The Relationship between the Work Environment and Therapeutic Commitment of Nurses Working in Mental Health

Michael Anthony Roche

RN, MHSc, BHSc, DipAppSc, MHCert.

A thesis submitted in fulfilment of the requirements for the degree of
Doctor of Philosophy
University of Technology, Sydney
July 2009

Certificate of Authorship/Originality

I certify that the work in this thesis has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree except as fully acknowledged within the text.

I also certify that the thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

Signature of Candidate

Production Note:
Signature removed prior to publication.

Acknowledgements

In a process such as this, the support of supervisors, colleagues, family and friends is essential. Any acknowledgment of their efforts here cannot adequately express the massive impact they have had on this work. Nonetheless, I will try.

Firstly, I have had the great fortune to experience the supervision of two eminent scholars: Professor Christine Duffield and Professor Edward White. Their support and commitment to this study was unwavering throughout the many challenges, large and small, that were encountered along the way. Their ability to get the heart of the matter in the many drafts was invaluable in developing this document, and their extensive experience added immensely to the study overall. I would particularly like to thank Christine and Ted for the opportunities they provided me to develop my research skills in their own projects before commencing my own. I cannot thank them enough for their belief in me.

My colleagues in the Centre for Health Services Management and Faculty of Nursing, Midwifery and Health at the University of Technology, Sydney never faltered in their support and encouragement. Many thanks to them and again to Christine for finding ways to give me the time to complete this document.

I would also like to acknowledge the crucial methodological and statistical support I received. Dr Julie Winstanley initially pointed me in the right methodological direction, and then later gave more of her time to review and comment on my analysis. Dr Ian Lings showed me how to address the issues that arose during the modelling process and guided me to the *SmartPLS* software. Dr Madeleine King suggested alternative analyses that clarified the overall process. Without their input this project may have stalled.

Thank you also to the managers of the mental health services who encouraged me to undertake this study in their organisations. In particular, I would like to acknowledge Michelle Bradley, who facilitated access to wards across her Area Health Service. To the nurses who give of themselves to their patients every day, I can only offer my humble thanks for their support in this project. Their enthusiasm to provide the best possible care in what are sometimes the most difficult circumstances is not always as appreciated as it should be. The best acknowledgement I can give them is to ensure that this research is a step in the right direction; to enable them to provide the care they know mental health patients need and deserve.

Finally, I would like to acknowledge the support and love shown to me by my wonderful family. Kim, Mireille and Eamon not only tolerated me locking myself away for so many nights and weekends with good humour and endless understanding, they made sure that I never gave up (and that I never missed a soccer game). I must also thank my friends, too many to list here, who were always positive and encouraging no matter how glacial I believed progress to be, who made sure I never missed any social occasion or camping trip, and who kept my feet well and truly on the ground. I am indebted to you all.

I think particularly for the last 30 to 40 years, I can't imagine what it would have been like to work somewhere where so much change was going on, it must have felt like the ground moving underneath you, particularly people working in such a high stress environment, really. I mean everybody that was there was suffering some form of distress, and here were people trying to do what they thought was right and then being told often that what they were doing was wrong...

Remembering Goodna: Stories from a Queensland mental hospital (Australian Broadcasting Corporation, 2008).

Table of Contents

List of Tables

List of Figures

Abstract

The therapeutic relationship is the central focus of nursing work in mental health (Peplau, 1992, 1997). However, there is currently little research that has examined influences on the nurses' capacity to effectively engage in this relationship. This study investigated the impact of nurse, patient and work environment factors on the *willingness and ability* of nurses to engage in therapeutic relationships. This attribute of the nurse, identified as therapeutic commitment, is essential for an effective therapeutic relationship (Lauder, et al., 2000; Rogers, 1957), which has been identified by users of mental health services as the foundation of their care (Forchuk & Reynolds, 2001). The therapeutic relationship is central to nursing in mental health and has been linked to improved patient outcomes (Horvath, 2005).

Environmental factors hypothesised to impact the nurse's therapeutic commitment included leadership, collegial nurse-doctor relationships, participation in hospital affairs, the foundations of quality nursing, clinical supervision, staffing, skill mix and patient turnover (Aiken, et al., 2008; Duffield, et al., 2009a; Estabrooks, et al., 2002; Kramer & Schmalenberg, 2004; Lake & Friese, 2006; McGillis-Hall & Doran, 2004; Needleman, et al., 2002; Proctor, 1986). These factors, together with measures of the nurse's qualifications and experience, were assembled into an hypothesised model, based on an earlier framework that included the nurse's perception of support, adequacy and legitimacy in their role along with their therapeutic commitment (Lauder, et al., 2000; Shaw, et al., 1978).

Data were collected from 76 nurses across six mental health wards in general acute hospitals in New South Wales. A nurse survey collected the identified factors using the Practice Environment Scale of the Nursing Work Index (Lake, 2002), the Mental Health Problems Perception Questionnaire (Lauder, et al., 2000), and other questions. A ward profile was used to collect staffing, skill mix and patient movement data. Partial least squares path modelling was applied to the model in order to identify the most influential relationships. The most significant factors in the model were the foundations for quality care, nurse experience, participation in hospital affairs and clinical supervision.

Services should enhance the support provided to clinical nurses in mental health through improved access to preceptorship, continued education and clinical supervision. In addition,

the therapeutic commitment of nurses in mental health can be increased through improved continuity of care, access to career development opportunities such as the involvement of mental health nurses in the governance of the hospital, and improved responsiveness of administration to the needs of nurses in mental health. Engagement in these supportive activities should be enacted through structured mechanisms that both facilitate involvement and encourage evaluation. This study provides a basis on which to modify the operation of mental health services in general hospitals in order to improve the nursing work environment.

