that these studies may vary in their definitions of expert and/or novice and in the criteria that are used to determine level of expertise. Furthermore, studies also differ in the extent to which the participants are qualified nurses or students, in the length of time since

registration as a nurse, or in respect of the clinical areas involved in the study of expertise. Clearly, these differences make any kind of meta-analysis of the current literature in the area of novice/expert practice, and the development of expertise difficult, due to the lack of common definitions and reference points. It is important that future studies clearly identify both the criteria and rationale for the inclusion or exclusion of participants in relation to experience and putative expertise. Further research may find it useful to investigate variability amongst novices and amongst experts, that is, to explore novice/novice differences and expert/expert differences. One particular aspect of further study might be the influence of gender upon priority setting decisions.

Methodological developments

The use of cognitive task analysis has been employed as a means of studying nursing expertise (Crandall & Getchell-Reiter, 1993). This method is based upon Flanagan's (1954) critical incident technique and uses semi-structured interview to probe the decision-making of experienced nurses. This approach may also have something to offer in the study of priority setting.

The study of priority setting may also be enhanced by the use of longitudinal studies to explore more fully the development of priority setting skills in nurses. These studies could follow students from entry into nurse training until registration, and through into the early years of clinical practice as qualified nurses.

Finally, the concept of 'knowing patients' that has been reported on, in this work and other studies, should be further investigated. In particular, the extent to which this concept is significant in priority setting should be explored further. Additionally, work should be undertaken to explore the minimum parameters that are necessary to achieve the goal of 'knowing' the patient.

5.6 *Priority Setting: On the Agenda?*

Findings from a number of recent studies have suggested that a systematic study of priority setting in nursing is long overdue. A number of these studies have examined the skills of newly qualified staff nurses (Luker et al., 1996; May, Veitch, McIntosh, & Alexander, 1997; Runciman, Dewar, & Goulbourne, 1998; Gerrish, 1999, 2000; Runciman, Dewar, Goulbourne, & Knani, 2000). In relation to priority setting, two main findings have been identified in these studies. Firstly, that newly qualified nurses identify priority setting as being an important skill in their new roles, and secondly, that

this is a difficult skill to master. Both of these findings are consistent with the results from the work presented in this thesis. Gerrish (1999, 2000) in her study, noted that prioritising care was seen to be a difficult skill, and yet a key one. She describes how junior staff nurses find it hard to know what order to do things in, sometimes attending to the most dependent patient first, and running out of time for less dependent ones, and yet at other times they would adopt the opposite strategy. This description of the junior nurse's difficulties may indicate skill acquisition by trial and error learning/practice. The nurses in Gerrish's study also found delegation difficult, and staff nurses frequently found themselves under considerable pressure of time, and were often 'racing against the clock.' These findings from Gerrish's studies were also identified in the current work. Runciman et al. (1998) and Runciman et al. (2000) study, which aimed to identify the core skills required by newly qualified nurses, found a consensus agreement on the essential nature of priority setting as a core skill of between 66-81% depending upon the environment in which the newly qualified nurse was working. Once again, this finding is consistent with the view expressed by a number of participants in the current study that the skill of priority setting was a key one.

The work presented in this thesis contributes to a better understanding of this aspect of planning and providing patient care. Furthermore, at a time when recent studies of the skills required by newly qualified nurses, are indicating the importance of this particular skill for practice, the current work provides the nursing profession with the first known study of priority setting.

5.7 Conclusions

Nurses today face a multiplicity of demands; case-loads are larger, and patients are often more dependent. Nurses find that their roles are undergoing constant revision and development. Their work is more self-directed than in the past; they have a degree of autonomy of practice not previously imagined and they are each held accountable for every aspect of their practice and every decision they make.

It is essential that nurses manage this diversity of demands, and do so effectively. The work presented in this thesis has considered the particular need to set priorities of care and of action; to 'juggle and integrate multiple patient requests and care needs...' (Benner, 1984).

Finally, taking the study into the places in which nurses work and students learn the work presented particular challenges. A researcher working in a clinical setting has to

expect the unexpected and possess an aptitude for flexibility and thinking on the hoof. Clinical areas, as has been reported above, are not the safe, predictable environments that are normally found in a setting in which one might conduct a simulation. Nevertheless, this is the real world of nursing and it is one that continues to need studied.

The work undertaken for this thesis has taken an understanding of priority setting in clinical nursing practice from that of anecdotal, informal and taken for granted assumptions to a beginning understanding of the topic. However, it is useful to note a word of caution in respect of priority setting -

'The setting of priorities should be a useful guide for allocating different types of resources for different purposes, rather than a tyranny which imposes rigid rules for allocating all resources over all purposes.'

(MacStravic, 1978, pg.23)

Time is a continuum that we experience as moving inexorably forward from the now to the next. We live in the moment, we reflect on the past, but we plan for the future. Our actions and behaviours occur at a point in time. They also happen at a place in space. But our actions must also have a context, that is, they are in a relationship to other places, times, actions and people.

Sometimes we drift in this moment in time. However, we may need to manage our time moments, to plan to make best use of the temporal journey that lies ahead. In our working lives we often need to organise our actions and behaviours in terms of time and space and context. When we organise our actions in respect of time, doing that which is most important first, we are said to be prioritising our goals.

This study has been a recognition of the importance of priority setting within the practice of nursing. It has explored the nature of this skill and its implications for effective nursing care. Furthermore, it has further compared priority setting in nurses of different grades and with varying levels of experience. This work has hopefully made the obvious strange (Jones, 2001), that is, it has taken a skill well-known to nurses and has attempted to examine priority setting in a manner that renders it at one and the same time both familiar and strange. In many respects, the sentiments expressed at the end of this work are reminiscent of those expressed by Wade & Swanston (1991). Priority

setting is an exciting and important characteristic of many aspects of life, and especially of clinical nursing. There is much that remains to be done, however, and it is hoped that this work will be the beginning of a journey of discovery and not an end.

Reference List

- Abbott, P., & Sapsford, R. (1993). Studying policy and practice: use of vignettes. *Nurse Researcher, 1*, 81-91.
- Adair, J. (1987). *How to manage your time*. Guildford, England: The Talbot Adair Press.
- Adelson, B. (1984). When novices surpass experts: the difficulty of a task may increase with expertise. *Journal of Educational Psychology: Learning, Memory and Cognition, 10*(3), 483-495.
- Afflerbach, P., & Johnston, P. (1984). On the use of verbal reports in reading research. *Journal of Reading Behavior, XVI*(4), 307-322.
- Alfaro-LeFevre, R. (1999). *Critical thinking in nursing: a practical approach* (2nd ed.). Philadelphia: W.B.Saunders Company.
- Allen, R. E. (Ed.). (1990). *The concise Oxford dictionary of current English* (8th ed.). Oxford: Clarendon Press.
- Allwood, C. M. (1990). On the relation between justification of solution method and correctness of solution in statistical problem solving. *Scandinavian Journal of Psychology, 31*, 181-190.
- Anderson, J. R. (1982). Acquisition of cognitive skill. *Psychological Review, 89*(4), 369-406.
- Anthony, D. (1999). *Understanding advanced statistics: a guide for nursing and health care researchers*. Edinburgh: Churchill Livingstone.
- Appleton, J. V. (1995). Analysing qualitative interview data: addressing issues of validity and reliability. *Journal of Advanced Nursing, 22*, 993-997.
- Aradine, C. R., & Deynes, M. J. (1972). Activities and pressures of clinical nurse specialists. *Nursing Research, 21*(5), 411-418.

- Ashworth, P. (1986). *Qualitative research in psychology*. Pittsburgh, Pennsylvania: Duquesne University Press.
- Ayanian, J. Z., Landrum, M. B., Normand, S. T., Guadagnoli, E., & McNeil, B. J. (1998). Rating the appropriateness of coronary angiography - do practicing physicians agree with an expert panel and with each other? *The New England Journal of Medicine*, 338(26), 1896-1904.
- Bailey, J. T., & Claus, K. E. (1975). *Decision making in nursing: tools for change*. St. Louis: C.V. Mosby.
- Bandura, A. (1997). *Self-efficacy: the exercise of control*. New York: W.H. Freeman and Company.
- Barker, P. J. (1991a). Observation. In D. F. S. Cormack (Ed.), *The research process in nursing* (2nd ed., pp. 228-241). Oxford: Blackwell Scientific Publications.
- Barker, P. J. (1991b). Questionnaire. In D. F. S. Cormack (Ed.), *The Research Process in Nursing* (2nd ed., pp. 215-227). London: Blackwell Scientific Publications.
- Barker, P. J. (1996). Observation. In D. F. S. Cormack (Ed.), *The research process in nursing* (3rd ed., pp. 250-265). Oxford: Blackwell Science.
- Barlow, S. (1994). Drawing up a schedule for observation. *Nurse Researcher*, 2(2), 22-29.
- Barnum, B. S. (1998). *Nursing theory: analysis, application, evaluation* (5th ed.). Philadelphia: Lippincott.
- Barrows, H. S. (1968). Simulated patients in medical teaching. *Canadian Medical Association Journal*, 98(676), 420-425.
- Baumann, A., & Bourbonnais, F. (1982). Nursing decision making in critical care areas. *Journal of Advanced Nursing*, 7, 435-446.

- Baumann, A. O., Deber, R. B., & Thompson, G. G. (1991). Overconfidence among physicians and nurses: the 'micro-certainty, macro-uncertainty' phenomenon. *Social science and medicine*, 32(2), 167-174.
- Benner, P. (1982). From novice to expert... the Dreyfus model of skill acquisition. *American Journal of Nursing*, 82, 402-407.
- Benner, P. (1984). *From novice to expert: excellence and power in clinical nursing practice*. Menlo Park, California: Addison-Wesley Publishing Company.
- Benner, P. (1996). A response by P. Benner to K. Cash, "Benner and expertise in nursing: a critique". *International Journal of Nursing Studies*, 33, 669-674.
- Benner, P., & Tanner, C. (1987). Clinical judgment: how expert nurses use intuition. *American Journal of Nursing*, 87, 23-31.
- Benner, P., Tanner, C., & Chesla, C. (1992). From beginner to expert: gaining a differentiated clinical world in critical care nursing. *Advances in Nursing Science*, 14, 13-28.
- Benner, P., Tanner, C. A., & Chesla, C. A. (1996). *Expertise in nursing practice: caring, clinical judgment and ethics*. New York: Springer Publishing Company.
- Benner, P., & Wrubel, J. (1982). Skilled clinical knowledge: the value of perceptual awareness. *Nurse Educator*, 11-17.
- Benner, P., & Wrubel, J. (1989). *The primacy of caring: stress and coping in health and illness*. Menlo Park, California: Addison-Wesley Publishing Company.
- Berry, A. J., & Metcalf, C. L. (1986). Paradigms and practices: the organisation of the delivery of nursing care. *Journal of Advanced Nursing*, 11, 589-597.
- Birchall, R., & Waters, K. R. (1996). What do elderly people do in hospital? *Journal of Clinical Nursing*, 5, 171-176.
- Bittel, L. R. (1991). *Right on Time! The complete guide for time-pressured managers*. New York: McGraw-Hill Inc.

- Bogdan, R., & Taylor, S. (1984). *Introduction to qualitative research* (2nd ed.). New York: Wiley Press.
- Bourbonnais, F. F., & Baumann, A. (1985). Stress and rapid decision making in nursing: an administrative challenge. *Nursing Administration Quarterly*, 9(3), 85-91.
- Bowers, B. J., Luring, C., & Jacobson, N. (2001). How nurses manage time and work in long-term care. *Journal of Advanced Nursing*, 33(4), 484-491.
- Breitmayer, B. J., Ayres, L., & Knafl, K. A. (1993). Triangulation in qualitative research: evaluation of completeness and confirmation purposes. *Image: Journal of Nursing Scholarship*, 25(3), 237-243.
- Broadbent, D. E. (1973). *In defense of empirical psychology*. London: Methuen and Co. Ltd.
- Broderick, M. E., & Ammentrop, W. (1979). Information structures: an analysis of nursing performance. *Nursing Research*, 28, 106-110.
- Brown, J. S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher*, 32-42.
- Brown, M. M., & Wilson, C. (1987). Time management and the clinical nurse specialist. *Clinical Nurse Specialist*, 1(1), 33-38.
- Bryans, A., & McIntosh, J. (2000). The use of simulation and post-simulation interview to examine the knowledge involved in community nursing assessment practice. *Journal of Advanced Nursing*, 31(5), 1244-1251.
- Buckingham, C. D., & Adams, A. (2000). Classifying clinical decision making: interpreting nursing intuition, heuristics and medical diagnosis. *Journal of Advanced Nursing*, 32(4), 990-998.
- Burgess, R. G. (1982). *Field research: a source book and field manual*. London: George Allen and Unwin.

Burnard, P. (1991). A method of analysing interview transcripts in qualitative research. *Nurse Education Today*, 11, 461-466.

Burnard, P. (1995). Interpreting text: An alternative to some current forms of textual analysis in qualitative research. *Social Sciences in Health*, 1(4), 236-245.

Burnard, P., & Morrison, P. (1994). *Nursing research in action: developing basic skills* (2nd ed.). London: Macmillan.

Byerly, E. L. (1969). The nurse researcher as participant observer in a nursing setting. *Nursing Research*, 18(3), 230-236.

Carey, J. W. (1993). Linking qualitative and quantitative methods: integrating cultural factors into public health. *Qualitative Health Research*, 3(3), 298-318.

Carnevali, D. L., & Thomas, M. D. (1993). *Diagnostic reasoning and treatment decision making in nursing*. Philadelphia: J.B. Lippincott Company.

Carpenito, L. J. (1989). *Nursing diagnosis: application to clinical practice* (3rd ed.). Philadelphia: J.B. Lippincott Company.

Carpenito, L. J. (1997). *Nursing diagnosis: application to clinical practice* (7th ed.). Philadelphia: Lippincott.

Carr, L. T. (1994). The strengths and weaknesses of quantitative and qualitative research: what method for nursing? *Journal of Advanced Nursing*, 20, 716-721.

Carter, D. E., & Porter, S. (2000). Validity and reliability. In D. F. S. Cormack (Ed.), *The research process in nursing* (4th ed.). Oxford: Blackwell Science Ltd.

Cash, K. (1995). Benner and expertise in nursing: a critique. *International Journal of Nursing Studies*, 32, 527-534.

Chandler, J. (1991). *Tabbner's nursing care: theory and practice* (2nd ed.). Edinburgh: Churchill Livingstone.

- Charness, N. (1979). Components of skills in bridge. *Canadian Journal of Psychology*, 33, 1-16.
- Charness, N. (1981). Aging and skilled problem solving. *Journal of Experimental Psychology*, 110, 21-38.
- Chase, W. G., & Simon, H. A. (1973). Perception in chess. *Cognitive Psychology*, 4, 55-81.
- Chenitz, W. C. (1986). The informed interview. In W. C. Chenitz & J. M. Swanson (Eds.), *From practice to grounded theory: qualitative research in nursing*. Wokingham, Berkshire: Addison-Wesley.
- Chi, M. T. H., Glaser, R., & Rees, E. (1982). Expertise in problem solving. In R. J. Sternberg (Ed.), *Advances in the psychology of human intelligence* (Vol. 1). Hillsdale, New Jersey: Lawrence Erlbaum Associates.
- Christensen, P. J. (1995). Planning: priorities and outcome identification. In P. J. Christensen & J. W. Kenney (Eds.), *Nursing Process: application of conceptual models* (4th ed.). St. Louis: Mosby.
- Cioffi, J. (1997). Heuristics, servants to intuition, in clinical decision-making. *Journal of Advanced Nursing*, 26, 203-208.
- Cioffi, J., & Markham, R. (1997). Clinical decision making by midwives: managing case complexity. *Journal of Advanced Nursing*, 25, 265-272.
- Conway, J. E. (1998). Evolution of the species "expert nurse". An examination of the practical knowledge held by expert nurses. *Journal of Clinical Nursing*, 7, 75-82.
- Corcoran, S. (1986). Decision analysis: a step-by-step guide for making clinical decisions. *Nursing and Health Care*, 7, 148-154.
- Corcoran, S., Narayan, S., & Moreland, H. (1988). "Thinking aloud" as a strategy to improve clinical decision making. *Heart and Lung: Journal of Critical Care*, 17, 463-468.

Corcoran, S. A. (1986a). Planning by expert and novice nurses in cases of varying complexity... drug administration plans to control patients' pain. *Research in Nursing and Health*, 9, 155-162.

Corcoran, S. A. (1986b). Task complexity and nursing expertise as factors in decision making... processes used by nurses to plan patient care. *Nursing Research*, 35(2), 107-112.

Corner, J. (1991). In search of more complete answers to research questions. Quantitative versus qualitative research methods: is there a way forward? *Journal of Advanced Nursing*, 16, 718-727.

Couchman, W., & Dawson, J. (1995). *Nursing and health-care research: a practical guide* (2nd ed.). London: Scutari Press.

Coulter, I. D., Shekelle, P. G., Mootz, R. D., & Hansen, D. T. (1995). The use of expert panel results: the RAND panel for appropriateness of manipulation and mobilization of the cervical spine. *Topics in Clinical Chiropractic*, 2(3), 54-62.

Crandall, B., & Getchell-Reiter, K. (1993). Critical decision method: a technique for eliciting concrete assessment indicators from the intuition of NICU nurses. *Advances in Nursing Science*, 16, 42-51.

Crawford, B. M., Meana, M., Stewart, D., & Cheung, A. M. (2000). Treatment decision making in mature adults: gender differences. *Health Care for Women International*, 21, 91-104.

Crow, R., & Spicer, J. (1995). Categorisation of the patient's medical condition -- an analysis of nursing judgement. *International Journal of Nursing Studies*, 32, 413-422.

Cutcliffe, J. R., & McKenna, H. P. (1999). Establishing the credibility of qualitative research findings: the plot thickens. *Journal of Advanced Nursing*, 30(2), 374-380.

Davis, A. J., & Slater, P. V. (1989). U.S. and Australian nurses' attitudes and beliefs about the good death. *Image: Journal of Nursing Scholarship*, 21, 34-39.

- Davis, B. D., & Burnard, P. (1992). Academic levels in nursing. *Journal of Advanced Nursing, 17*, 1395-1400.
- De Groot, A. D. (1965). *Thought and choice in chess*. The Hague: Mouton.
- Degner, L. F., & Russell, C. A. (1988). Preferences for treatment control among adults with cancer. *Research in Nursing and Health, 11*, 367-374.
- dela Cruz, F. A. (1994). Clinical decision-making styles of home healthcare nurses. *Image: Journal of Nursing Scholarship, 26*(3), 222-226.
- Denzin, N. K., & Lincoln, Y. S. (1994). *Handbook of qualitative research*. Thousand Oaks: Sage Publications Inc.
- Denzin, N. K., & Lincoln, Y. S. (2000). *Handbook of qualitative research* (2nd ed.). Thousand Oaks: Sage Publications Inc.
- Dobrzykowski, T. M. (1994). Teaching strategies to promote critical thinking skills in nursing staff. *Journal of Continuing Education in Nursing, 25*, 272-276.
- Dowding, D. (2001). Examining the effects that manipulating information given in the change of shift report has on nurses' care planning ability. *Journal of Advanced Nursing, 33*(6), 836-846.
- Dreyfus, H. L., & Dreyfus, S. E. (1986). Five steps from novice to expert, *Mind over machine: the power of human intuition and expertise in the era of the computer* (pp. 16-51). New York: The Free Press.
- Dreyfus, S., & Dreyfus, H. (1980). *A five stage model of the mental activities involved in directed skill acquisition*. Berkeley: Supported by the U.S. Air Force, Office of Scientific Research (AFSC) under contract F49620-C-0063 with the University of California).
- Driscoll, J. (1999). Getting the most from clinical supervision. Part one: the supervisee. *Mental Health Practice, 2*(6), 28-35.

Dube, R. V. (1995). Protocol analysis: applications in rehabilitation. *Canadian Journal of Rehabilitation, 9*, 27-32.

Duffy, M. E. (1987). Methodological triangulation: a vehicle for merging quantitative and qualitative research methods. *Image: Journal of Nursing Scholarship, 19*(3), 130-133.

Duke, E. S. (1986). A taxonomy of games and simulations for nurse educators. *Journal of Nursing Education, 25*(5), 197-207.

Dunwell, F., & Hanson, B. (1998). Appraising a ward's 'philosophy of care' statement. *Mental Health Nursing, 18*(5), 18-22.

Edenborough, R. (1996). *Effective interviewing: a handbook of skills, techniques and applications*. London: Kogan Page.

Effken, J. A. (2001). Informational basis for intuition. *Journal of Advanced Nursing, 34*(2), 246-255.

Egan, D. W., & Schwartz, B. J. (1979). Chunking in the recall of symbolic drawings. *Memory and Cognition, 7*(2), 149-158.

Einhorn, H. J. (1980). Learning from experience and suboptimal rules of decision making. In T. S. Wallsten (Ed.), *Cognitive processes in choice and decision behavior* (pp. 1-20). Hillsdale, N.J.: Lawrence Erlbaum Associates.

Elstein, A. S., Shulman, L. S., & Sprafka, S. A. (1978). *Medical problem solving: an analysis of clinical reasoning*. Cambridge, MA.: Harvard University Press.

Endacott, R. (1994). Objectivity in observation. *Nurse Researcher, 2*(2), 30-40.

English, I. (1993). Intuition as a function of the expert nurse: a critique of Benner's novice to expert model. *Journal of Advanced Nursing, 18*, 387-393.

Ericsson, K. A., & Simon, H. A. (1980). Verbal Reports as Data. *Psychological Review, 87*(3), 215-251.

- Ericsson, K. A., & Simon, H. A. (1984). *Protocol analysis: verbal reports as data*. Cambridge, Massachusetts: The MIT Press.
- Ericsson, K. A., & Simon, H. A. (1993). *Protocol analysis: verbal reports as data* (Revised ed.). Cambridge, Massachusetts: MIT Press.
- Ettenson, R., Shanteau, J., & Krogstad, J. (1987). Expert judgment: is more information better? *Psychological Reports, 60*, 227-238.
- Evans, L. K. (1996). Knowing the patient: the route to individualized care. *Journal of Gerontological Nursing, 22*, 15-19,47-53.
- Farrand, L. L., Holzemer, W. L., & Schleutermann, J. A. (1982). A study of construct validity: simulations as a measure of nurse practitioners' problem-solving skills. *Nursing Research, 31*(1), 37-42.
- Farrington, A. (1993). Intuition and expert clinical practice in nursing. *British Journal of Nursing, 2*, 228-229,231-223.
- Feldman, E. S., Monicken, D., & Crowley, M. B. (1983). A systems approach to prioritizing. *Nursing Administration Quarterly, 57-62*.
- Ferguson, K., & Hope, K. (1999). From novice to competent practitioner: tracking the progress of undergraduate mental health nursing students. *Journal of Advanced Nursing, 29*, 630-638.
- Field, P. A. (1987). The impact of nursing theory on the clinical decision making process. *Journal of Advanced Nursing, 12*, 563-571.
- Field, P. A., & Morse, J. M. (1985). *Nursing research: the application of qualitative approaches*. London: Croom Helm.
- Fielding, D. W., & Page, G. G. (1978). Development and validation of written simulation problems for pharmacy. *American Journal of Pharmaceutical Education, 42*, 270-280.
- Fielding, N. (1994). Varieties of research interviews. *Nurse Researcher, 1*(3), 4-13.

- Fielding, N. G., & Fielding, J. L. (1986). *Linking data*. Beverly Hills CA: Sage.
- Fife-Shaw, C. (1995). Surveys and sampling issues. In G. M. Breakwell & S. Hammond & C. Fife-Shaw (Eds.), *Research methods in psychology*. London: Sage Publications.
- Fisher, A., & Fonteyn, M. (1995). An exploration of an innovative methodological approach for examining nurses' heuristic use in clinical practice... including commentary by Graves JR. *Scholarly Inquiry for Nursing Practice*, 9, 263-279.
- Fitts, P. M. (1964). Perceptual-motor skill learning. In A. W. Melton (Ed.), *Categories of human learning*. New York: Academic Press.
- Fitts, P. M., & Posner, M. I. (1967). *Human performance*. London: Prentice-Hall.
- Fitzpatrick, J. M., While, A. E., & Roberts, J. D. (1996). Operationalisation of an observation instrument to explore nurse performance. *International Journal of Nursing Studies*, 33(4), 349-360.
- Flanagan, J. C. (1954). The critical incident technique. *Psychological Bulletin*, 51(4), 327-358.
- Flaskerud, J. H. (1979). Use of vignettes to elicit responses toward broad concepts. *Nursing Research*, 28(4), 210-212.
- Fontana, D. (1993). *Managing time*. Leicester: The British Psychological Society.
- Fonteyn, M., & Fisher, A. (1995). Research corner. Use of Think Aloud method to study nurses' reasoning and decision making in clinical practice settings. *Journal of Neuroscience Nursing*, 27, 124-128.
- Fonteyn, M. E. (1991). Implications of clinical reasoning studies for critical care nursing. *Focus on Critical Care*, 18(4), 322-327.
- Fonteyn, M. E. (1998). *Thinking strategies for nursing practice*. Philadelphia: Lippincott.

- Fonteyn, M. E., & Cahill, M. (1998). The use of clinical logs to improve nursing students' metacognition: a pilot study. *Journal of Advanced Nursing*, 28, 149-154.
- Fonteyn, M. E., & Flaig Cooper, L. (1994). The written nursing process: is it still useful to nursing education. *Journal of Advanced Nursing*, 19, 315-319.
- Fonteyn, M. E., Kuipers, B., & Grobe, S. J. (1993). A description of Think Aloud method and protocol analysis. *Qualitative Health Research*, 3(4), 430-441.
- Forrester, D. A. (1990). AIDS-related risk factors, medical diagnosis, do-not-resuscitate orders and aggressiveness of nursing care. *Nursing Research*, 39, 350-354.
- Fowler, L. P. (1997). Clinical reasoning strategies used during planning care. *Clinical Nursing Research*, 6(4), 349-361.
- Fox, D. J. (1966). *Fundamentals of research in nursing*. New York: Appleton.
- Garbett, R. (1996a). Organisation of nursing care: professional issues. *Nursing Times*, 92(35), 9-12.
- Garbett, R. (1996b). Organisation of nursing care: the role of the nurse. *Nursing Times*, 92(34).
- Garratt, S. (1985). *Manage Your Time*. London: Fontana/Collins.
- Gatley, E. (1992). PREPP: from novice to expert. *British Journal of Nursing*, 1, 88-91.
- Gerrish, K. (1999). *A comparative study of the newly qualified nurse's perception of the transition from student to qualified nurse*. Sheffield: Sheffield Hallam University.
- Gerrish, K. (2000). Still fumbling along? A comparative study of the newly qualified nurse's perception of the transition from student to qualified nurse. *Journal of Advanced Nursing*, 32(2), 473-480.
- Gilhooly, K., & Green, C. (1996). Protocol analysis: theoretical background. In J. T. E. Richardson (Ed.), *Handbook of qualitative research methods for psychology and the social sciences* (pp. 43-54). Leicester, UK.: BPS Books.

Gilhooly, K. J. (1990). Cognitive Psychology and Medical Diagnosis. *Applied Cognitive Psychology, 4*, 261-272.

Gilhooly, K. J., McGeorge, P., Hunter, J., Rawles, J. M., Kirby, I. K., Green, C., & Wynn, V. (1997). Biomedical knowledge in diagnostic thinking: the case of electrocardiogram (ECG) interpretation. *European Journal of Cognitive Psychology, 9*(2), 199-223.

Gilhooly, K. J., Wood, M., Kinnear, P. R., & Green, C. (1988). Skill in map reading and memory for maps. *The Quarterly Journal of Experimental Psychology, 40A*(1), 87-107.

Gillham, B. (2000). *The Research Interview*. London: Continuum.

Glaser, B. G., & Strauss, A. L. (1968). *The discovery of grounded theory: strategies for qualitative research*. London: Weidenfeld and Nicolson.

Gordon, M. (1980). Predictive strategies in diagnostic tasks. *Nursing Research, 29*(1), 39-45.

Gordon, M. (1987). *Nursing diagnosis: process and application* (2nd ed.). New York: McGraw-Hill Book Co.

Gordon, M. (1994). *Nursing diagnosis: process and application* (3rd ed.). St. Louis: Mosby Year Book Inc.

Gordon, M. F., & Grundy, M. (1997). From apprenticeship to academia: an adult branch programme. *Nurse Education Today, 17*, 162-167.

Gould, D. (1996). Using vignettes to collect data for nursing research studies: how valid are the findings? *Journal of Clinical Nursing, 5*, 207-212.

Gove, P. B. (Ed.). (1971). *Webster's third new international dictionary of the English language unabridged*. Springfield, Massachusetts: G. & C. Merriam Company.

Grant, J., & Marsden, P. (1987). The structure of memorized knowledge in students and clinicians: an explanation for diagnostic expertise. *Medical Education, 21*, 92-98.

Grant, J., & Marsden, P. (1988). Primary knowledge, medical education and consultant expertise. *Medical Education*, 22, 173-179.

Graves, J. R. (1995). Response to 'An exploration of an innovative methodological approach for examining nurses' heuristic use in clinical practice'. *Scholarly Inquiry for Nursing Practice*, 9(3), 277-279.

Green, A. J. K. (1992). Empirical advances in expertise research. In M. T. Keane & K. J. Gilhooly (Eds.), *Advances in the psychology of thinking*. London: Harvester Wheatsheaf.

Green, C., & Gilhooly, K. (1996). Protocol analysis: practical implementation. In J. T. E. Richardson (Ed.), *Handbook of qualitative research methods for psychology and the social sciences* (pp. 55-74). Leicester, UK: BPS Books.

Greene, J., & D'Oliveira, M. (1999). *Learning to use statistical tests in psychology* (2nd ed.). Buckingham: Open University Press.

Greenwood, J. (1984). Nursing research: a position paper. *Journal of Advanced Nursing*, 9, 77-82.

Greenwood, J. (1993). The apparent desensitization of student nurses during their professional socialization: a cognitive perspective. *Journal of Advanced Nursing*, 18, 1471-1479.

Greenwood, J., & King, M. (1995). Some surprising similarities in the clinical reasoning of "expert" and "novice" orthopaedic nurses: report of a study using verbal protocols and protocol analyses. *Journal of Advanced Nursing*, 22, 907-913.

Greenwood, J., & Winifreyda, A. (1995). Two strategies for promoting clinical competence in pre-registration nursing students. *Nurse Education Today*, 15, 184-189.

Grobe, S. J., Drew, J. A., & Fonteyn, M. E. (1991). A descriptive analysis of experienced nurses' clinical reasoning during a planning task. *Research in Nursing and Health*, 14, 305-314.

Grossman, S. C., & Wheeler, K. (1997). Predicting patients' detonation and recovery. *Clinical Nursing Research*, 6(1), 45-58.