1. Introduction

The impact of mental ill health on society and the provision of health care services is significant. Mental disorders, a category that includes psychotic illness, depression and alcohol or drug dependence, is one of the leading causes of burden of diseases and injury across the world (World Health Organisation, 2008). Mental ill health has been noted to have a significant impact on the family, community and workplace as well as the individual (Dewa & Lin, 2000; Stewart, et al., 2003; World Health Organisation, 2003). The World Health Organisation (2003) states that over one third of years lived with disability are related to mental health disorders, and that one in four families currently have at least one member with a mental disorder. Further, it is predicted that by 2030 the greatest disease burden globally will be depression (World Health Organisation, 2008).

In Australia, it has been estimated that mortality and disability due to mental disorders account for 13% of all disease burden (Begg, et al., 2007; Mathers, et al., 2001), and that mental ill health is the leading cause of non-fatal disease burden (Australian Institute of Health and Welfare, 2006a). Mental illness will affect one in five adult Australians in their lifetime (Department of Health and Ageing, 2005), with approximately 2.1 million people currently living with a long term mental or behavioural problem (Australian Bureau of Statistics, 2006). The Royal Australian and New Zealand College of Psychiatrists (The Royal Australian and New Zealand College of Psychiatrists, 2005) suggests that mental illness comprises 27% of the total disability costs in Australia, and it was estimated that the direct cost to the health system in 2005 was $3.6 billion (Department of Health and Ageing, 2007). These figures are projected to increase (Begg, et al., 2007). Along with this large and increasing problem, it has also been observed that only 38% of adults with a mental disorder receive mental health care, which is approximately half of that for non-mental health disorders (Department of Health and Ageing, 2005).

In light of this significant health problem it is essential that Australia has a mental health workforce of sufficient size and capacity to provide appropriate care to people with a mental health problem (Australian Health Ministers, 2003). It is therefore necessary to understand the factors that may influence not only recruitment and retention, but also those that impact health professionals' ability to work effectively with patients.

The importance of this health issue has been recognised by successive Australian governments, and mental health has been declared a National Health Priority Area (Australian Institute of Health and Welfare, 2006a). Accordingly, resources available to public mental health services in Australia have increased, although relative to health as a whole spending has remained fairly static at around 7% between 1993 and 2005 (Council of Australian Governments, 2006; Department of Health and Ageing, 2005, 2007).

Prior to and during this period, in line with much of the rest of the western world, Australian mental health services have undergone dramatic change. During the 1980s and 1990s services across Australia were transformed from primarily institutionally based organisations to those that employ a combination of hospital and community based care (Australian Institute of Health and Welfare, 2004a, 2004b, 2005). Since 1992, under a series of National Mental Health Plans and Strategies (Australian Health Ministers, 1992, 1998, 2003), Australia has adopted a national framework to guide this reform of mental health services. The process of deinstitutionalisation has included the reduction in size or closure of mental health institutions and their replacement by residential or non-residential care in the community. A concurrent emphasis on the mainstreaming of mental health services has led to a movement of units from the large stand alone psychiatric hospitals to acute care general hospitals (Australian Institute of Health and Welfare, 2004b; Department of Health and Ageing, 2009b); and between 1991 and 1996 there was an 80% increase in the number of community healthcare centres and a 47% decrease in the number of psychiatric hospitals nationally (Senate Community Affairs References Committee, 2002).

Mainstreaming of mental health services was intended to integrate services so as to improve the provision of comprehensive care to people with mental health problems (Department of Health and Ageing, 2009b). However questions remain about whether this integration is complete, particularly in relation to the management of services. For example , as noted in a submission to the *Not for Service* report (Mental Health Council of Australia, 2005, p. 129):

> *It is by no means clear that senior management staff have a good grasp of issues to do with mental health and psychiatric clinical service delivery. Despite principles of integration and mainstreaming there still is a tendency for psychiatry to be treated differently.*

Also, deinstitutionalisation has been and remains contentious (Walker, 2003), and it has been suggested that problems with implementation have resulted in fractured mental health services, and a lack of support for carers (Australian Health Ministers, 2003). One of the most commonly identified issues linked to deinstitutionalisation is the overall decrease in the number of acute and non-acute mental health beds, leading to routine reports of 100% occupancy (Council of Australian Governments, 2006; NSW Mental Health Sentinel Events Review Committee, 2005). Therefore, despite increased public spending, difficulty in accessing appropriate services remains one of the major barriers to the successful treatment of mental health problems (Armstrong, 2000; Mental Health Council of Australia, 2005).

In New South Wales (NSW), ongoing problems with service provision have led to a number of inquiries into mental health services. These reports have found that problems continue in integration, coordination and planning of services (NSW Health, 1998, 2005; NSW Legislative Council Select Committee on Mental Health, 2002; NSW Mental Health Sentinel Events Review Committee, 2003, 2005). Across Australia, consumers, carers, and referring primary health care professionals have consistently stated that access to services is difficult and limited (Mental Health Council of Australia, 2005). Consumer surveys have reported instances of unfair and disrespectful treatment from mental health workers (SANE Australia, 2007).

In addition, a link has been posited between fewer mental health beds in an Area Health Service (AHS, a geographic administrative division of public health services in NSW) and higher post-discharge suicide rates, where areas with more than “80% of their estimated population-based acute mental health bed requirements had an apparent rate of suicide following discharge of approximately half that for services with fewer beds” (NSW Mental Health Sentinel Events Review Committee, 2005 p. 36).

1.1. Nurses in Mental Health

Another consistent theme in reviews of mental health care is that services cannot recruit and retain the necessary workforce in most mental health disciplines, thereby limiting the ability of services to use any additional resources to expand and improve provision of treatment (Australian Mental Health Workforce Advisory Committee, 2008a, 2008b, 2008c; Mental Health Nurse Education Taskforce, 2008). In economic terms, the increase in demand for mental health professionals has not been matched by supply. In particular, it has been suggested that mental health services have been placed under considerable strain by

shortages of nurses (NSW Labour Economics Office, 2008; NSW Legislative Council Select Committee on Mental Health, 2002).