- Hall, J. (1990). Towards a psychology of caring. *British Journal of Clinical Psychology*, 29, 129-144.
- Hammersley, M., & Atkinson, P. (1983). *Ethnography. Principles in Practice*. London: Tavistock.
- Hams, S. (1998). Intuition and the coronary care nurse. *Nursing in Critical Care*, 3(3), 130-133.
- Handron, D. S. (1992). Research Basics: getting past gatekeepers. *Decubitus*, 5(5), 52-54.
- Hanson, E. J. (1994). Issues concerning the familiarity of researchers with the research setting. *Journal of Advanced Nursing*, 20, 940-942.
- Harbison, J. (1991). Clinical decision making in nursing. *Journal of Advanced Nursing*, 16, 404-407.
- Hayes, J. (1981). *The complete problem solver*. Philadelphia: Franklin Institute.
- Heath, H. (1998). Reflection and patterns of knowing in nursing. *Journal of Advanced Nursing*, 27, 1054-1059.
- Heath, H. B. (Ed.). (1995). *Potter and Perry's foundations in nursing theory and practice*. London: Mosby.
- Henerson, M. E., Morris, L. L., & Fitz-Gibbon, C. T. (1987). *How to measure attitudes*. California: Sage.
- Henry, S. B. (1991). Effect of level of patient acuity on clinical decision making of critical care nurses with varying levels of knowledge and experience. *Heart and Lung: Journal of Critical Care*, 20(5), 478-485.
- Henry, S. B., & Holzemer, W. L. (1993). The relationship between performance on computer-based clinical simulations and two written methods of evaluation: cognitive examination and self-evaluation of expertise. *Computers in Nursing*, 11, 29-34.

- Hilton, P., & Goddard, M. (1996). Taken to task. *Nursing Times*, 92(16), 44-45.
- Hinds, P. S., Scandrett-Hibden, S., & McAulay, L. S. (1990). Further assessment of a method to estimate reliability and validity of qualitative research findings. *Journal of Advanced Nursing*, 15, 430-435.
- Holden, G. W., & Klingner, A. M. (1988). Learning from experience: differences in how novice vs. expert nurses diagnose why an infant is crying. *Journal of Nursing Education*, 27, 23-29.
- Holloway, I., & Fulbrook, P. (2001). Revisiting qualitative inquiry: interviewing in nursing and midwifery research. *NT Research*, 6(1), 539-550.
- Holzemer, W. L., Schleutermann, J. A., Farrand, L., & Miller, A. G. (1981). A validation study: simulations as a measure of nurse practitioner problem-solving skills. *Nursing Research*, 30(3), 139-144.
- Howell, D. C. (1992). *Statistical methods for psychology* (3rd ed.). Boston: PWS-Kent Publishing Company.
- Hubbard, J. P., Levit, E. J., Schumacher, C. F., & Schnabel, T. G. (1965). An objective evaluation of clinical competence. *New England Journal of Medicine*, 272, 1321-1328.
- Hughes, H. D. (1917). An interesting seed corn experiment. *The Iowa Agriculturalist*, 17, 424-425.
- Hughes, K. K., & Young, W. B. (1990). The relationship between task complexity and decision-making consistency. *Research in Nursing and Health*, 13, 189-197.
- Hutchinson, S., & Wilson, H. S. (1992). Validity threats in scheduled semistructured research interviews. *Nursing Research*, 41(2), 117-119.
- Itano, J. K. (1989). A comparison of the clinical judgment process in experienced registered nurses and student nurses. *Journal of Nursing Education*, 28, 120-126.
- Itano, J. K. (1991). *The organization of clinical knowledge in novice and expert nurses*. Unpublished PhD, University of Hawaii.

Jacka, K., & Lewin, D. (1987). *The clinical learning of student nurses*. London: King's College, University of London.

Jasper, M. A. (1994). Expert: a discussion of the implications of the concept as used in nursing. *Journal of Advanced Nursing*, 20, 769-776.

Jenny, J., & Logan, J. (1992). Knowing the patient: one aspect of clinical knowledge. *Image: Journal of Nursing Scholarship*, 24, 254-258.

Jick, T. D. (1979). Mixing qualitative and quantitative methods: triangulation in action. *Administrative Science Quarterly*, 24, 602-611.

Johannsson, S. L., & Wertenberger, D. H. (1996). Using simulation to test critical thinking skills of nursing students. *Nurse Education Today*, 16, 323-327.

Johnson, M. (1992). A silent conspiracy?: some ethical issues of participant observation in nursing research. *International Journal of Nursing Studies*, 29(2), 213-223.

Johnson, M., & Webb, C. (1995). Rediscovering unpopular patients: the concept of social judgement. *Journal of Advanced Nursing*, 21, 466-475.

Jones, A. R. (2001). Time to think: temporal considerations in nursing practice and research. *Journal of Advanced Nursing*, 33(2), 150-158.

Jones, J. A. (1988). Clinical reasoning in nursing. *Journal of Advanced Nursing*, 13, 185-192.

Jones, J. A. (1989). The verbal protocol: a research technique for nursing. *Journal of Advanced Nursing*, 14, 1062-1070.

Jones, M. C., & Johnston, D. W. (1997). Distress, stress and coping in first-year student nurses. *Journal of Advanced Nursing*, 26, 475-482.

Jones, M. C., & Johnston, D. W. (2000a). A critical review of the relationship between perception of the work environment, coping and mental health in trained nurses, and patient outcomes. *Clinical Effectiveness in Nursing*, 4, 75-85.

Jones, M. C., & Johnston, D. W. (2000b). Reducing distress in first level and student nurses: a review of the applied stress management literature. *Journal of Advanced Nursing*, 32(1), 66-74.

Jorgensen, D. L. (1989). *Participant observation: a methodology for human studies*. Newbury Park, CA: Sage.

Juliana, C. A., Orehowsky, S., Smith-Regojo, P., Sikora, S. M., Smith, P. A., Stein, D. K., Wagner, D. O., & Wolf, Z. R. (1997). Interventions used by staff nurses to manage "difficult" patients. *Holistic Nursing Practice*, 11(4), 1-26.

Kahn, H., & Cooper, C. L. (1990). Mental health, job satisfaction, alcohol intake and occupational stress among dealers in financial markets. *Stress Medicine*, 6(4), 285-298.

Kassirer, J. P., Kuipers, B. J., & Gorry, G. A. (1982). Toward a theory of clinical expertise. *American Journal of Medicine*, 73, 251-259.

Kelly, M. P., & May, D. (1982). Good and bad patients: a review of the literature and theoretical critique. *Journal of Advanced Nursing*, 7, 147-156.

Kennedy, C. (1999). Participant observation as a research tool in a practice based profession. *Nurse Researcher*, 7(1), 56-65.

Kidd, P. S., & Parshall, M. B. (2000). Getting the focus and the group: enhancing analytical rigor in focus group research. *Qualitative Health Research*, 10(3), 293-308.

Klein, R. D., & Fleck, R. A. (1990). International business simulation/gaming: an assessment and review. *Simulation and Gaming*, 21(2), 147-165.

Knafl, K. A., & Breitmayer, B. J. (1991). Triangulation in qualitative research: issues of conceptual clarity and purpose. In J. M. Morse (Ed.), *Qualitative Nursing Research: a contemporary dialogue* (Revised ed.). London: Sage Publications.

Kozier, B., Erb, G., Blais, K., Wilkinson, J. M., & Van Leuven, K. (1998). *Fundamentals of nursing: concepts, process, and practice* (Updated 5th ed.). Menlo Park, California: Addison-Wesley.

- Kratz, C. (1979). *The nursing process*. London: Bailliere Tindall.
- Kron, T., & Durbin, E. (1981). Planning Nursing Intervention, *The Management of Patient Care* (5th ed., pp. 144-146). Philadelphia: W.B.Saunders.
- Kron, T., & Gray, A. (1987). *The management of patient care: putting leadership skills to work* (6th ed.). Philadelphia: Saunders.
- Kuipers, B., Moskowitz, A. J., & Kassirer, J. P. (1988). Critical decisions under uncertainty: representation and structure. *Cognitive Science*, *12*, 177-210.
- Kvale, S. (1996). *Interviews: an introduction to qualitative research interviewing*. Thousand Oaks: Sage Publications.
- Labovitz, S., & Hagedorn, R. (1976). *Introduction to social research*. New York: McGraw-Hill.
- Lamond, D., Crow, R., Chase, J., Doggen, K., & Swinkels, M. (1996). Information sources used in decision making: considerations for simulation development. *International Journal of Nursing Studies*, *33*, 47-57.
- Lamond, D., & Farnell, S. (1998). The treatment of pressure sores: a comparison of novice and expert nurses' knowledge, information use and decision accuracy. *Journal of Advanced Nursing*, *27*, 280-286.
- Lanza, M. L. (1988). Technical notes: development of a vignette -- a data collection instrument about patient assault. *Western Journal of Nursing Research*, *10*, 346-351.
- Lanza, M. L. (1990). A methodological approach to enhance external validity in simulation based research. *Issues in Mental Health Nursing*, *11*, 407-422.
- Lanza, M. L., & Carifio, J. (1990). The use of control vignettes. *Image: Journal of Nursing Scholarship*, *22*, 231-234.
- Lanza, M. L., & Carifio, J. (1991). Blaming the victim: complex (nonlinear) patterns of causal attribution by nurses in response to vignettes of a patient assaulting a nurse. *Journal of Emergency Nursing*, *17*, 299-309.

- Lanza, M. L., & Carifio, J. (1992). Use of a panel of experts to establish validity for patient assault vignettes. *Evaluation Review*, 17(1), 82-92.
- Lanza, M. L., Carifio, J., Pattison, I., & Hicks, C. (1997). Validation of a vignette simulation of assault on nurses by patients. *Image: Journal of Nursing Scholarship*, 29(2), 151-154.
- Larkin, J. H., McDermott, J., Simon, D. P., & Simon, H. A. (1980). Models of competence in solving physics problems. *Cognitive Science*, 4, 317-345.
- Lawler, J. (1983). Ousting Maslow from nursing. *The Australian Nurses Journal*, 13(1), 36-38.
- Leahy, J. M. (1998). Planning. In J. M. Leahy & P. E. Kizilay (Eds.), *Foundations of Nursing Practice: a nursing process approach*. Philadelphia: W.B. Saunders Company.
- Leddy, S. K. (1998). *Conceptual bases of professional nursing* (4th ed.). Philadelphia: Lippincott.
- Lewis, C. (1981). Skill in algebra. In J. R. Anderson (Ed.), *Cognitive skills and their acquisition*. Hillsdale, NJ.: Erlbaum.
- Lewis, S. M., & Collier, I. C. (1992). *Medical-surgical nursing. assessment and management of nursing problems*. (3rd ed.). St. Louis: Mosby Year Book.
- Lobo, M. L. (1992). Observation: a valuable data collection strategy for research with children. *Journal of Pediatric Nursing: Nursing Care of Children and Families*, 7, 320-328.
- Long, B. (1995). Perspectives of adult nursing. In B. C. Long & W. J. Phipps & V. L. Cassmeyer & C. Brooker & V. El Gamel & P. Gotecha (Eds.), *Adult Nursing: a nursing process approach* (UK ed.): Mosby.
- Long, B. C., & Phipps, W. J. (1989). *Medical-surgical Nursing: a nursing process approach* (2nd ed.). St. Louis: The C.V. Mosby Company.

- Lorber, J. (1975). Good patients and problem patients: conformity and deviance in a general hospital. *Journal of Health and Social Behaviour*, 16, 213-225.
- Lowdermilk, D. L., & Fishel, A. H. (1991). Computer simulations as a measure of nursing students' decision-making skills. *Journal of Nursing Education*, 30, 34-39.
- Ludwick, R. (1999). Clinical decision making: recognition of confusion and application of restraints. *Orthopaedic Nursing*, 18, 65-72.
- Luker, K., Carlisle, C., Riley, E., Stilwell, J., Davies, C., & Wilson, R. (1996). *Project 2000 Fitness for purpose: report to the Department of Health.*: University of Warwick and University of Liverpool.
- Luker, K. A., & Kenrick, M. (1992). An exploratory study of the sources of influence on the clinical decisions of community nurses. *Journal of Advanced Nursing*, 17, 457-466.
- Mackenzie, J. (1994). Analysing data: alternative methods. *Nurse Researcher*, 1(3), 50-56.
- Mackenzie, M., & Mackenzie, A. (1995). *Investing time for maximum return*. West Des Moines, Iowa: American Media Publishing.
- MacStravic, R. E. (1978). Setting priorities in health planning: what does it all mean? *Inquiry*, XV, 20-24.
- Mander, R. (1992). Seeking approval for research access: the gatekeeper's role in facilitating a study of the care of the relinquishing mother. *Journal of Advanced Nursing*, 17, 1460-1464.
- Marks-Maran, D., & Rose, P. (1997). Thinking and caring: new perspectives on reflection. In D. Marks-Maran & P. Rose (Eds.), *Reconstructing nursing: beyond art and science*. London: Bailliere Tindall.
- Marriner-Tomey, A. (1998). Introduction to analysis of nursing theories. In A. Marriner-Tomey & M. R. Alligood (Eds.), *Nursing theorists and their work* (4th ed.). St. Louis: Mosby.

- Marsden, J. (1999). Expert nurse decision making: telephone triage in an ophthalmic accident and emergency department. *NT Research*, 4(1), 44-54.
- Marshall, C., & Rossman, G. B. (1989). *Designing qualitative research*. London: Sage.
- May, C. (1998). The preparation and analysis of qualitative interview data. In B. Roe & C. Webb (Eds.), *Research and development in clinical nursing practice* (pp. 59-83). London: Whurr Publishers Ltd.
- May, K. A. (1991). Interview techniques in qualitative research: concerns and challenges. In J. M. Morse (Ed.), *Qualitative nursing research: a contemporary dialogue* (Revised ed., pp. 188-201). Newbury Park: Sage.
- May, N., Veitch, L., McIntosh, J. B., & Alexander, M. F. (1997). *Evaluation of nurse and midwife education in Scotland - 1992 programmes. Final report to the National Board for Scotland*. Glasgow: Glasgow Caledonian University.
- McCash, K. E. (1996). Nursing process. In S. M. Lewis & I. C. Collier & M. M. Heitkemper (Eds.), *Medical-surgical nursing: assessment and management of clinical problems* (4th ed.). St. Louis: Mosby.
- McKeithen, K. B., Reitman, J. S., Reuter, H. H., & Hirtle, S. C. (1981). Knowledge organization and skill differences in computer programmers. *Cognitive Psychology*, 13, 307-325.
- Meerabeau, L. (1992). Tacit nursing knowledge: an untapped resource or a methodological headache? *Journal of Advanced Nursing*, 17, 108-112.
- Merrell, J., & Williams, A. (1994). Participant observation and informed consent: relationships and tactical decision-making in nursing research. *Nursing Ethics: An International Journal for Health Care Professionals*, 1, 163-172.
- Miles, M. B., & Huberman, A. M. (1984). *Qualitative data analysis: a sourcebook of new methods*. London: Sage.
- Miller, M. D. (1987). Simulation in medical education: a review. *Medical Teacher*, 9(1), 35-41.

Misener, T. R. (1986). Toward a nursing definition of child maltreatment using seriousness vignettes... nursing specialty groups define similarly. *Advances in Nursing Science*, 8, 1-14.

Mitchell, E. S. (1986). Multiple triangulation: a methodology for nursing science. *Advances in Nursing Science*, 8(3), 18-26.

Moon, P. (1998). Time management and personal organization. In D. Lock (Ed.), *The Gower Handbook of Management* (4th ed.). Aldershot, Hampshire: Gower Publishing Ltd.

Morison, M., & Moir, J. (1998). The role of computer software in the analysis of qualitative data: efficient clerk, research assistant or Trojan horse? *Journal of Advanced Nursing*, 28(1), 106-116.

Morse, J. M. (1991a). Approaches to qualitative-quantitative methodological triangulation. *Nursing Research*, 40(1), 120-123.

Morse, J. M. (1991b). Qualitative nursing research: a free-for-all? In J. M. Morse (Ed.), *Qualitative nursing research: a contemporary dialogue* (Revised ed.). London: Sage Publications.

Morse, J. M., & Field, P. A. (1996). *Nursing research: the application of qualitative approaches* (2nd ed.). London: Chapman & Hall.

Murdach, A. D. (1995). Clinical practice and heuristic reasoning. *Social Work: Journal of the National Association of Social Workers*, 40, 752-758.

Murphy, G. L., & Wright, J. C. (1984). Changes in conceptual structure with expertise: differences between real-world experts and novices. *Journal of Educational Psychology: Learning, Memory and Cognition*, 10(1), 144-155.

Neistadt, M. E. (1995). Methods of assessing clients' priorities: a survey of adult physical dysfunction settings. *The American Journal of Occupational Therapy*, 49(5), 428-435.

Newell, A., & Rosenbloom, P. S. (1981). Mechanisms of skill acquisition and the law of practice. In J. R. Anderson (Ed.), *Cognitive skills and their acquisition*. Hillsdale, NJ.: Erlbaum.

Newell, A., & Simon, H. A. (1972). *Human problem solving*. Englewood Cliffs, NJ: Prentice-Hall.

Nield-Anderson, L., Minarik, P. A., Dilworth, J. M., Jones, J., Nash, P. K., O'Donnell, K. L., & Steinmiller, E. A. (1999). Responding to "difficult" patients: manipulation, sexual provocation, aggression - how can you manage such behaviors? *American Journal of Nursing*, 99(12), 26-35.

Nightingale, F. (1859). *Notes on nursing: what it is and what it is not*. (Reprint 1970 ed.). London: G Duckworth and Company Ltd.

Nisbett, R. E., & Wilson, T. D. (1977). Telling more than we can know: Verbal reports on Mental Processes. *Psychological Review*, 84(3), 231-259.

Nolan, M., Grant, G., & Nolan, J. (1995). Busy doing nothing: activity and interaction levels amongst differing populations of elderly patients. *Journal of Advanced Nursing*, 22, 528-538.

Offredy, M. (1998). The application of decision making concepts by nurse practitioners in general practice. *Journal of Advanced Nursing*, 28(5), 988-1000.

Offredy, M. (2000). Decision making processes of nurse practitioners and general practitioners in the treatment of herpes zoster (shingles). Personal Communication.

O'Neill, E. S. (1994). Home health nurses' use of base rate information in diagnostic reasoning. *Advances in Nursing Science*, 17(2), 77-85.

Oppenheim, A. N. (1992). *Questionnaire design, interviewing and attitude measurement* (2nd ed.). London: Pinter Publishers.

Orme, L., & Maggs, C. (1993). Decision-making in clinical practice: how do expert nurses, midwives and health visitors make decisions? *Nurse Education Today*, 13, 270-276.

- Padrick, K. P. (1991). *Clinical decision making in nursing: a comparison between simulations and practice situations*. Paper presented at the Proceedings of the Ninth Annual Conference on Research in Nursing Education.
- Parahoo, K. (1997). *Nursing Research: principles, process and issues*. Basingstoke, Hampshire: Macmillan.
- Pateman, B. (1998). Computer aided qualitative data analysis: the value of Nud.ist and other programs. *Nurse Researcher*, 5(3), 77-89.
- Patton, M. Q. (1990). *Qualitative evaluation and research methods* (2nd ed.). London: Sage Publications.
- Pearsall, M. (1965). Participant observation as a role and method in behavioural research. *Nursing Research*, 14(1), 37-42.
- Pearson, A., Vaughan, B., & Fitzgerald, M. (1996). *Nursing models for practice* (2nd ed.). Oxford: Butterworth-Heinemann.
- Peternelj-Taylor, C. A. (1989). The effects of patient weight and sex on nurses' perceptions: a proposed model of nurse withdrawal. *Journal of Advanced Nursing*, 14, 744-754.
- Pless, B. S., & Clayton, G. M. (1993). Clarifying the concept of critical thinking in nursing. *Journal of Nursing Education*, 32, 425-428.
- Podrasky, D. L., & Sexton, D. L. (1988). Nurses' reactions to difficult patients. *Image: Journal of Nursing Scholarship*, 20, 16-21.
- Polit, D. F. (1996). *Data analysis and statistics for nursing research*. Stamford, Connecticut: Appleton and Lange.
- Polit, D. F., Beck, C. T., & Hungler, B. P. (2001). *Essentials of nursing research: methods, appraisal and utilization* (5th ed.). Philadelphia: Lippincott.

Potter, J. (1996). Discourse analysis and constructionist approaches: theoretical background. In J. T. E. Richardson (Ed.), *Handbook of qualitative research methods for psychology and the social sciences* (pp. 125-156). Leicester: The British Psychological Society.

Potter, P. A., & Perry, A. G. (1993). *Fundamentals of nursing: concepts, process and practice* (3rd ed.). St. Louis: Mosby Year Book.

Potter, P. A., & Perry, A. G. (1997). *Fundamentals of nursing: concepts, process and practice* (4th ed.). St. Louis: Mosby.

Pretzlik, U. (1994). Observational methods and strategies. *Nurse Researcher*, 2(2), 13-21.

Proctor, B. (1986). Supervision: a co-operative exercise in accountability. In M. Marken & M. Payne (Eds.), *Enabling and ensuring supervision in practice*. Leicester: National Youth Bureau, Council for Education and Training in Youth and Community Work.

Proctor, R. W., & Dutta, A. (1995). *Skill acquisition and human performance*. London: Sage Publications.

Radwin, L. E. (1995a). Conceptualizations of decision making in nursing: analytic models and "knowing the patient". *Nursing Diagnosis*, 6, 16-22.

Radwin, L. E. (1995b). Knowing the patient: a process model for individualized interventions. *Nursing Research*, 44, 364-370.

Radwin, L. E. (1996). 'Knowing the patient': a review of research on an emerging concept. *Journal of Advanced Nursing*, 23, 1142-1146.

Rafferty, M., Jenkins, E., & Parke, S. (1998). *Clinical supervision: what's happening in practice? A report submitted to the clinical effectiveness support unit (Wales)*. Swansea: University of Wales.

Ranyard, R., & Abdel-Nabi, D. (1993). Mental accounting and the process of multiattribute choice. *Acta Psychologica*, 84, 161-177.

- Reitman, J. (1976). Skilled perception in Go: deducing memory structures from inter-response times. *Cognitive Psychology*, 8, 336-356.
- Roberts, D. (1984). Non-verbal communication: Popular and unpopular patients. In A. Faulkner (Ed.), *Communication* (pp. 3-28). Edinburgh: Churchill Livingstone.
- Roberts, J., While, A. E., & Fitzpatrick, J. (1996). Exploring the process of data acquisition: methodological challenges encountered and strategies employed. *Journal of Advanced Nursing*, 23, 366-372.
- Robertson, C. M. (1982). A description of participant observation of clinical teaching. *Journal of Advanced Nursing*, 7, 549-554.
- Robson, C. (1993). *Real world research. A resource for social scientists and practitioner-researchers*. Oxford: Blackwell.
- Romhanyi, A. (1990). A time to reflect. *Nursing Times*, 86(21), 33-34.
- Roper, N., Logan, W. W., & Tierney, A. J. (1999). *The elements of nursing: a model for nursing based on a model of living* (4th ed.). Edinburgh: Churchill Livingstone.
- Rose, K. (1994). Unstructured and semi-structured interviewing. *Nurse Researcher*, 1(3), 23-32.
- Royle, J. A., & Walsh, M. (1992). *Watson's medical-surgical nursing and related physiology* (4th ed.). London: Bailliere Tindall.
- Rubinfeld, M. G., & Scheffer, B. K. (1995). *Critical thinking in nursing: an interactive approach*. Philadelphia: J.B. Lippincott Company.
- Rubenstein, L. V., Fink, A., Yano, E. M., Simon, B., Chernof, B., & Robbins, A. S. (1995). Increasing the impact of quality improvement on health: an expert panel method for setting institutional priorities. *Journal on Quality Improvement*, 21(8), 420-432.
- Runciman, P., Dewar, B., & Goulbourne, A. (1998). *Employers' needs and the skills of newly qualified Project 2000 staff nurses: final report to the National Board for Scotland*. Edinburgh: Queen Margaret College.

Runciman, P., Dewar, B., Goulbourne, A., & Knani, A. (2000). *The work of newly qualified staff nurses: perceptions of core skills*. Edinburgh: Queen Margaret University College.

Rutherford, M., & Spitzer, S. P. (1968). Observer effects and hospital interaction. *Nursing Research, 17*(1), 65-68.

Sandelowski, M. (1993). Rigor or rigor mortis: the problem of rigor in qualitative research revisited. *Advances in Nursing Science, 16*, 1-8.

Sandelowski, M. (1994). Notes on transcription. *Research in Nursing and Health, 17*, 311-314.

Sandelowski, M. (1995). Sample size in qualitative research. *Research in Nursing and Health, 18*, 179-183.

Scheffer, B. K., & Rubinfeld, M. G. (2000). A consensus statement on critical thinking in nursing. *Journal of Nursing Education, 39*(8), 352-369.

Schmidt, H. G., & Norman, G. R. (1988). *On the development of expertise in medicine: evidence from case-representation studies*. Maastricht, The Netherlands: University of Limburg.

Schon, D. (1988). From technical rationality to reflection-in-action. In J. Dowie & A. Elstein (Eds.), *Professional judgment: a reader in clinical decision making* (pp. 60-77). Cambridge: Cambridge University Press.

Schon, D. A. (1983). *The reflective practitioner: how professionals think in action*: Basic Books.

Schon, D. A. (1991). *The reflective practitioner: how professionals think in action*. Aldershot: Ashgate-Arena.

Schwarz, M. S., & Schwarz, C. J. (1955). Problems in participant observation. *American Journal of Sociology, 60*(4), 343-353.

- Seale, C., & Silverman, D. (1997). Ensuring rigour in qualitative research. *European Journal of Public Health, 7*, 379-384.
- Seed, A. (1994). Patients to people. *Journal of Advanced Nursing, 19*, 738-748.
- Shanteau, J. (1992a). How much information does an expert use? Is it relevant? *Acta Psychologica, 81*, 75-86.
- Shanteau, J. (1992b). The psychology of experts: an alternative view, *Expertise and decision support* (pp. 11-23). New York: Plenum Press.
- Shelley, S. I., Zahorchak, R. M., & Gambrill, C. D. S. (1987). Aggressiveness of nursing care for older patients and those with do-not-resuscitate orders. *Nursing Research, 36*, 157-162.
- Sherman, J. E., Miller, A. G., Farrand, L. L., & Holzemer, W. L. (1979). A simulated patient encounter for the family nurse practitioner. *Journal of Nursing Education, 18*(5), 5-15.
- Sherrill, C., & Montelione, T. (1990). Prioritizing adapted physical education goals: a pilot study. *Adapted Physical Activity Quarterly, 7*, 355-369.
- Siegel, S., & Castellan, N. J. (1988). *Nonparametric statistics for the behavioral sciences* (International ed.). New York: McGraw-Hill Book Company.
- Silverman, D. (2000). Analyzing talk and text. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp. 821-834). Thousand Oaks: Sage Publications Inc.
- Sim, J., & Sharp, K. (1998). A critical appraisal of the role of triangulation in nursing research. *International Journal of Nursing Studies, 35*, 23-31.
- Smith, K. M. (1996). *Patient controlled analgesia and the assessment and control of pain in a coronary care unit*. Unpublished PhD, University of Abertay Dundee, Dundee.
- Smith, L. (1992). Ethical issues in interviewing. *Journal of Advanced Nursing, 17*, 98-103.

- Someren, v. M. W., Barnard, Y. F., & Sandberg, J. A. C. (1994). *The Think Aloud Method. A practical guide to modelling cognitive processes*. London: Academic Press.
- Spouse, J. (1997). Issues in observing nursing students in clinical practice. *NT Research*, 2(3), 187-196.
- Steckler, A., McLeroy, K. R., Goodman, R. M., Bird, S. T., & McCormick, L. (1992). Toward integrating qualitative and quantitative methods: an introduction. *Health Education Quarterly*, 19(1), 1-8.
- Stewart, C. J., & Cash, W. B. (1994). *Interviewing: principles and practices* (Revised ed.). Madison, Wisconsin: WCB Brown and Benchmark Publishers.
- Stockwell, F. (1972). *The unpopular patient*. London: RCN.
- Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: techniques and procedures for developing grounded theory* (2nd ed.). Thousand Oaks: Sage Publications.
- Svenson, O. (1989). Eliciting and analyzing verbal protocols in process studies of judgement and decision making. In H. Montgomery & O. Svenson (Eds.), *Process and structure in human decision making*. Chichester: John Wiley and Sons.
- Swanson, J. M. (1986). The formal qualitative interview for grounded theory. In W. C. Chenitz & J. M. Swanson (Eds.), *From practice to grounded theory: qualitative research in nursing*. Wokingham, Berkshire: Addison-Wesley.
- Swanwick, M. (1994). Observation as a research method. *Nurse Researcher*, 2(2), 4-12.
- Sweller, J. (1983). Control mechanisms in problem solving. *Memory and Cognition*, 11(1), 32-40.
- Tanner, C. A. (1989). Use of research in clinical judgement. In C. A. Lindeman & C. A. Tanner (Eds.), *Using nursing research* (pp. 19-34). New York: National League for Nursing.

Tanner, C. A., Benner, P., Chesla, C., & Gordon, D. R. (1993). The phenomenology of knowing the patient. *Image: Journal of Nursing Scholarship*, 25(4), 273-280.

Tanner, C. A., Padrick, K. P., Westfall, U. E., & Putzier, D. J. (1987). Diagnostic reasoning strategies of nurses and nursing students. *Nursing Research*, 36, 358-363.

Taylor, C. (1997). Problem solving in clinical nursing practice. *Journal of Advanced Nursing*, 26, 329-336.

Taylor, C. (2000). Clinical problem solving in nursing: insights from the literature. *Journal of Advanced Nursing*, 31(4), 842-849.

Thomas, L. H., & Bond, S. (1990). Towards defining the organisation of nursing care in hospital wards: an empirical study. *Journal of Advanced Nursing*, 15, 1106-1112.

Thompson, C. (1999). Qualitative research into nurse decision making: factors for consideration in theoretical sampling. *Qualitative Health Research*, 9(6), 815-828.

Thompson, C. B., Ryan, S. A., & Kitzman, H. (1990). Expertise: the basis for expert system development. *Advances in Nursing Science*, 13(2), 1-10.

Thompson, D. R., Ersser, S. J., & Webster, R. A. (1995). The experiences of patients and their partners 1 month after a heart attack. *Journal of Advanced Nursing*, 22, 707-714.

Toren, C. (1996). Ethnography: theoretical background. In J. T. E. Richardson (Ed.), *Handbook of qualitative research methods for psychology and the social sciences* (pp. 102-112). Leicester, UK: BPS Books.

Tovey, E. J., & Adams, A. E. (1999). The changing nature of nurses' job satisfaction: an exploration of sources of satisfaction in the 1990s. *Journal of Advanced Nursing*, 30(1), 150-158.

Tschikota, S. (1993). The clinical decision-making processes of student nurses. *Journal of Nursing Education*, 32, 389-398.

Turnock, C. (1987). Clinical Update: task allocation. *Nursing Times*, 83(44), 71.