Nurses are the largest single professional group in the mental health workforce. In New South Wales, nurses working in mental health accounted for approximately 6% of nurses employed during 2005, and around 50% of the mental health workforce (Australian Institute of Health and Welfare, 2008b). When compared to other nursing specialties in the State, mental health has the highest proportion of males (31%), the lowest proportion of part time workers (33.6%), and the highest number of average hours worked per week (37.2). Approximately half of these nurses held post-graduate qualifications, although less than a quarter held specialist qualifications in mental health (Australian Institute of Health and Welfare, 2008b). The average age of a nurse working in mental health in NSW is 44.7, consistent with the national average and trend towards an older workforce (Australian Institute of Health and Welfare, 2008b). Ongoing loss due to retirement is also an issue, with the proportion of nurses working in mental health aged 55 and over increasing to 19.7% in 2005 (Australian Institute of Health and Welfare, 2008a, 2008b). In addition, although services have increased in size and number, the numbers of nurses in mental health increased by only 0.9% from 2001-2005, compared to an increase of 7.1% in nursing overall (Australian Health Workforce Advisory Committee, 2003; Australian Institute of Health and Welfare, 2008a).

The most often cited study of this workforce is the *Scoping Study of the Australian Mental Health Nursing Workforce 1999* (Clinton, 2000). Although that study is not without limitations, particularly for its emphasis on qualitative rather than quantitative data (Clinton & Hazelton, 2000b), it provides detailed national information on nursing in mental health. Other more recent studies address similar questions for specific geographic areas (White & Roche, 2006), or nationally for a specific content focus (Mental Health Nurse Education Taskforce, 2008). The limitations and date of the *Scoping Study* are acknowledged, and reference to this source has been made alongside more recent studies and reports where available.

The *Inquiry into Mental Health Services in New South Wales* (2002), the *Scoping Study* (Clinton, 2000), and other reports (Department of Education Science & Training, 2002; Senate Community Affairs References Committee, 2002) have suggested that changes to the practice of mental health services, in particular increased short-term care and a lack of appropriate support for nurses have had deleterious effects on job satisfaction and by extension, on recruitment and retention. Clinton (2000) also proposed that along with problems stemming

from changes in services structure, shortages in mental health nursing were related to the changes in registration, education, and practice of mental health nurses.

In recognition of the impact of these challenges, and of the role that nurses play in mental health care, a key direction of the National Mental Health Plan 2003-2008 was to strengthen initiatives that seek to address workforce concerns (Australian Health Ministers, 2003). However, the issues remain at the fore, with ongoing concerns not only about recruitment and retention, but also about the education, role, skills and status of nurses in mental health (Department of Health and Ageing, 2007).

Nurses are recognised as having the greatest opportunity to interact with patients in mental health, and to therefore engage in therapeutic activity (Cowman, Farrelly, & Gilheany, 2001; Mason, Lovell, & Coyle, 2008b). It is therefore important to understand the factors that may influence the nurse's ability to effectively undertake these activities, in particular the central focus of mental health care: the establishment and maintenance of a therapeutic relationship with mental health consumers and carers. This aspect of the nurse's role has been listed as a core value of the current recommended framework for mental health in pre-registration nursing courses (Mental Health Nurse Education Taskforce, 2008). The therapeutic relationship is defined as one of mutual respect between nurse and patient, that is focused on the resolution of specific problems (Forchuk, 1991; Peplau, 1989). This connection with patients has been considered the essence of the role of the nurse in mental health, with the concurrent suggestion that it is necessary for treatment and recovery with positive patient outcomes (Altschul, 1972; Barker, 1990, 2003; Forchuk & Reynolds, 2001; Peplau, 1989). As stated by the Australian Health Workforce Advisory Committee (2003, p. 13), "in mental health nursing the nurse-patient relationship is valued over technical skills. Much of the work is 'hidden'."

Aside from the centrality of the therapeutic relationship, the role of the nurse in mental health has been identified as highly variable, changeable, and sometimes ambiguous (Cowman, et al., 2001; Mason, et al., 2008b; Rungapadiachy, Madill, & Gough, 2006; Scanlon, 2006). Together with this lack of consistency and clarity, different disciplines in the mental health workforce possess a similar basic skill set (Mental Health Nurse Education Taskforce, 2008), but may operate from different perspectives. There is therefore the potential for conflict between dissimilar models of care, disrupting inter-professional communication and

moving the focus away from the patient (Mandy, Milton, & Mandy, 2004; Todd, Sellman, & Robertson, 2002).

The practice of nurses in mental health has also been influenced by changes in associated health disciplines. Developments in psychiatry over the last few decades have resulted in a much more comprehensive range of medications with which to treat mental illnesses (Kent & Yellowlees, 1994; Vaughan, et al., 2000). It has been suggested that consequent changes in the emphasis of treatment in inpatient units to a more medication-centred approach has changed the environment in which nurses work (Barker, 2003). For example, the focus on pharmacological interventions has restricted the ability of mental health nurses to adopt a more holistic approach, has curtailed the development of other aspects of their role such as prevention, and has limited the capacity of the nurse to establish a close relationship with the patient (Coleman & Jenkins, 1998). Similarly, in inpatient units nurses are often working with patients for brief periods in only the acute psychotic phase of their illness (Cleary & Edwards, 1999; Coleman & Jenkins, 1998; NSW Legislative Council Select Committee on Mental Health, 2002). In contrast, the introduction of effective antipsychotic therapy may provide the opportunity to improve the therapeutic relationship (O'Brien, 2001).

Nurses may be presented with challenges when attempting to communicate the nature of their work in mental health, as the focus is not on specific tasks as it may be in other areas of nursing (Cleary, 2003b; Tummers, et al., 2001). For example, the import of the nurse-patient relationship may be poorly understood by integrated management structures in mainstream services that have been noted to treat mental health services 'differently' (Mental Health Council of Australia, 2005). Consequently, it is not always easy for nurses to articulate and emphasise the significance of their relationship with the patient, with different models of care, non-mental health management structures, the lack of clarity of the role of the mental health nurse in the literature, and the loss of professional status ascribed to changes in education and registration (Clinton, 2000).