- Tversky, A., & Kahneman, D. (1974). Judgment under Uncertainty: Heuristics and Biases. *Science*, 185, 1124-1131.
- UK. Department of Health. (1991). *The Patient's Charter*. London: HMSO.
- UKCC. (1986). *Project 2000: a new preparation for practice*. London: UKCC.
- UKCC. (1987). *Confidentiality: an elaboration of clause 9 of the second edition of the UKCC's code of professional conduct for the nurse, midwife and health visitor*. London: United Kingdom Central Council for Nursing, Midwifery and Health Visiting.
- UKCC. (1992). *Code of professional conduct* (3rd ed.). London: United Kingdom Central Council for Nursing, Midwifery and Health Visiting.
- UKCC. (1999). *Fitness for practice: the UKCC commission for nursing and midwifery education*. London: UKCC.
- Wade, N. J., & Swanston, M. (1991). *Visual perception: an introduction*. London: Routledge.
- Wainwright, S. P. (1994). Analysing data using grounded theory. *Nurse Researcher*, 1(3), 43-49.
- Walsh, M. (1997). *Watson's clinical nursing and related sciences* (5th ed.). London: Bailliere Tindall.
- Waterman, H. (1998). Data collection in qualitative research. In B. Roe & C. Webb (Eds.), *Research and development in clinical nursing practice* (pp. 41-58). London: Whurr Publishers Ltd.
- Watson, S. (1991). An analysis of the concept of experience. *Journal of Advanced Nursing*, 16, 1117-1121.
- Watson, S. (1994). An exploratory study into a methodology for the examination of decision making by nurses in the clinical area. *Journal of Advanced Nursing*, 20, 351-360.

White, P. A. (1988). Knowing more about what we can tell: 'Introspective access' and causal report accuracy 10 years later. *British Journal of Psychology*, 79(1), 13-46.

Wietlisbach, V., Vader, J. P., Porchet, F., Costanza, M. C., & Burnand, B. (1999). Statistical approaches in the development of clinical practice guidelines from expert panels. *Medical Care*, 37(8), 785-797.

Williams, A. (1998). Qualitative research: definitions and design. In B. Roe & C. Webb (Eds.), *Research and development in clinical nursing practice* (pp. 21-40). London: Whurr Publishers Ltd.

Wineman, N. M., & Durand, E. (1992). Issues in clinical nursing research: incentives and rewards for subjects in nursing research. *Western Journal of Nursing Research*, 14(4), 526-531.

Woolwich, C. (2000). Nurse Triage. In B. Dolan & L. Holt (Eds.), *Accident and Emergency: theory into practice*. Edinburgh: Bailliere Tindall.

Wright, G., & Bolger, F. (1992). *Expertise and decision support*. New York: Plenum Press.

Zeitz, C. M., & Spoehr, K. T. (1989). Knowledge organisation and the acquisition of procedural expertise. *Applied Cognitive Psychology*, 3, 313-336.

APPENDIX 1

Benner's levels of skill acquisition

Level 1: Novice

Beginners who, because they have no experience with the situations in which they are expected to perform, must depend on rules to guide their actions. Following rules, however, has limits. No rule can tell novices which tasks are most relevant in real situations nor when to make exceptions.

Level 2: Advanced Beginner

One who has coped with enough real situations to note (or have them pointed out by a mentor) the recurrent meaningful aspects of situations. An Advanced beginner needs help setting priorities since she/he operates on general guidelines and is only beginning to perceive recurrent meaningful patterns. The advanced beginner cannot reliably sort out what is most important in complex situations.

Level 3: Competent

Typically, the competent nurse has been in practice two or three years. This nurse can rely on long-range goals and plans to determine which aspects of a situation are important and which can be ignored.

The competent nurse lacks the speed and flexibility of the nurse who has reached the proficient level, but competence is characterised by a feeling of mastery and the ability to cope with and manage many contingencies of clinical nursing.

Level 4: Proficient

One who perceives situations as wholes, rather than in terms of aspects. With holistic understanding, decision-making is less laboured since the nurse has a perspective on which many of the attributes and aspects present are the important ones. The proficient performer considers fewer options and homes in on an accurate region of the problem.

Level 5: Expert

The nurse who no longer relies on an analytical principle (rule, guideline, maxim) to connect an understanding of the situation to an appropriate action. The expert nurse, with an enormous background of experience, has an intuitive grasp of the situation and zeros in on the accurate region of the problem without wasteful considerations of a large range of unfruitful possibilities.

APPENDIX 1a

Simulated caseload (Pilot study)

Fred

Fred is a 71 year old gentleman who was admitted with a diagnosis of Myocardial Infarction. He came up to the ward from Coronary care last night and has had an uneventful stay so far. He has been pain free since admission. Fred is on twice daily recordings that are stable. He is permitted to cross over for a shower under supervision

Observations: Patient resting on bed.

John

John is a 71 year old gentleman who came in with breathlessness and has been diagnosed as having left ventricular failure. He's being started on Captopril for his cardiac failure. John will require half-hourly blood pressure recordings for two hours and to remain on bedrest during this time. He is on twice-daily recordings and daily weights.

Observations: Patient lying on bed; overweight

Peter

Peter is a 46 year old gentleman who's had a cerebro-vascular accident with a right sided weakness. He is aphasic and dysphasic and it is difficult to know what he really does understand. He is improving very, very slowly. His ability to mobilise is poor. He can transfer with one nurse and has quite a good standing balance. He is on daily recordings. He also receives nasogastric feeding overnight.

Observations: Cot sides present on bed but down; spenco mattress in situ; ng feeding in progress

Bill

Bill is a 71 year old man. He is a frail little gentleman who doesn't really eat very much and requires a lot of encouragement. He is known to have chronic obstructive airways disease and came in with an exacerbation of this due to a chest infection. This man can mobilise but is not very keen. He's on twice daily recordings. He is going for an echocardiogram at some point today.

Observations: There is a nebuliser by the bed; the patient is asleep on bed

APPENDIX II

Simulated caseload

Fred

Fred is a 71 year old gentleman who was admitted with a diagnosis of Myocardial Infarction. He came up to the ward from Coronary Care last night and has had an uneventful stay so far. He has been pain free since admission. Fred is on twice daily recordings that are stable. He is permitted to cross over for a shower under supervision.

Observations: Patient resting on bed.

Care required: assist with shower; assess cardiovascular status; inform patient of rehabilitation programme

John

John is a 71 year old gentleman who came in with breathlessness and has been diagnosed as having Left Ventricular Failure. He has had his first dose of Captopril this morning for his cardiac failure. John will require half-hourly blood pressure recordings for two hours, and to remain on bedrest during this time. He is on twice daily recordings and daily weights.

Observations: Patient lying on bed; overweight

Care required: explain need for bed-rest; assist with wash; check Blood Pressure

Peter

Peter is a 46 year old gentleman who's had a cerebro-vascular accident with a right sided weakness. He is aphasic and dysphasic and it is difficult to know what he really does understand. He is improving very, very slowly. His ability to mobilise is poor. He can transfer with one nurse and has quite a good standing balance. He is on daily recordings. He also receives nasogastric feeding overnight.

Observations: Cot sides present on bed but down; spenco mattress in situ; nasogastric feeding in progress

Care required: pressure-area care; assist with bathing; assess comprehension

Bill

James is a 71 year old man. He is a frail gentleman who doesn't really eat very much and requires quite a bit of encouragement. He is known to have Chronic Obstructive Airways Disease and came in with an exacerbation of this due to a chest infection. This man can mobilise but is not very keen. He's on twice daily recordings. He is going for an echocardiogram at some point today.

Observations: There is a nebuliser by the bed; the patient is asleep on bed.

Care required: encourage patient to self-care; explain echocardiogram; assist with washing

APPENDIX III

Letter to nursing students in pilot study

Dear

As part of a study looking at how nurses plan their work when caring for several patients at once, I have been given permission by the Principal to approach you and seek your help. The exercise requires you to spend some time in consideration of a small group of imaginary patients and to describe your actions in response.

Your replies will be treated in the strictest confidence and will only be retained long enough to be analysed; only myself and possibly my supervisors from Dundee Institute of Technology, and Dundee University will see your reply. Thank-you in anticipation.

Yours sincerely

Charles Hendry
Nurse Teacher

APPENDIX IV

Instruction sets for pilot study

Instruction set one

It is 8am and you have just come on duty. You have been allocated the following four patients to care for this shift. The charge nurse gives you a brief report on each of your patients at the start of your shift (see a written copy of these reports below). Please read them carefully. In addition you note the following observations as you introduce yourself to your patients.

Once you are familiar with your allocated patients, try and imagine the care you would provide for the rest of the morning and describe your morning **in as much detail as you can**, saying what you would do.

Instruction set two

It is 8am and you have just come on duty. You have been allocated the following four patients to care for this shift. The charge nurse gives you a brief report on each of your patients at the start of your shift (see a written copy of these reports below). Please read them carefully. In addition you note the following observations as you introduce yourself to your patients.

Once you are familiar with your allocated patients, try and imagine the care you would provide for the rest of the morning and describe your morning **in as much detail as you can**. Try to describe the mornings work in the order in which you think you would actually deliver it, i.e., what you would do **first**, then **second**, then **third** and so on.

APPENDIX V

Vignette response sheet.

Please enter your description of the care you would provide below:

APPENDIX VI

Feedback response sheet

As you are the first participants to use this version of the exercise it would be helpful if you could give me some feedback:

1. How long did it take to complete?

2. Were the explanations clear and easy to follow?

If not, please indicate exactly where they were not clear:-

3. Would these four patients be typical of the allocation you might expect in a real medical ward?

If not, how would the ward allocation differ?

4. Did you feel that there was any information not included which you think should have been in order to plan your care for these patients?

If yes, please indicate the information that was missing.

Any other comments about the format of this exercise:-

APPENDIX VII

Biographical information response sheet

In order to help with the analysis it would be helpful if you could provide the following information: tick as appropriate.

1. **Age:** 20-25 26-30 31-35
 35-40 41-45 46-50
 >50.

2. **Sex:** Male: Female:

3. **Qualifications held/current stage of training, e.g., EN; RGN; RM; Module six etc.**

4. **Type of training, e.g., Wider Basic, Comprehensive; 82 schemes; undergraduate; etc**

5. **If qualified:**

 Year of qualification:

 Time in present post:

 Grade of present post: e.g., D, E, F etc.,

6. **Have you been in continuous employment as a nurse since qualification? If not please give brief detail:**

Thanks for your help.

APPENDIX VIII

TAYSIDE HEALTH BOARD

TAYSIDE COLLEGE OF NURSING AND MIDWIFERY
DUNDEE AND ANGUS DIVISIONS

Ninewells Hospital
Ninewells
DUNDEE
DD1 9SY
Tel. 0382 60111
Fax. 0382 641738

Dr [REDACTED]
Director
Centre for Nursing Studies
Dundee Institute of Technology
Bell Street
DUNDEE
DD1 1HG

Dear Dr [REDACTED]

Charles Hendry — Research Proposal “Clinical Decision Making and the Process of Prioritising Care for Groups of Patients”

I would be grateful if you would convey to the Research Committee my support of Mr. Hendry's research proposal. I am pleased to see that the choice of topic is one which is relevant to nurse education.

As yet I have had no indication from Mr. Hendry as to the likely costs involved to the College but I would be prepared to support him both financially and with study leave allocation within reason.

Should you require any further details, I would be happy to provide them.

Yours sincerely

[REDACTED]
Principal

APPENDIX IX

Vignette response grid.

Having introduced yourself to your patients you set about planning their care for the rest of the morning. Whilst you will almost certainly identify many more items of care for each patient than are listed, **three items are provided for you** to allow you to describe the order in which you would provide care for your patients.

Please indicate what you would do **first**, then **second**, then **third** and so on, (**up to twelfth**) by marking the patient's name and the item of care at the appropriate position in the Response grid below. Select each item **only** once.

Response Grid.

Order of care	Patient's name	Item of care	For analysis only
First			
Second			
Third			
Fourth			
Fifth			
Sixth			
Seventh			
Eighth			
Ninth			
Tenth			
Eleventh			
Twelfth			

APPENDIX X

Vignette response grid (specimen).

Having introduced yourself to your patients you set about planning their care for the rest of the morning. Whilst you will almost certainly identify many more items of care for each patient than are listed, three items are provided for you to allow you to describe the order in which you would provide care for your patients.

Please indicate what you would do **first**, then **second**, then **third** and so on, (**up to twelfth**) by marking the patient's name and the item of care at the appropriate position in the grid on page 3.

For example: if you would give Bill his wash first, then check John's Blood Pressure, after which you would see to Peter's Pressure area care, before returning to Bill to explain his echocardiogram then you would enter this on the grid as :-

Order of care	Patient's name	Item of care	For analysis only
First	Bill	help with wash	
Second	John	check blood pressure	
Third	Peter	give pressure area care	
Fourth	Bill	explain echocardiogram	

Specimen Grid

APPENDIX XI

Simulated case-load with lay definition of terms.

It is 8am and you have just come on duty. You have been allocated four patients to care for this shift. The charge nurse gives you a brief report on each of your patients (see a written copy of these reports below). In addition you note a number of observations as you introduce yourself to your patients. Please read the information on each patient carefully, and then follow the instructions on page 2.

Bill

Bill is a 71 year old man. He is a frail gentleman who doesn't really eat very much and requires quite a bit of encouragement. He is known to have Chronic Obstructive Airways Disease (a breathing disorder) and came in with an exacerbation of this due to a chest infection. This man can mobilise but is not very keen. He's on twice daily recordings of temperature, pulse and blood pressure. He is going for an echocardiogram (a non-invasive heart investigation) at some point today.

Observations: There is a nebuliser (an inhaler) by the bed; the patient is asleep on bed.

Care required: explain echocardiogram; encourage patient to self-care; assist with washing

John

John is a 71 year old gentleman who came in with breathlessness and has been diagnosed as having Left Ventricular Failure (a type of heart failure). He has had his first dose of Captopril (a drug which lowers blood pressure) this morning for his heart failure. John will require half-hourly blood pressure recordings for two hours, and to remain on bedrest during this time. He is on twice daily recordings of temperature, pulse and blood pressure and daily weights.

Observations: Patient lying on bed; overweight

Care required: assist with wash; explain need for bed-rest; check Blood Pressure

Fred

Fred is a 71 year old gentleman who was admitted with a diagnosis of Myocardial Infarction (heart attack). He came up to the ward from Coronary Care last night and has had an uneventful stay so far. He has been pain free since admission. Fred is on twice daily recordings of temperature, pulse and blood pressure that are stable. He is permitted to cross over for a shower under supervision.

Observations: Patient resting on bed.

Care required: assess cardiovascular status (by measuring pulse and blood pressure); assist with shower; inform patient of rehabilitation programme

Peter

Peter is a 46 year old gentleman who's had a cerebro-vascular accident (also known as a 'stroke') with a right sided weakness. He is aphasic and dysphasic (a problem with speaking and understanding speech) and it is difficult to know what he really does understand. He is improving very, very slowly. His ability to mobilise is poor. He can transfer from bed to chair with one nurse and has quite a good standing balance. He is on daily recordings of temperature, pulse and blood pressure. He also receives nasogastric feeding (an automated form of feeding which does not restrict the patients movements) overnight.

Observations: Cot sides present on bed but down; spenco mattress (a special mattress to relieve pressure); nasogastric feeding in progress

Care required: assist with bathing; pressure-area care; assess comprehension

APPENDIX XII

Letter to behavioural science students.

Dear student,

As part of a study looking at how nurses plan their work when caring for several patients at once, I have been given permission by your course leader to approach you and seek your help. The exercise requires you to spend about 15-20 minutes in consideration of a small group of imaginary patients and to describe your actions in response.

I would suggest that you read through the exercise once in order to familiarise yourself with the layout and what you have to do before attempting the exercise proper. There are no 'right' or 'wrong' answers and what I am interested in is how you would plan your work. Once you have completed the exercise, please return it by either, placing it in an envelope, which will be located on Dr. Di Domenico's door at room 5014, or alternatively, you can return the questionnaire directly to her during next weeks lesson.

Your replies will be treated in the strictest confidence and will be retained only long enough to be analysed; only myself and possibly my supervisors from Dundee Institute of Technology and Leeds University will see your reply. Thank-you in anticipation.

Yours sincerely

Charles Hendry
Nurse Teacher



TAYSIDE HEALTH BOARD

DUNDEE GENERAL HOSPITALS UNIT

Your Ref.

JR/JBB

Our Ref.

[REDACTED]

Enquiries to:-

Ninewells Hospital and Medical School

Ninewells Dundee DD1 9SY

Telephone 0382 60111

20 January 1992

Mr. [REDACTED]
[REDACTED]
[REDACTED]

Dear Mr. Hendry,

**CLINICAL DECISION-MAKING AND THE PROCESS OF
PRIORITISING CARE FOR MORE THAN ONE PATIENT**

Further to our meeting of 13 January 1992 on the matter of your proposed topic of research. I am writing to confirm my agreement to collaborate and support the project.

I also confirm that I will arrange for you to have access to wards and trained nurses for the purposes of observation and interview.

Yours sincerely,

Director of Nursing
Dundee General Hospitals Unit

APPENDIX XIV

Letter to trained nurses inviting their participation.

Dear colleague,

As part of a study looking at how nurses plan their work when caring for several patients at once, I have been given permission by [REDACTED] to approach you and seek your help. The exercise requires you to spend about 15-20 minutes in consideration of a small group of imaginary patients and to describe your actions in response.

I would suggest that you read through the exercise once in order to familiarise yourself with the layout and what you have to do before attempting the exercise proper. There are no 'right' or 'wrong' answers and what I am interested in is how you would plan your work. Once you have completed the exercise, please return it in the envelope provided.

Your replies will be treated in the strictest confidence and will be retained only long enough to be analysed; only myself and possibly my supervisors from Dundee Institute of Technology and Dundee University will see your reply. Thank-you in anticipation.

Yours sincerely

Charles Hendry
Nurse Teacher

APPENDIX XV

Letter to nursing students inviting their participation.

Dear student,

As part of a study looking at how nurses plan their work when caring for several patients at once, I have been given permission by the Principal to approach you and seek your help. The exercise requires you to spend about 15-20 minutes in consideration of a small group of imaginary patients and to describe your actions in response.

There are no 'right' or 'wrong' answers and what I am interested in is how you would plan your work.

Your replies will be treated in the strictest confidence and will be retained only long enough to be analysed; only myself and possibly my supervisors from the University of Abertay and Leeds University will see your reply. Thank-you in anticipation.

Yours sincerely

Charles Hendry
Nurse Teacher

APPENDIX XVI

Reminder letter to participants in study regarding completion of exercise.

Dear

The reason I am writing to you is in respect of a short questionnaire which I gave to you within the last few weeks. This questionnaire was part of a study that I am undertaking which is looking at how nurses plan their work when caring for several patients at once.

As I do not appear to have had a response from you I thought that I would write once again to ask for your help. Your response is very important and whilst I realise that you are busy it should take no more than about 20 minutes to complete.

There are no 'right' or 'wrong' answers and what I am interested in is how you would plan your work. Once you have completed the exercise, please return it in the envelope provided.

Your replies will be treated in the strictest confidence and will be retained only long enough to be analysed; only myself and possibly my supervisors from Dundee Institute of Technology and Dundee University will see your reply. Thank-you in anticipation.

If your reply is already in the post then please ignore this reminder.

Yours sincerely

Charles Hendry
Nurse Teacher

APPENDIX XVII

Coding grid for simulated exercise.

Fred (patient 1)

- Care required:
- a) assist with shower
 - b) assess cardiovascular status
 - c) inform patient of rehabilitation programme

John (patient 2)

- Care required:
- a) explain need for bed-rest
 - b) assist with wash
 - c) check Blood Pressure

Peter (patient 3)

- Care required
- a) pressure-area care
 - b) assist with bathing
 - c) assess comprehension

Bill (patient 4)

- Care required
- a) encourage patient to self-care
 - b) explain echocardiogram
 - c) assist with washing

APPENDIX XVIII

Practice exercises for think-aloud method

PRACTICE EXERCISE 1 :

Try and solve the following puzzle in which numbers are represented by letters of the alphabet.

$$\begin{array}{r} \text{DONALD} \\ + \text{GERALD} \\ \hline \text{ROBERT} \end{array}$$

You know the following:

- 1) D=5
- 2) every number from 0-9 has a corresponding letter
- 3) each letter must be assigned a number different from that given for any other letter.

Remember, as you try and solve the puzzle think-aloud, indicating what you are doing.

PRACTICE EXERCISE 2 :

A farmer is taking his dog, a duck and a sack of corn to market. In order to get there he has to cross a river. His boat can only carry himself and one other item at a time. However he has a problem as he must not leave the dog alone with the duck or the dog will eat the duck. Neither can he leave the duck alone with the corn or the duck will eat the corn.

How can the farmer ferry his dog, the duck and the sack of corn safely across the river?

APPENDIX XIX

Interview guide

- Q1. When you were attempting to place the twelve items of care in order, what were you trying to achieve?
- Q2. Is there any other information that you would have wanted/sought if this were a real rather than an imaginary caseload?
- Q3. How confident were you that the order you placed the twelve items of care in was the best order?
- Q4. When you have a group of patients requiring a number of different things done for them, and knowing that you can't do all these things at the same time, what criteria do you use to choose between things?
- Q5. To what extent does the medical diagnosis influence your choosing?
- Q6. In your clinical placements/area, there may be times when your plan of work is disrupted for some reason. Can you identify some examples of things that may disrupt your plan of work?
- Q7. When your plan of work is disrupted what do you do?

APPENDIX XX

Instructions for expert panels

Thank you for agreeing to help me in my research. Your responses are much appreciated and be assured that they are completely confidential.

Benner (1984) describes five levels of skill acquisition through which nurses progress, from that of novice, to expert. Listed below, are the characteristics that Benner attributes to each of these five levels of expertise.

In my research, subjects at different levels were asked to order a variety of patient care activities and to describe what they were doing as they did so. I would ask that you read through Benner's descriptions of the various levels several times, and then, reading each of the enclosed responses in turn, decide which level you think the respondent was functioning at.

The responses have been presented to you randomly so that the first may not represent the most junior nurse, nor is the last necessarily the most senior. When you have decided which level a particular response is best represented by, please **justify** your response.

It would be helpful also if you could provide the following information:

1. What qualifications do you hold?
2. What is your current grade?
3. How long have you been at this grade?
4. How long have you been nursing? (If you have worked part-time, please convert this into whole time equivalents, e.g., four years at 18 hrs/week is equivalent to 2 years full-time).

Please return to my pigeon hole or return in the envelope provided.

Again, many thanks.

Yours sincerely

Charles Hendry
Nurse Teacher (part-time research student)
Tayside College of Nursing and Midwifery
Ninewells Hospital
Dundee
tel. [REDACTED]

Example of think-aloud report

I think I would probably start off with ehm, I think when I came on duty I would quickly go round all the patients... is this... have I introduced myself already? Fine, I think I would then go to John, and ehm, I SHORT PAUSE would check his blood pressure and at the same time as doing his blood pressure I would ehm, (to researcher-do I have to put that as second?)

R-Bracket them together if you want.

I would take his blood pressure and advise him ehm, that he needed to stay on bed-rest meantime until his blood pressure stabilised, so therefore the necessity for a wash wouldn't be a priority just now. I would advise him that that could be done at another point in the day. So I would check his blood pressure and explain the need for bed-rest. Ehm, I then would go to Peter and I would check that he was comfortable and carry out pressure area care, ehm, SHORT PAUSE probably, ehm, I'd probably actually do all his care at the same time so that I had time to ehm, assess his comprehension as well, so I'd probably do assist with bathing and assess comprehension, right. I then, I think, would go to Bill and I would ehm, encourage... well, I think I would explain his echocardiogram just now as it doesn't seem to have a time, but I would be keen that he actually knew what he was going for-so I'd go to Bill and explain his echo so that he at least knew what that was, ehm, SHORT PAUSE, I would then SHORT PAUSE, I think I'd probably encourage, well, I would assist him to wash, encouraging self-care and then Fred, who seems to be fairly well. I would probably just go over and assess his cardiovascular status and assist him with his shower and while I was assisting him with his shower I would discuss the rehab programme. Ehm, quickly look over what I've done PAUSE now, in fact, do you want me to just put them a bit more in twelve points, 'cause I'd be able to if you wanted me to.

R-yes, if you feel....

Ehm, let me just think... I think I've done it in the order I feel... ehm, explain the echo... OK, that's what I would do, Ehm, SHORT PAUSE have you got another sheet, no... can I just...

R-just write it at the side if you like.

OK. Check BP. ehm, PAUSE ehm, (subject writing) explain need for bedrest, the third thing.... right Peter, I would then, I said, third, pressure area care, bathing, and assess comprehension. OK then I went to Bill and explained his echo and also assist with washing, encouraging self-care, Fred, who's resting on bed, painfree, recordings are stable, I would assist him to shower...I'll assess his cardiovascular status first, assist with shower, discuss rehab programme. OK?

R-yes, are you happy with that?

Ehm, PAUSE ehm, I'm happy with that.

Example of interview transcript

R-When you were placing these things in order-when you had the twelve items of care that you had to place in order what were you trying to achieve; what did you have in your mind that you were trying to...

Well, I wanted to ehm, do the things that were a priority and very important first. Ehm, so I wanted to prioritise my care and I also wanted to sort of ehm, SHORT PAUSE ehm, do you want me to specifically say, or just generally..

R-just generally, really

Right, I just wanted to prioritise my care and care for the patients that probably will... less well and able to do so first.

R-OK.

Ehm, although, in between, I wanted to make sure that patients were actually informed about certain things, ehm,...mm-hm.

R-You said that you would prioritise the important things first

mm-hm.

R-can I ask for some examples of what would be an important thing?

Ehm, Well, OK, well, I felt that checking the blood pressure, ehm, while checking John's blood pressure because he was on Captopril... I mean I feel that's quite important and that was a priority because of the potential of hypotension and the fact that he might not have been told that he shouldn't have been moving and he might have got up and moved and therefore collapsed or something like that, so I felt that was a priority. Ehm, I suppose niggling in the back of my mind was ehm, Bill who'd had an MI... his cardiovascular status, but I felt because it had stated that he was stable and that he was pain free, that I felt that he wasn't actually ehm, that much, well, he was actually a priority but I felt that I could have probably ehm, he probably would have been all right till I'd dealt with ehm, other problems.

R-You've given me some examples of what might be important-what is it about a thing that makes it important? Why are some things important to do and others can wait?

Because there's obviously a potential of something, ehm, SHORT PAUSE the potential of the abnormal, I suppose. Ehm, why can some things.... (subject laughs)

R-Would you say that things that you regard as being high priority are things that if they weren't done carry some kind of risk for the patient?

Yes.

R-OK.

mm-hm, absolutely, I mean John was at risk of hypotension and collapsing I suppose if he got up, if he hadn't, wasn't aware of sort of, what Captopril could do.

R-OK. If this were your real caseload rather than just an imaginary one, if you were really having to look after these patients at the beginning of this shift would there have been any other information that you would have sought out, asked about, or would have liked to have.

Mm-hm. I would have liked to know when this gentleman had last been turned, ehm, I would SHORT PAUSE, Ehm, probably, what else would I have liked ehm-I probably would like to

APPENDIX XXII

have known actually, how at risk John was of pressure areas as well, ehm, PAUSE, I would probably have liked to know if Fred had been mobile or not

R-mm-hm

Ehm, PAUSE ehm, PAUSE ehm, no I think I probably would have coped with that

R-Can I ask how confident are you that the order you placed these twelve items of care in was the best order?

Ehm, SHORT PAUSE what on a scale of.....

R-well, if you like, if we said zero was no confidence to ten was certain confidence

I think I would be SHORT PAUSE an eight or a nine, quite confident

R-OK. In your normal work would you, how would you say, how confident generally are you about your prioritising?

Ehm, fairly...I would say I was confident now.

R-OK, good. When you've got a group of patients for real, who need different things done for them, and you know you can't do them all at the same time, it's just not possible-what criteria do you use to decide what to do?

Ehm, I think a lot depends on how ill the patient is, how unwell the patient is, ehm, I would tend to care for those that are 'ill-er' first, ehm, so that I'm able to make a general assessment of how they are actually doing, and do all their care including observations and everything like that so that I'd be able to have some baseline of how they were. I would tend to leave the patients who were fairly stable, maybe starting to mobilise, who were, the likes of Fred who were painfree and stable, ehm, to later on, feeling quite confident that that's OK to leave that till later-but I would certainly try and prioritise my care to the ill-er patients and those are maybe unconscious or requiring pressure area care in four.

R-Are you suggesting that so you can gather more information about how they are-you said something about

Mm-hm, I think I quite like to come on shift and sort of do an assessment of everything at once-if I went and did, say take somebody's NG tube and then went and did something else and then came back and did their BM stix, or...if I tend to do things in bits and bobs then I tend to get very mixed up and end up forgetting things and not really getting a true picture of how the patient really is. So I do prefer to go and do a patients all their care at once so that I can tie everything together-I seem to be able to work things out better that way.

R-Is that always possible to do in that way, all of one patient and then all of another and then all of someone else, or...I mean that's what you prefer to do if you can..

Mm-hm-is it always possible?

R-How often do you achieve that?

Ehm, I know, its something I feel quite strongly about actually, so I would say I tend to achieve it often ehm, having said that, I would be working, often I 'm working with somebody who'd be able to carry out the tasks that I need not be there for, in particular to make an assessment about something, so I might leave the nurse or whoever with that patient till I go and dealt with...you know, till I dealt with something more pressing until I came back, but I'd still try and care for one patient... I do prefer to do it that way.

R-OK. To what extent does their medical diagnosis influence your decisions?

APPENDIX XXII

Ehm, PAUSE, I its fairly impor... I think it is important ehm, SHORT PAUSE obviously if you have an acutely ill patient its very important, but coming on each shift I would say its not the priority.

R-Are you...I don't want to put words in your mouth...but are you suggesting that the nursing care that patients require may sometimes be influenced a lot by their medical condition, but equally the nursing care that a patient requires might not depend...

Absolutely, yes. I can totally agree, I can say, I mean an acutely ill patient ehm, their medical diagnosis is very important because you've got to make certain observations which are very important, but when I come on duty I do not think of all the patients diagnosis and prioritise my care depending on their diagnosis, it's actually the nursing care...

R-that they require which may or may not be influenced by...

Yes, that's... yes.

R-OK. Good. There must be times when you are working in the ward and you have a plan of work which is disrupted. Can you give me some examples of things which disrupt your plans.

Ehm, I think, especially in the ward we're in just now, that I'm in just now I think ehm, PAUSE lack of staff probably disrupts it actually because the way the primary nursing works here you need a certain amount of trained nurses to take certain patients so I think if there's not enough trained staff on you tend to be looking after patients which you are not usually looking after which then, you don't get stressed out about it, but you are aware that you don't know them as well and you don't exactly know how they are doing and you're dealing with relatives and you don't really know ehm, all the details about the patient... that would be one thing-lots of things happen, I mean ehm, I think patients getting ill all of a sudden, acutely ill patients can put everything off; a lot of patients needing to go someplace at the same time that require escorts put everything to pot....ehm, what else...ehm, say relatives that aren't happy about something that require your attention, ehm, that kind of thing..

R-Can I ask, when your work plan is disrupted, lets say by a relative asking to speak to you or a phone call, what happens to your plan?