1.1.1. Preparation for Practice

Concurrent with the reform of mental health services during the 1980s and 1990s, there were changes to the education and registration of nurses in mental health. The NSW Nurses Registration (Amendment) Act 1985, and subsequently the NSW Nurses and Midwives Act 1991 permitted the consolidation of separate registers for general nurses, psychiatric nurses

and other specialist nurses into a single register of nurses (Australian & New Zealand College of Mental Health Nurses, 1996c). Prior to the consolidation, there were separate registers for psychiatric, general, and other specialties, with restrictions on practice dependent on qualifications. Separate training was required for the different specialties. Once the registers were consolidated it was no longer necessary for nurses to undertake specialist education to work in mental health areas (Australian & New Zealand College of Mental Health Nurses, 1996c; Health & Community Services Union (Victoria Branch), 1999). Other States and Territories in Australia have retained some restrictions on registration and practice based on qualifications, and some permit endorsement of qualifications or experience. However, in most jurisdictions nurses who hold current registration can work in mental health services whether or not they hold mental health qualifications (Department of Education Science & Training, 2002).

This issue is also evidenced in terminological uncertainty. Nurses working in a mental health setting are often referred to as either *psychiatric nurses* or *mental health nurses*, regardless of specialist qualifications (Australian Health Workforce Advisory Committee, 2003; Clinton, 2000; Mental Health Nurse Education Taskforce, 2008). However, the Australian College of Mental Health Nurses asserts that only nurses with specialist mental health education, separate registration, or who have completed a credentialling process, may be referred to as psychiatric or mental health nurses (Australian & New Zealand College of Mental Health Nurses, 1996a, 1996b, 2004). Regardless of the variation in registration practices or terminology across the nation, in NSW it is not possible from registration alone to determine the suitability of a given nurse for a specialist position (Roche & Duffield, 2007). Given the large number of nurses working in mental health without formal qualifications in the area (77%, Australian Mental Health Workforce Advisory Committee, 2008a), and in consideration of the aforementioned dispute of terms, the statement '*nurses working in mental health'* is used to describe participants in this study.

The consolidation of registers coincided with the movement of nursing education from the hospital to the tertiary sector and the concurrent decline and closure of (usually hospital-based) direct-entry courses into mental health nursing (Department of Education Science & Training, 2002). Happell (1998b) suggests that this process may have led to the belief that since nurses graduating from comprehensive courses were able to work in mental health areas they were already adequately prepared to do so, even though the pre-existing comprehensive courses may not have been modified to incorporate adequate mental health content. In

addition, there has been little incentive in terms of remuneration or career advancement for nurses without specialist mental health qualifications to acquire them (Clinton, 2000).

Another effect of the closure of direct entry courses was that all specialist mental health nursing education moved to the postgraduate arena. A number of barriers have been identified, such as cost and work release, that are believed to impede enrolments in these courses (Australian Health Workforce Advisory Committee, 2004; Clinton, 2000; Department of Education Science & Training, 2002). Clinton (2000) also notes that the lack of recognition of mental health nursing qualifications, cited by mental health nurses as an indicator of their loss of status, was seen as a consequence of the consolidation of registers, the closure of direct entry psychiatric nursing courses, and the variation in quality of current postgraduate courses. Perhaps as a partial consequence of low status, mental health nursing has become an unpopular career choice (Australian Health Workforce Advisory Committee, 2004; Happell, 1998b; Mental Health Nurse Education Taskforce, 2008; Stevens & Dulhunty, 1992, 1997).

A number of specific issues in relation to undergraduate nurse education in mental health have been summarised in the *National Review of Nursing Education* (Department of Education Science & Training, 2002). It suggested that there were few qualified staff in higher education institutions available to teach mental health nursing; that there was insufficient quantity and variable quality of mental health clinical placements; that comprehensive courses with crowded curricula become more generalist over time and thereby dilute and devalue the mental health content; and that more support was required for the transition from undergraduate to newly-registered nurse. Other reports have echoed these issues (Australian Health Workforce Advisory Committee, 2004).

In relation to the expertise of educators, the *Mental Health Education Taskforce* (2008), in a survey of universities, found that mental health subject content was primarily taught by a combination of nurse academics with formal mental health qualifications and clinical mental health nurses. In contrast, the facilitation of clinical placements was undertaken by clinical mental health nurses (40%), non-specialist registered nurses (22%), nurse educators (18%), and mental health nurse academics (10%). Some reports have suggested that high numbers of casual staff employed to teach mental health nursing subjects has led to fragmented support for students (Nurses Board of Victoria, 2002).

Questions have also been raised about the currency of education and practice of academic staff, and therefore whether course content is up to date (Wynaden, et al., 2000). Although the therapeutic relationship was found to be the top ranked key issue in undergraduate education, content was highly variable between universities and between compulsory and elective subjects (Mental Health Nurse Education Taskforce, 2008).

The effect of crowded curricula might be seen in the variation of classroom and clinical experience hours between universities. A study in the 1990s found the range of mental health hours to be considerable: from no clinical experience hours and 30 classroom hours to over 120 classroom hours and 200 practical hours (Farrell & Carr, 1996). While it is possible that this variation could indicate a dilution of mental health content as some courses evolved from comprehensive into generalist, it could also be a function of the total hours in the courses, or related to the integration of mental health and other subjects. For example, a study in Victoria found a variation of nearly 300 hours (29%) in total course time, and many integrated subjects (Nurses Board of Victoria, 2002). Recommendations have been made in some jurisdictions for minimum content and clinical practice hours based on the mental health knowledge and skills expected of graduates (Nurses Board of Victoria, 2002), but these are yet to be universally adopted.