Well, I think ehm, what I would do then is...well, it disrupts your plan but what I think you have to do then is, then further prioritise what is important and leave, like say last night, I ended up having nothing to do with the computer, knowing fine well that it is still a legal document and you have to admit them but you can't possibly do it until you stay here until eleven o'clock....so last night I had decided in my mind that I would say out with the computer so that I could, you know, slot in something that....

R-so you can reassess your priorities and adjust or make a new....

Mm-hm..

R-One last thing, XXXX, really, when you come on an early shift how far ahead do you plan? Do you plan right to the end of the shift, do you plan to dinnertime, do you plan to the break or...how far ahead do you plan?

I probably plan actually to the end of my shift, ehm, absolutely, yes. I would plan certainly till I went home, the time I was to go home. Ehm, because I feel that you need all that time to carry out the requirements of that shift.

R-I've just told you a lie, because I've got one more question now because of what you've said

That's OK

R-In the ward you're working on Primary Nursing... do you sometimes find yourself working to a much longer plan, timetable... maybe several days or more?

APPENDIX XXII

Ehm, SHORT PAUSE, Yes I think you do, I think Primary Nursing ehm, does actually make you plan days ahead and makes you think about things at home, ensuring things that are all worked out. I think you do tend.....

R-It's just that I've never asked that question before-it's just that you had drawn my attention to the way in which Ward X is organised and I wondered if that made planning even more complicated or....

Well, I think it does actually, because you really are responsible, it's not as if you've got somebody coming behind you saying 'have you ordered that ambulance', 'have you done this', you are responsible for those patients and if its not done then you're not...so you sometimes go home, or you think I must do that tomorrow or I must do that on Wednesday because I have to do that before Thursday, I must order the pills, you know, you just sort of go..

R-Well, that's everything I need so thank-you very much.

APPENDIX XXIII

Letter to Secretary of Local Research Ethics Committee.

Mr. [REDACTED]
Secretary
Committee on Medical Research Ethics

Dear [REDACTED]

You may recall that we spoke several weeks ago regarding my research. At that time you did not feel that the nature of my research required the approval of the Ethics Committee, but you suggested that I drop you a note indicating my area of interest and my proposed plan of work.

I am currently a nursing lecturer in the newly-formed School of Nursing and Midwifery of the University of Dundee, and am also a part-time PhD student of the University of Abertay, Dundee. My research has been carried out with the collaboration of Tayside College of Nursing and Midwifery (as was) and Dundee Teaching Hospitals.

The title of my research is:

Clinical decision-making and the process of prioritising care for more than one patient: a comparison of learner and trained nurses.

Up to this point I have employed a number of different research methods to investigate this activity in relation to a simulated case-load. However, a concern with simulations is that what people say they will do may not necessarily reflect what they would do in actual practice. It is therefore imperative that the final phase of my research follows learner and trained nurses within a clinical setting as they plan their work.

The subjects of my research will be five 'paired' sets, each set comprising a senior staff nurse and a junior student. Miss. [REDACTED], Director of Nursing, Dundee Teaching Hospitals, has previously confirmed that she would be willing to grant me access to wards and trained nurses for the purposes of observation and interview. Similarly, Prof. [REDACTED], Dean, School of Nursing and Midwifery has also agreed that I could have access to student nurses of the School.

I intend to use a combination of methods to gather data about priority setting in practice, and factors that may interfere with this;

1. Think aloud method. Subjects will be asked to 'think out loud' their planning activities at three points in the course of a period of observation. This will be out of 'earshot' of patients and should prevent any potential problems of confidentiality.

APPENDIX XXIII

2. Observation. I will adopt the role of 'observer as participant' in order to identify extraneous variables which may affect the implementation of the planned work.
3. Interview. Following the final period of observation and think aloud, I will conduct a semi-structured interview of each 'pair' of subjects.

The data collection will take place over a two week period beginning 27th January 1997. Previous work suggests that the above methods of data collection do not interfere, in any way, with the functioning of the nurse and the delivery of patient care. This data will be transcribed and analysed by myself, thus providing a further mechanism for ensuring patient confidentiality. I would also like to record patient dependency scores, and minimal biographical patient information, i.e., age, gender and reason for admission.

I trust this is the information you require, however, if you do need clarification of any kind then do not hesitate to get in touch.

I look forward to hearing from you.

Yours sincerely

Charles Hendry
Nursing Lecturer

Tayside Committee on Medical Research Ethics

Mr Charles Hendry
Nursing Lecturer
School of Nursing & Midwifery
Ninewells
DUNDEE

East Day Home
King's Cross Hospital
Clepington Road
Dundee
DD3 8EA
Tel: 01382 660111
Fax: 01382 816178

27th November 1996

Enquiries to: Mr [REDACTED]
Extension No: [REDACTED]

Dear Mr Hendry

Clinical decision making and the process of prioritising care for more than one patient: a comparison of learner and trained nurses

I refer to your letter of 18 November 1996 and am pleased to advise that this does not require Ethics Committee approval.

May I wish you success.

Yours sincerely

[REDACTED]

[REDACTED]
Secretary

Members [REDACTED]

APPENDIX XXV

Letter to Clinical Nurse Manager informing her of proposed study

Miss
Clinical Nurse Manager
Medical Directorate

Dear Miss

As you may recall, I have been pursuing a part-time PhD over the last few years, and have in the past conducted a questionnaire type study in which first-level nurses from wards 1-6, Ninewells participated. I am now in the final stages of data collection for my PhD and this requires that I attempt to study the process of planning care and the factors which influence it, in the clinical setting, as opposed to simulated care-planning. I am particularly interested in how decisions are made as to what constitutes a priority when looking after several patients, and in comparing these decisions in learner and trained nurses.

At the outset of my studies, Miss N (Director of Nursing) agreed that it would be acceptable for me to have access to wards and staff for the purposes of observation and interview, and it is in this regard that I am writing. The 'subjects' of my research will be five 'paired' sets, each set comprising a senior staff nurse and a junior student. This phase of my work consists of the following

1. **Think aloud method.** Participants will be asked to 'think out loud' their planning activities at three specified points on three separate shifts. This will be out of 'earshot' of patients and should prevent any potential problems of confidentiality.
2. **Observation.** I will adopt the role of 'observer as participant' in order to identify extraneous variables which may affect the implementation of the planned work.
3. **Interview.** Following the final period of observation and think aloud, I will conduct a semi-structured interview of each 'pair' of participants.

I hope to recruit senior staff nurses from medical wards in Ninewells, and to match them with a junior student (term three) who will be on placement at the time of data collection, that is, the week beginning 27th. January 1997. Previous work suggests that the above methods of data collection do not interfere, in any way, with the functioning of the nurse and the delivery of patient care. Indeed, following the final joint interview, participants will hopefully see it as a useful learning exercise as they discuss with me, and with one another, this important aspect of planning care.

I hope the above meets with your approval; if so, would it be in order for me to approach the Senior Charge Nurses in the wards concerned to discuss my needs with them? I am not sure which wards at the time of writing, as I am waiting on Allocations confirming the presence of students at the time of data collection! If you feel you need any further clarification then please do not hesitate to get in touch.

Yours sincerely

Charles Hendry
Nursing Lecturer

APPENDIX XXVI

Letter to Senior Charge Nurses informing them of proposed study

Dear

As you may be aware, I have been carrying out research into priority setting in learner and trained nurses. The final phase of my research will take place in selected wards in the Medical Floor of Ninewells Hospital, for a period of three weeks, beginning 27th January 1997. Data collection will involve the following three methods of data collection, i) think-aloud, ii) observation, and iii) interview. Miss N (Director of Nursing, Miss N (CNM) and Prof. N (Dean of School of Nursing & Midwifery) have given this research their support and approval.

The 'subjects' will be paired, i.e., a term three student nurse will work with an 'E' grade staff nurse. The data from each 'pair' will be collected over three shifts only. At the beginning of each shift, after report, I will ask the staff nurse and then the student, to 'think-out loud' their thoughts and plans with regards to their case-loads for that shift. They will do this out of 'ear shot' of patients, and of one another. This think-aloud will be repeated again after first break and after meal break. I anticipate this taking approximately 5-15 minutes on each occasion.

At other times I will be observing the 'pair' as they go about their work. In particular I will be trying to identify any events or occurrences which appear to help or hinder their work.

After the final period of data collection, i.e., after the third shift, I will carry out a short interview with both staff nurse and student to reflect on their experiences of the previous observation periods. This interview will last approximately 30 minutes.

If you have any further queries then please do not hesitate to contact me. Once the research is complete I will endeavour to provide you with a summary of the research findings from this phase of the study.

Yours sincerely

Charles Hendry
Nursing Lecturer/PhD student

APPENDIX XXVII

Letter to all participants in clinical study requesting their assistance.

Dear

Following our informal discussion of you would be willing to participate in my research study. As I explained, your participation in the study would involve your 'thinking out loud' your patient care planning, on three occasions during your shift. Also during your shift I would observe you and your preceptor/student to determine those elements of the ward environment which may help or hinder the delivery of your proposed plan. These two elements of the study will be repeated over three separate shifts. After the final period of observation there will be a brief interview at which both student and staff-nurse will be present to discuss their experiences during the observation period.

My research has the support of Prof. N (School of Nursing), Miss N (Director of Nursing) and Miss N (Clinical Nurse Manager).

As I also explained previously, your participation in this study is voluntary, and all information which comes into my possession as a result of this study will remain strictly confidential. Should you agree to participate in the study then I will endeavour to provide you with a summary of the findings from this part of the project at a future date.

To save on your time and trouble, I will assume that if you do not contact me to say that you no longer feel able to participate, then you remain happy to do so.

Once again, many thanks.

Yours sincerely

Charles Hendry
Nursing Lecturer/PhD student

APPENDIX XXVIII

Letter to senior staff nurses in clinical study

Dear

Thank you for agreeing to participate in the above research. The student who will be working with you for the period of my research is NN. The dates that I will be present in the ward to complete the study will be **6th Feb (L), 12th Feb. (L), and 13th Feb (E)**. These dates were selected from your Off-Duty and I would ask that if they have changed for any reason, that you let me know as soon as possible. As I am sure you can appreciate a change has knock-on effects, and trying to co-ordinate five sets of Off-Duty across four wards is fairly difficult. I will arrive on the ward 15 minutes before your shift begins.

I will also visit you on the ward sometime on the **3rd February** to give you some **practice** in the Think-aloud component of the exercise. I have spoken to NN and she is happy to follow your Off-Duty on these four days.

If you have any questions or concerns then please do not hesitate to contact me.

Looking forward to seeing you.

Yours sincerely

Charles Hendry
Nursing Lecturer/PhD student

APPENDIX XXIX

SCHOOL OF NURSING AND MIDWIFERY

UNIVERSITY OF DUNDEE

MEMORANDUM

TO: **FROM: Charles Hendry**
DATE: **REF:**
SUBJECT: LINK TEACHING

Dear Link Teacher,

I have permission from Prof. NN and Miss NN to conduct the final part of my research involving staff nurses and students, within the medical unit of Ninewells Hospital. I will be in the wards on the following dates and I would ask if you could refrain from visiting your wards on the dates concerned.

Ward X 31st Jan, 3rd Feb, 5th Feb, 6th Feb, 7th Feb, 12th Feb, 13th Feb.

Many thanks for your co-operation.

Charles Hendry
Nursing Lecturer

APPENDIX XXX

Activity Chart

Date:	Start time:	End time:					Coding Categories	
Obs.no	Event type	Initiated by	Involving	How long	Comments	Events:		
1						Patient care	E1	
2						Telephone call	E2	
3						Unexpected/emergency	E3	
4						Other Interruptions	E4	
5						Technical	E5	
6						Administration	E6	
7						Other	E7	
8						Who: Subject	W1	
9						Auxiliary	W2:1	
10						Student	W2:2	
11						Peer	W2:3	
12						Manager	W2:4	
13						Own Patient	W3	
14						Other patient	W4	
15						Doctor	W5	
16						Paramedical staff	W6	
17						Relative	W7	
18						Other	W8	
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								
32								
33								
34								
35								
36								
37								
38								
39								
40								

APPENDIX XXXI

Interview guide (clinical study)

1. In prioritising the care you gave your patients what were you trying to achieve?
2. How confident were you about your prioritising?
3. What criteria do you use to decide what to do next?
4. How important is the medical diagnosis in prioritising nursing care?
5. How do you manage disruptions/interruptions to your plan of work?
6. How do you think that your skill in prioritising has changed/will change over time?
7. How important is this skill to being a proficient nurse? Why?
8. How could learners be helped to develop this skill?

Questions about Think-aloud and Observation study.

APPENDIX XXXII

Medical Diagnoses.

Alcohol withdrawal
Anaemia
Angina
Bacterial Endocarditis
Bowel polyps
CABG
Carcinoma and metastases
Cerebro-vascular Accident
Chest Infection
Chest Pain
Chronic Back pain
Chronic Obstructive Airways Disease
Confusion
Congestive cardiac failure
Deep Vein Thrombosis
Drug reaction
General Debility
Grand-mal seizures
Haematemesis
Low haemoglobin
Melaena
Mitral Valve replacement
MRSA
Multi-infarct dementia
Myocardial Infarction
Nausea and vomiting
Necrotic (L) hand
Pleural Effusion
Pleuritis
Pneumonia
Post- VF arrest
Raynaud's disease
Removal of Tenckhoff catheter
Shoguns disease
Transient Ischaemic Attacks
Unstable Angina
Urinary Tract Infection
Vascular complaint
Ventricular Tachycardia
Vomiting

APPENDIX XXXIII

Think aloud analysis – Coding framework

Category	Code
----------	------

Cognitive processes:	
Prioritising: any indication that the respondent is considering the temporal relationship of an action to other actions	AP
Considering options: reviewing alternative actions which may be possible or desirable	CO
Deciding: indicating a commitment to a particular, or specific course of action	DN
Describing: an element of the think aloud report which describes some aspect or feature related to a patient, a task, or the environment	DB
Reviewing: a reflection on the current state of information, or stage of planning during the course of the think aloud reporting	RW
Justifying: any indication of an attempt to explain, rationalise, or justify any specified course of action	JY

Planning goals:	
Administer drugs: any action involved in the preparation or administration of a drug to a patient	DA
Administration: actions associated with administrative tasks, e.g., writing or updating patients records	Am
Assessment: reviewing or collecting information regarding a patient in subjects care	A
Communication: any giving of information, or strategy for acquiring information, deemed by the respondent to be an aspect of her role	C
Direct care: any action of physical or psychosocial care give directly by the respondent to a patient	DC
Managing work: any action which has as its goal managing or organising self, others, or some other activity	MW
Supervision: any action requiring supervision or teaching of a student or peer	S

Factors which may be taken into account when completing planning task:	
Barriers/facilitators: any factor which may be considered to impede or assist with the construction and implementation of the proposed plan	BF
Dependency: extent to which patient is dependent/independent of carers	DY
Experience: any reference to level of experience, skill or expertise	EX
Knowing patient: familiarity with patient	KP
Personal characteristics of patient:	PC
Severity of illness: any indication that the patients medical condition is taken into account during the think aloud report	Ill
Time: any action which is in whole or in part, time determined, time dependent, or determined by ward routine	Tm
Miscellaneous	M

APPENDIX XXXIV

Example of think-aloud report

Day 2 - 5th February 1997

Early Shift

Junior student

Right, ehm, first of all do the drugs... also got to arrange with ward two because we've got to go and speak to the new doctors at two points during the morning and try and see which one they want to do ehm.... then JS, I'll have to sort out all his paperwork because he came from ward three last night and he's not been really admitted here, JMC's not too bad, HG, just... she's not needing anything special this morning I don't think.... just going to help her with her washes.. whatever, ehm, MB, he's quite ill I think so I'll just go and see him, ehm, and he's needing admitted.. I'll have to do that this morning, do his care plans, JM, cancel his Lithium clinic appointment and I think MD's just going to help B (another SN) just now until I get the drugs finished... right, and that's as far as I've got

APPENDIX XXXV

Mann-Whitney U test comparing verbal protocols of senior staff nurses and nursing students.