In the *Scoping Study*, Clinton (2000) determined the national average of mental health exposure in undergraduate nursing courses to be 59.4 classroom and 120 clinical practice hours. NSW recorded averages of 63 and 86 hours in these categories respectively. More recently, a survey of mental health course content in Australia universities found a range of 15 to 359 theoretical hours (mean 160), and 0 to 352 clinical hours (mean 146). The most commonly cited reason for zero hours clinical placement was the difficulty in obtaining them. In NSW, an average of 110 theory and 133 clinical hours was reported (Mental Health Nurse Education Taskforce, 2008). Although these two studies used different methodologies and are thereby not directly comparable, it is apparent that the there has been an increase in the amount of mental health exposure for undergraduate nurses.

There are indications that more hours of exposure can have some bearing on the disposition of undergraduates towards working in the mental health field. Although a longitudinal study in New South Wales during the 1990s showed a relatively minor increase in the popularity of mental health as a career choice (Stevens & Dulhunty, 1992), more recent research in Victoria showed a greater degree of change. In the latter study, there was a

significant increase in the popularity of mental health nursing when undergraduates were exposed to more classroom theory and clinical practice in mental health, although it did not counter the perception of students that they needed first to consolidate their general nursing skills before moving to mental health (Happell & Rushworth, 1999; Rushworth & Happell, 2000). Similar results were found in relation to students' confidence levels with increased mental health clinical practice exposure (Bell, Horsfall, & Goodin, 1998), and Curtis (2007) reports an increase in recruitment of graduates into mental health following pre-clinical workshops.

In a longitudinal study of the mental health literacy of Australian nursing students at one university, McCann et al. (2009) found that exposure to mental health clinical and theoretical hours improved students' understanding of mental health interventions. The authors recommend placing mental health content early in the course, so as to ameliorate the risk of students forming their image of nursing without consideration of mental health. They also echo concerns made by others (Wynaden, et al., 2000) about the overall adequacy of the course content as preparation for practice.

The quality of clinical placements has been found to be important, with student nurses reporting that their relationship with clinical nurses was crucial to their learning (Arnold, Deans, & Munday, 2004). However, clinical placements in mental health settings may be restricted in quality and quantity by competition for placements from other health disciplines, and by the lack of consistent support for students whilst on placement (Clinton, 2000; Department of Education Science & Training, 2002; Mental Health Nurse Education Taskforce, 2008; Senate Community Affairs References Committee, 2002; Victoria Department of Human Services, 2001).

A strong understanding of mental health, together with associated skills such as sound therapeutic communication, is essential for the provision of quality care by beginning practitioners in the mental health setting (Waite, 2006). It is not clear whether the content or clinical placement allocated to this area provide time for sufficient education in mental health nursing. The variation in hours, quality and quantity of clinical placements, qualifications of those teaching mental health subjects, and overall dilution of mental health within curricula, raises questions about the ability of these courses to prepare nurses for a complex and changing workplace. In particular, the ability of courses to consistently develop the essential

skills necessary for the establishment and maintenance of therapeutic relationships has not been demonstrated.

As stated previously, with the consolidation of undergraduate education for nurses, it was expected that postgraduate education would provide the specialty qualification in areas such as mental health (Clinton, 2000; Department of Education Science & Training, 2002). However, nurses undertaking postgraduate education in mental health have been relatively few, with less than 400 completions nationwide during 1997-1999 (Health & Community Services Union (Victoria Branch), 1999). In NSW, the *Review of the Mental Health Nurse Enhancement Program* (Pagnini, 2005) found that 425 nurses had been funded by the NSW Health Department to undertake postgraduate education between 2001-2004, although with decreased enrolments in 2005. More recent labour analysis suggests that the number of nurses undertaking mental health specific education remains low relative to the size of the profession (NSW Labour Economics Office, 2008). In order to address the cost of postgraduate education a series of scholarship programmes have been launched to support nurses wishing to obtain qualifications in mental health (Council of Australian Governments, 2006; NSW Health, 2005). These programmes have been evaluated positively in NSW through feedback of nurses availing themselves of the opportunities, although their influence on direct care or on recruitment and retention has not been measured (Pagnini, 2005). In addition, marketing to attract nurses into mental health has been implemented, although not yet evaluated (Australian Health Workforce Advisory Committee, 2003).

Together, although there has been an increase in the number of hours of mental health content in undergraduate curricula, concerns remain about the content and location of mental health in comprehensive nursing courses. There are also issues with the uptake of postgraduate education opportunities, and therefore with the skills of nurses working in mental health.

Also noted in the above reports and other research is the pressure placed on services due to high occupancy and frequent patient movements. In a number of qualitative studies in NSW, Cleary and others (2003a, 2004; 1999; 1999) found that these factors are placing nurses under increasing pressure to locate beds, or to accommodate patients without additional resources. A survey of nurses working in mental health in NSW reported low morale, low job satisfaction, and a workload for clinical staff that included a high proportion of administrative duties (White & Roche, 2006). Nurses working in these circumstances may not have the ability

to relate therapeutically to patients, nor to work effectively with other disciplines (Barker & Walker, 2000). Indeed, Brennan et al. (2006) found that the quality and number of staff, together with frequent movement of patients on and off the ward, had detrimental effects on the ability of nurses to engage therapeutically with patients.

The reform of mental health services through deinstitutionalisation and mainstreaming, the changes to registration and education, and the ongoing change to the role and practice of nurses in mental health, have been linked to issues of low professional status (Clinton, 2000), high levels of stress and burnout (Happell, Martin, & Pinikahana, 2003), low job satisfaction (Senate Community Affairs References Committee, 2002), questionable skills (Wynaden, et al., 2000), and difficulties with recruitment and retention (Australian Health Workforce Advisory Committee, 2003). Services have been found to be unwelcoming to new staff and to discourage innovative practice (Mental Health Nurse Education Taskforce, 2008). Access to supportive management in mainstreamed services has been identified as a problem, along with a limited understanding of the role of the nurse in mental health (Australian Health Workforce Advisory Committee, 2003; Mental Health Council of Australia, 2005). Increased emphasis on bed management and the pressures of high occupancy levels may impact the opportunity of nurses to interact with patients. It may be difficult to retain nurses working in these conditions as younger generations have been found to be less willing to work in environments that do not provide fulfilment and ongoing professional rewards (Roche & Duffield, 2007; Swearingen & Liberman, 2004). It is likely that nurses who work in inpatient environments such as that described, who feel professionally devalued and unprepared for practice, who feel stressed and have low job satisfaction, and who work in mainstream settings where there is limited support and patients move through units rapidly, will have little motivation or capacity to engage in the central part of their role: the therapeutic relationship.

Many of these factors identified as influential in mental health nursing have been found to be important also in general nursing. Together these elements may be considered part of the *work environment;* the surrounding conditions or influences at work. The nursing work environment overall has been portrayed as one of increased workload, low status, and limited strength in organisational structures (Duffield & O'Brien-Pallas, 2002). Research outside mental health has found a relationship between the characteristics of the work environment and nurse, system and patient outcomes. Environmental factors such as skill mix, staffing levels and workload, leadership and support, nurses' relationship with doctors, and the adequacy of resources have been associated with nurse retention, job satisfaction, burnout, the hours and

cost of nursing required for a patient, length of stay, mortality, and adverse events, amongst others (Aiken, Clarke, & Sloane, 2002a; Aiken, et al., 2002b; Cho, et al., 2003; Duffield, et al., 2009a; Duffield, et al., 2009c; Duffield, et al., 2007; Kane, et al., 2007; McGillis-Hall, et al., 2001; Needleman, et al., 2001; O'Brien-Pallas, et al., 2004).

Research in general nursing therefore supports a link between characteristics of the work environment and outcomes for nurses, patients and the system. Similar research has not been published in mental health. The most apparent explanation for this is the difference in work practices between general and mental health nurses.

In mental health there are relatively few quantifiable tasks that can be readily observed, as the central aspect of the nurse's role in mental health is the establishment and maintenance of the therapeutic relationship (Peplau, 1992). This relationship involves the nurse and patient working together to develop the patient's understanding of themselves and of their health (Peplau, 1997). There is evidence from some clinical areas that it improves patient outcomes (Wampold & Brown, 2005). However, several authors have suggested it is not possible to accurately quantify the therapeutic relationship in nursing (Altschul, 1972; Forchuk, 1996) and it may therefore be difficult to describe in measurable terms the intervention taking place (Chambers, 1998). Without an understanding of the process, it is difficult to argue the link between the environment and patient outcomes. Consequently, there remains disagreement over the quantification of tasks and outcomes (Forchuk, 1996). Indeed, as noted by Scanlon (2006), there is little published research into the specific aspects of this relationship for nurses working in mental health.

However, a number of studies outside the nursing arena have demonstrated that it is possible to examine a necessary aspect of effective therapeutic relationships as described by Carl Rogers (Rogers, 1957): the health professional's willingness and ability to engage and maintain the relationship. The concept of *therapeutic commitment* embodies this willingness and ability in the context of trust, empathy and positive regard of the health professional towards the patient. This concept has been linked to aspects of the work environment together with aspects of the individual health professional, and has been measured in a number of studies in clinical areas such as alcohol and other drug counselling (Cartwright, 1980, 1981; Gorman & Cartwright, 1991; Hughes, et al., 2008; Shaw, et al., 1978; Watson, Maclaren, & Kerr, 2006), general practice (Albery, et al., 2003), and rural mental health in the United Kingdom and Australia (Lauder, et al., 2001; Oakley-Browne, Lee, & Prabhu, 2007).

1.2. Aims of This Study

Following consideration of the identified issues in the inpatient mental health work environment, and the impact that similar factors have had in other areas of nursing, it is clear that further exploration of these factors in mental health is warranted. Of particular interest is the influence of the work environment on the capacity of nurses to undertake the central part of their role: to develop and maintain a therapeutic relationship with patients. The primary aim of this study therefore is to examine the relationships between a number of aspects of the work environment of nurses working in inpatient mental health, and the nurse's ability and willingness to engage therapeutically with patients.

Specifically:

- Examine the relationships between factors in the work environment (nursing leadership, collegial relationships with physicians, nurse staffing, participation in hospital affairs, foundations for quality of care, patient turnover and length of stay) and aspects of therapeutic attitude (therapeutic commitment, role support and role competency) of nurses working in inpatient mental health units in NSW.

- Identify those aspects of the work environment that impact most significantly on aspects of therapeutic attitude (therapeutic commitment, role support and role competency) of nurses working in inpatient mental health units in NSW.

1.3. Summary

The requirement for mental health services is large and increasing worldwide, with the burden of caring for people with mental disorders expected to increase as a proportion of health care costs over the next several decades. Mental health services, and the mental health workforce, have undergone significant reform, with deinstitutionalisation and mainstreaming of services, concurrent with alterations to the practice of those working within these services. Despite ongoing issues of recruitment and retention, nurses remain a large proportion of the workforce, and have experienced major changes in educational preparation leading to concerns about their skills and ability to undertake their role. These dramatic changes have been linked to a challenging work environment, to decreased professional status and to low job satisfaction. It is also suggested that this work environment may influence the nurse's ability to engage therapeutically with patients.

Similar factors have been found to influence nurse, system and patient outcomes in general nursing, where the role of the nurse is more readily quantifiable and measureable. In contrast, the central role of the nurse in mental health is the establishment and maintenance of the therapeutic relationship, a concept that is not easily measured. However, the necessary precondition for the therapeutic relationship is the nurse's ability and willingness to engage with patients, conceptualised as therapeutic commitment. This concept has been measured in fields other than mental health nursing, and linked to aspects of the individual health professional, and to elements of the work environment.