	LEVEL	N	U	p (2-tailed)
Prioritising	staff nurse	5	3	.056
	student	5		
Considering options	staff nurse	5	10.5	.690
	student	5		
Deciding	staff nurse	5	1	.016
	student	5		
Describing	staff nurse	5	1	.016
	student	5		
Reviewing work	staff nurse	5	6	.222
	student	5		
Justifying actions	staff nurse	5	11.5	.841
	student	5		
Drug administration	staff nurse	5	4	.095
	student	5		
Administration	staff nurse	5	1.5	.016
	student	5		
Assessment	staff nurse	5	11	.841
	student	5		
Communication	staff nurse	5	2.5	.032
	student	5		
Direct patient care	staff nurse	5	9	.548
	student	5		
Managing work	staff nurse	5	0	.008
	student	5		
Supervision and teaching	staff nurse	5	6	.222
	student	5		
Barriers and facilitators	staff nurse	5	5.5	.151
	student	5		
Dependency	staff nurse	5	11	.841
	student	5		
Knowing patients	staff nurse	5	6.5	.222
	student	5		
Personal characteristics of pts.	staff nurse	5	2.5	.032
	student	5		
Illness severity	staff nurse	5	12	1.0
	student	5		
Time issues	staff nurse	5	0	.008
	student	5		
Miscellaneous	staff nurse	5	8	.421
	student	5		

APPENDIX XXXVI

Information for patients

My name is Charles Hendry and I am a lecturer in the School of Nursing and Midwifery here at the Hospital. I am also a trained nurse. You may have noticed me in the background over the last few days and I thought you might like to know what I have been up to.

I am interested in comparing the factors that influence the ways in which trained nurses and student nurses work, therefore, I have been spending time in the wards observing a staff nurse and student as they go about their everyday work.

You can be reassured that these observations will not have had any effect on your nurse's ability to look after you. I can also reassure you that all information that I collect while observing the nurses' work is maintained in the strictest confidence.

I hope that this information explains who I am and why I have been in the ward over the last few days.

Charles Hendry
Nursing Lecturer

APPENDIX XXXVII

Example of interview transcript – SN1/St1

Q1. In prioritising the care you gave your patients what were you trying to achieve?

SN1 - Ehm... I think really most of the time I think ehm... patie... well in a medical ward anyway, a lot of the patients I look after are... have to be ready for certain things like physio and OT so I always think about that ehm... obviously if there was somebody lying who needed immediate attention I would see to them first but ehm.. a lot of the time we're trying to get... I think about that ahead... we're got to think ahead and think if patients are going for physio, OT ehm... the one's that can do themselves often will go and do themselves anyway so most of the time... you know the dependent patients you do end up sort of doing towards the end of the shift just... it's just.. I think that's the way it works but obviously if there was somebody who needed care, you know, who was lying in a wet bed or something, who was dependent I would... I wouldn't just always think that 'I was going to leave them to the very end' ... I don't have a set... I think it just depends on exactly what the patients can do.

R - So you're not working to a set of rules, or... always do...

SN1 - No, not really... it's just.. I mean things just kind of tend to fall into place usually anyway ehm... and depending I think on the busyness of the ward and what the quality of the patients are like, I think... but I think most of the time I would... I usually, that's usually what happens I think... the ones that are more dependent are usually sort of... are organised first really, but that's not a rule if you know what I mean, it's just (StN1 - the way it happens) the way it does happen, yeah.

St1 - I don't know.. I think it's just the same... you just... the people that are able to do what they can, they just get on and do it (SN1 - mmhm) and you just more or less help the folk that can't (SN1 - yeah) do everything (?) for themselves... you know, filling a basin and stuff like that (SN1 - yeah)... just simple things like that you know.. I don't do it in (OVERLAPPING SPEECH)... you just do it, I don't know... I've never really thought about it... it's just the way it happens I think.

R - Are there times when you think I must do that first, or, I shouldn't do that just now I should leave that till later?

St1 – Ehm... there probably is but I can't think of any just now

Q2. How confident were you about your prioritising?

St1 - How do you mean, 'how confident?'

APPENDIX XXXVII

R - Rephrase

St1 - It depends upon how long I've known the patient I think, and how well I know them

SN1 - Yeah, I feel confident about what I'm doing like sorting my workload out definitely, yeah.

R - Were you always confident about...

SN1 - Yeah, pretty much... not obviously... I think as a student it's different 'cause you're always working with somebody but since I've been qualified I think I've always been able.. I mean obviously the longer you're qualified you get quicker at being able to think of things in your head... and it does come... you realise that things... that before you'd maybe rush around in the morning trying to do... now I'd be able to think 'well, that can wait until the late shift' ... I mean, you know, I know what I can... I can definitely... I know, I do feel more confident at being able to know what I'm doing yeah.

Q3. What criteria do you use to decide what to do next?

SN1 - Ehm.... I think I tend to think sometimes to start with things that... that could be left... which is maybe a bit backwards probably sounding... but I tend to think... roughly, I mean I know roughly what... how much I can do say in an early shift, and know that if I do have a list of things which we usually do most of the time... but a lot of the time you can't do it all... so I tend to think more on the lines of... what could I leave, and then there is obviously certain things that... the rest of the things are usually things that.. I mean there is things that I would have to do straight away... so I tend to think more what could be... if I know I'm not going to get them all done.. I would tend to think more of what could be left till later or I could pass on and then what I'm left with I would do... if you know what I mean... is that... I tend to think like that I think.

St1 - I don't know... I don't really get... you know, I'm not really left on my own to say... you know..
(*R - it doesn't really affect you...*) not at this stage of my training.

Q4. How important is the medical diagnosis in prioritising nursing care?

St1 - I don't... it's not really... I don't think it's anything for me 'cause I don't... half the time I don't know what's really wrong with them anyway... you know, the diagnosis.

SN1 - I think... I think it doesn't really matter... I think if you see anybody in distress, no matter what their diagnosis is, you know, you would prioritise that... I don't think it's really... anything... I'm not

APPENDIX XXXVII

thinking, do you know what I mean? It's more to do with their actual... if they've got... yeah... you wouldn't give somebody with chest pain, sort of, priority over somebody, do you know what I mean... it's more to do with actually if they look distressed or any physical sort of.... things.

R - Does the medical diagnosis have any influence on any occasion... can you think of times when it is important?

SN1 - I don't know... I don't think you... it probably does if you think about it but I think when you're thinking about the patients you're not thinking of them as... what's wrong with them.. I suppose you are sub-consciously but ehm... I don't know actually (St1 - I don't really) probably not really

St1 - see them as what's wrong (SN1 - no) with them... I just... I don't know...

SN1 - it's just what their needs are at that time really... they could change on a daily basis so I wouldn't say it's really important.

Q5. How do you manage disruptions/interruptions to your plan of work?

SN1 - Ehm... sometimes... I think the worst time... well, for me anyway, is when I'm doing drug rounds (St1 - yeah) that does... I think, rile me a little bit and it always happens ehm... you always start out to go and do something... there's always other people asking for things... but ehm, again I just think.. I suppose most of the time... if somebody's asking me something that's sort of non-urgent I would... I think I would still carry on doing what I was in the middle of doing and I tend to say I'll come back ehm... although a lot of the time... well, sometimes I don't always go back but that's just... it's not deliberate but sometimes I'll say 'I'll be back in a minute' and never go back.. I mean I've done that and patients have said, 'You said you would come back' and it's just because... there's other things in your mind really, but if it's nothing really urgent I would probably carry on... and do what I was doing and then either... add that something to what I was doing or go and do that straight away... 'cause I'd maybe forget about it (laughs) usually

St1 - I mean I don't really do big things like drug... I mean I don't do drug rounds or anything really so I've never really...

R - Are there times your work is interrupted

OVERLAPPING SPEECH... taken somebody to the toilet and you realise, 'God, I've left that person on the toilet'... I mean I did that today really (SN1 - yeah, yeah)

APPENDIX XXXVII

R - If you are trying to do something and somebody interrupts you, how do you manage that, how do you cope with that?

St1 - Ehm, I'd probably stop and go do it then probably.. I'm not doing anything... you know I wouldn't be doing anything major at this stage of my training so it probably wouldn't matter.. I probably could just leave it and go... unless it was something like I was helping somebody to get washed or something then I would ask the other person to just wait till I'd finished (SN1 - mmhm)

R - But you could see yourself sometimes stopping what you're doing... going, attending to whatever else it was, and then what would happen next?

St1 - I'd go back to what I was doing.

Q6. How do you think that your skill in prioritising has changed/will change over time?

SN1 - I think, yes, I think as a student... ehm... well when you... when you become a staff nurse I think you automatically have more responsibility... you've got different responsibilities... you're accountable.. as a student there is... you're not really... you are prioritising but you're doing it along with somebody.. I (St1 - yeah) think you can't help but not improve your skills, if you know what I mean, a staff nurse and you do still have guidance but ehm.. (St1 - I think when you're a student you know that there is going to be somebody that can help you out) you have your own patients... (St1- whereas I think as a staff nurse you've...) yeah... it's different... I think you just... I think it automatically happens... if you're doing something everyday I think... it kind of automatically happens, if you know what I mean, its...

R - Are there staff nurses that you can recall who are not very good at setting priorities?

SN1 - Yeah

R - So its not the case that everybody gets there just by virtue of experience?

SN1 - No, I suppose not, I mean that's... maybe automatically's not the right word but ehm... I suppose some people are more... are better at organising than others but I think... I would say I think you can't help but improve them... whether they're always any good or ever going to be really good skills I think everybody would probably improve them... just because you're having to deal with it all the time and you have to.. you basically have to get on with things.

R - The turning point for you was when you became a staff nurse, do you think?

APPENDIX XXXVII

SN1 - Definitely, yeah... I noticed quite a big difference... or even maybe when I was a third year student I felt I was beginning to.... you know, be able to sort out things a bit more, but the first two years I wouldn't say really because you were supervised an awful lot so you weren't really having to think, I don't think, as much about these things.. you were learning these basically... basic care so... from a third year student onwards I would say.

R - How important is it to be able to set your priorities properly as it were? Is it a core skill?

SN1 - I think you have to... I think you have to be able to do it at some point... I think it depends where... what kind of an area you're working in... I mean, if it's a really busy ward ehm... I think you have to really, pretty much be able to prioritise in some way.

R - What's the difference between someone who sets priorities well and someone who doesn't?

SN1 - I think you can... I don't know... you can just really... people that probably can't prioritise maybe... not as good as.. I don't know... just whatever... they're maybe not as good ehm... you tend to see them at the end of the shift, or whatever, just always being really behind with things and... just... you can just... by me just looking at them I would think to myself 'Well, I would have done that first' but they're the ones that I think that you often see people... ehm, rushing about, not getting off shift on time... catching up on things and not... things that could be passed on... you know, they're not maybe experienced enough to think 'I could leave that'.. I think it's just... they take too much on board... you've got to be able to think what can be left... and what needs done.

R – St1, what do you think about priority setting as a skill; is it something that you've seen some people do and other people not?

St1 - I see it... I even seen it in some of the third year students.. I've noticed it as well... (SN1 - mmhm) you know, they seem to be more confident to... do things in a certain order (SN1 - mmhm) if you know what I mean (SN1 - mmhm) when I.. I mean I'm not totally... I'm definitely not confident enough to just be able to say 'I'll do that, that and that' 'cause you know I can't.

R - Before you were involved in this study was it something that you had been aware of as something that nurses should do?

St1 – No... I hadn't... I don't think I'd really thought of it before.

R - How could you be helped to develop the skill of setting priorities?

APPENDIX XXXVII

St1 - I think it comes... I think it would... well, maybe not with everybody but... you probably get better at it the more wards you go onto... the more practice you get... I mean it takes a little while to settle into a ward, but I think once you do settle in you start to see how it is done, and you just start to fit in... you just start to follow other peoples... the way other people do it... do you see what I mean... you're influenced by the way others... staff nurses.

R - Would there be anything else, other than going to lots of places and working with different staff nurses, is there anything else that could be done that you can think of that would be helpful?

St1 - I don't... gaining your own confidence would help as a bank (?) you know you've got to... you need to have confidence in yourself... but I think that will have... again, I think that all comes through time.

R - Tell me how you found thinking-aloud.

SN1 - Well, it does make you.. I think it's just really difficult to actually say it out... I mean you have it all in your head but.. I think there's that many things going round in your head you don't often realise how much you're actually thinking about (St1 - yeah)... when you have to actually say it... for some reason you seem to forget everything (St1 - yeah) that's going on in your head... when somebody says just think out... and it is difficult... it is quite difficult to do... to get everything that you're thinking about... to think it out loud

St1 - You start to say it and you think to yourself 'There must be more than that surely to God' (SN1 - yeah)

R - So do you think what you say out loud does reflect what's going on in your head, but there's maybe more that you're still not getting out?

SN1 - Yes, I think so... yeah, just probably due to the... I don't know... the situation... it is a bit (St1 - daunting) yeah

R - Did it get easier?

SN1 - Aha, definitely... the first time I was really... but after that... like yesterday and today it's... it does get better... it's easier to do... I don't think probably that everything that was going through my head came out... I mean most of it did... I mean what I was thinking initially but ehm... I probably could have

APPENDIX XXXVII

R - Was that because there were things that you were thinking about but didn't say, or was it a case of it was only afterwards, that you realised that there was something else?

SN1 - Yeah, I don't think it was right at the time... I think it was just after, I thought ehm...

R - 'Should have said'...

SN1 - yeah, it wasn't actually at the time.

R - But you weren't deliberately holding things back as far as you can recall?

SN1 - Not at the time... there was just definitely just what I was thinking there and then what I was going to do but... when you think about it after... things... more things came... you know...

R-Tell me how you found being observed.

St1 - It's nerve-racking.

SN1 -yeah

St1 - It wasn't so bad today.

R - Did you get used to it?

SN1 - Yeah, again the first time I thought... I noticed it more... but yesterday and today it didn't bother me... I knew you were there but ehm... it's... I think... I don't think anybody likes being watched... I don't think... 'cause it... you sort... it does make you question what you're doing... it does... which is a good thing, you know.

R - Do you think, once you got used to being observed you were behaving in the way you would have had I not been there?

SN1 - Yeah, but the first time it was a bit like you were trying to do everything 'spot on'... I admit that... I think it was but more yesterday and today I was just carrying on as if I would normally do... definitely, it did get better... yeah, it did... definitely (St1 - mmhm)

APPENDIX XXXVIII

Conference Papers

Hendry, C., Walker, A., and Swanston, M. 1999. Nurses at work: an investigation of the planning activities of learner and trained nurses. The British Psychological Society: Division of Health Psychology Annual Conference. University of Leeds, England.

Hendry, C., Walker, A., and Swanston, M. 1999. From Novice to Expert: a study investigating the ability of senior nurses to distinguish the functional level of nurses with varying levels of experience. RCN Research Society Annual Nursing Research Conference. University of Keele, England.

Hendry, C. 1997. Caring for Patients: Setting Priorities - a comparison between learner and trained nurses. NBS Residential Participative Conference for Teachers 1997. Aviemore, Scotland.

Hendry, C., Walker, A., and Swanston, M. 1996. Think-aloud method: utilising verbal protocols to study patient care planning. 1st. Biennial International Research Conference, Lothian College of Health, Edinburgh, Scotland. April 1996.

Hendry, C. 1994. Using a vignette to study priority setting between student nurses and trained nurses. The Royal College of Nursing of the United Kingdom Research Advisory Group Annual Nursing Research Conference. Hull, England. April 1994.