The current study explored the relationships between factors in the work environment of inpatient mental health wards and the disposition of nurses working in mental health to engage therapeutically with patients. This study investigated the relationships between factors such as nurse manager leadership, nurse participation in career and professional development, the organisational foundations of quality nursing care, nurse relationships with doctors, staffing and skill mix, and other work environment characteristics and therapeutic commitment. Data were collected from several mental health units attached to general acute hospitals in New South Wales. Analysis was undertaken using Partial Least Squares Path Modelling. Findings provide a basis on which to build future research examining the relationship between work environment and nurse, system and patient outcomes in the mental health arena. It addresses the dearth of quantitative research into the relationship between the work environment and the nurse-patient relationship that currently exists in mental health nursing.

1.4. Structure of This Thesis

Chapter 1 has outlined the context of nursing in mental health in New South Wales. This background describes the increasing need for mental health services, together with current challenges such as mainstreaming and the impact of changes in nurse education. The significance of nurses within the mental health workforce has been identified. The importance of identifying factors that influence the capacity of nurses to undertake their practice has been established.

Chapter 2 reviews the nature of the nurse's role in mental health, with particular emphasis on the central aspect of that role, the therapeutic relationship. Research that has examined the value of this relationship to patients, in nursing and the broader literature, is considered.

Chapter 3 examines factors in the work environment, identified from the mental health, general nursing and other health literature, that have been found to influence nurse or patient outcomes. These characteristics are then reviewed with regard to their potential influence on the nurse's capacity to effectively engage in the therapeutic relationship.

Chapter 4 assembles the identified factors into an hypothesised model. This model is based on an established framework that includes the nurse's willingness and ability to engage with patients as the dependent variable. Factors identified in the previous chapter are linked to the concepts described in the established framework, thereby providing a set of testable hypotheses.

Chapter 5 describes the analytical method, sample, data collection procedure and ethical considerations. Detailed examination of the psychometric properties of the instruments from previous research is included.

Chapter 6 presents the findings of the study. The demographic characteristics of the sample are first described, including an examination of responses to the instruments and a comparison of the sample and population. A detailed assessment of the hypothesised model is provided, followed by a summary of the findings.

Chapter 7 includes a discussion of the findings in the light of the literature, noting the importance of this study in establishing the factors in the mental health work environment that influence the nurse's ability and willingness to engage therapeutically with patients. The representativeness of the sample and other limitations are discussed. Implications for nursing practice and future research are identified and recommendations made.

2. Nursing in Mental Health

This Chapter examines nursing in mental health, including a review of literature that identifies the diverse nature of the role and the primacy of the therapeutic relationship between nurse and patient. An examination of the nature and value of that relationship as described in mental health nursing and the broader literature follows. Aspects of the individual nurse and patient, and factors in the work environment that may influence the nurse's capacity to engage in the therapeutic relationship are also considered.

The role of the nurse in mental health differs from that in general nursing settings, with a particular emphasis on the relationship between the nurse and patient, although many other activities have been articulated in the literature. Nursing in mental health has undergone significant change over several decades. The provision of care has relocated from primarily inpatient stand-alone psychiatric facilities to community settings and wards in general hospitals, many services have adopted an explicit multidisciplinary team approach, educational preparation of nurses has undergone massive restructure, and new treatments have been introduced. However, the therapeutic relationship is still seen as the central component of the nurse's role. Factors that influence the capacity of the nurse to develop this relationship are therefore worthy of investigation. These influences may be individual to the nurse such as education or experience, aspects of the patient such as illness severity or legal status, or elements of the broader work environment including workload and organisational support.

2.1. The Role of the Nurse in Mental Health

Most apparent in a comparison of work practices between nurses in medical-surgical and mental health settings, is that there are relatively few quantifiable tasks that can be readily observed in the latter circumstance. Although it is possible to identify some specific tasks in mental health, as described below, the ability to identify both the aspect of the patient to be treated (e.g. a surgical wound) and the nurse's action in respect of it (e.g. a wound dressing) is a crucial delineation. There is often no parallel in mental health, where the aspect of the patient requiring attention (e.g. their psychological distress) is not as readily observed, and nor is the nurse's action (e.g. sitting and listening to the patient express this distress). This invisibility of problem and action has been a common observation in many areas of nursing

(Lawler, 1991), although it would appear to be more prevalent in mental health. In addition, nurses in mental health may not have the same degree of control over the planning of their interventions as nurses in medical-surgical areas (Tummers, et al., 2001). These factors, together with the methodological difficulties in examining the quality of the therapeutic relationship (Barker & Buchanan-Barker, 2008; Chambers, 1998; Forchuk, 1996), may explain the limited quantitative research in the area.

A wide range of roles has been posited for nurses working in mental health. Elsom (2001) identifies specific tasks such as medication administration, counselling and psychotherapy, education, assessment, observation, advocacy, and the maintenance of a therapeutic milieu. The particular combination of tasks is dependent on variations in individual experience, qualification, and practice setting. For example, nurses in Australian mental health services often operate within a multidisciplinary team, which may include psychiatrists, psychologists, social workers, and occupational therapists, amongst others. The role of each of the team members may differ on a unit basis, and will be influenced by the expectation of the team leader, who may or may not be a nurse (Grigg, 2001; Rosen, 2001), thereby increasing the potential variation. Also, the numbers of allied health staff such as psychologists and occupational therapists has expanded across health services in Australia (Productivity Commission, 2005), and together with nurse shortages (NSW Labour Economics Office, 2008) these positions may have acquired some activities traditionally undertaken by the nurse.

The current professional description of the role, the *Standards of practice for mental health nursing in Australia* (Australian & New Zealand College of Mental Health Nurses, 1995) does not identify a range of tasks in detail, but focuses on broad standards that apply to any clinical setting. Others have emphasised the interpersonal process in encouraging and supporting people with a mental illness and their families (Pitkänen, et al., 2008; Salzmann-Erikson, et al., 2009). In order to clarify the role, a number of studies have attempted to articulate it more specifically through observation of activities, interviews with nurses, or via consumer perspectives.

In a review of literature pertaining to the activities of nurses in acute inpatient mental health, Mullen (2009) found that there was an emphasis on medication administration, custodial care, observation and risk management. This was concurrent with limited engagement and development of a therapeutic alliance with patients, and low routine use of psychosocial interventions such as stress management, psychoeducation, cognitive

behavioural therapy, motivational interviewing, and dialectical behaviour therapy. The literature reviewed in that paper related these findings to a lack of individual nurse skills and knowledge in undertaking specific interventions, together with other factors such as high turnover of acutely unwell patients. Similarly, Gijbels (1995), in a small descriptive study, concluded that nurses are more focused on managing the ward environment and coordinating the therapeutic actions of others, than on individual therapeutic interactions.

A series of small qualitative studies in NSW identified specific activities undertaken by nurses in mental health (Cleary, 2003a, 2004; Cleary & Edwards, 1999; Cleary, et al., 1999). Although some of these studies were examining the work environment with a particular view to disruptions experienced by nurses in their duties, they also provide a list of actions undertaken in that context. Activities were often considered unplanned and included admissions, discharges and transfers, attending critical incidents on the current and other wards, assisting other staff, transporting patients to external appointments and legal hearings, and documentation. Planned activities included group or individual therapy sessions. Cleary (2004) identified the coordination role as crucial, as it places nurses in a position to develop strong partnerships with patients. Similar research in New Zealand also found that nurses performed a wide variety of roles (Fourie, et al., 2005). That study identified nurse-patient interaction, assessment, safety, risk management, education, coordination of care, administrative tasks, and supervision of other staff as components of the role. In addition, as is suggested by some of these identified activities, the role of the nurse in mental health does not reside only within the confines of the ward. Deacon (2003), in the United Kingdom, identified that inpatient nurses' responsibilities included administrative and sometimes clinical duties undertaken outside the direct environment, either in person or using telecommunications.

This 'jack of all trades' role applies to both inpatient and outpatient settings. Community mental health nurses in the UK have stated that they use extensive communication skills in their work but, due to the diverse nature of their activities, were searching for legitimacy and a professional identity (Crawford, Brown, & Majomi, 2008; Crawford, et al., 2001). Semi-structured interviews with a range of mental health practitioners in England and France, including 23 mental health nurses, identified wide variation in roles and the application of knowledge (Morant, 2006). A broad range of approaches to care was also identified in a study of 11 UK nurses in their first six months of work in mental health post-graduation (Rungapadiachy, et al., 2006). Similarly, in another inter-country study, Nolan et al. (2007)

identified an 'eclectic' model of care as a common approach for nurses in both the UK and USA. Together these studies suggest that nurses approach care from different perspectives depending on the needs of, and their relationship with, the patient.

A relatively large scale (n=1172) comparison of forensic and other nursing practice in mental health identified a set of skills and attitudes that were perceived by nurses as necessary to practice in general mental health (Mason, Coyle, & Lovell, 2008a; Mason, et al., 2008b). Skills were overwhelmingly in the interpersonal domain, such as communication, relationship building, listening and empathy. Other skills required were clinical knowledge, risk assessment, observation skills, and aggression management. Respondents also indicated that nurses needed experience, tolerance, patience, common sense, and humour, suggesting the nurse's attitude was an important factor in the establishment and maintenance of relationships with patients.

Examining the role from a more relationship-focused perspective, qualitative research in Finnish acute psychiatric wards identified fewer specific tasks than those studies cited previously, and found that most activities were based on relationships between nurses and patients or families (Pitkänen, et al., 2008). In contrast to some of Mullen's (2009) findings described above, few coercive actions were identified, and nurses' interventions centred on showing interest in the patient's needs, being empathic, providing opportunity and encouragement for social contact, interacting with families, and supporting the patient in occupational or physical therapies. However, physical care was also seen to be an important behaviour, as was acting for the safety of patients where necessary, again suggesting a broad variety of tasks are relevant to the role.

Notwithstanding the apparent breadth of the role, and in keeping with the more recent introduction of specific treatments, Curran and Brooker (2007) systematically reviewed randomised control trials of nursing interventions in mental health in the UK. In the 52 studies included, many tested interventions such as cognitive behavioural therapy and brief psychological interventions, along with more traditional, but updated, activities like medication management and education. In acknowledgement of the difficulty in distinguishing the nurses' role in multidisciplinary teams (Dallender, et al., 1999; Tummers, et al., 2001), treatments delivered as part of a mental health team in both community and inpatient settings were included, along with service models such as intensive case management. The reviewers

noted considerable heterogeneity amongst the studies, both in terms of method and in the role of the nurse.

The role of the mental health nurse has also been influenced by changes in associated disciplines, where developments in psychiatric pharmacology have resulted in a range of effective medications with which to treat mental illnesses (Kent & Yellowlees, 1994; Vaughan, et al., 2000). These changes have impacted nurses' work in inpatient units (Barker, 2003). For example, an emphasis on pharmacological interventions and other specific treatments is suggested to have changed the approach to a more 'technological' model that does not encourage strong relationships with patients (Barker & Buchanan-Barker, 2008; Barker, Jackson, & Stevenson, 1999b; Coleman & Jenkins, 1998). Others have suggested that the introduction of effective antipsychotic medication has moved the nurse away from a custodial role (O'Brien, 2001), and thereby enhanced their capacity for therapeutic engagement.

Regardless, it has been noted that consumers hold interpersonal skills in high regard irrespective of the type of treatments involved (Bee, et al., 2008), suggesting that the relationship remains the central component. A systematic review of research into service user views of mental health nurses in the United Kingdom determined that, despite methodological difficulties in some of the studies reviewed, it was clear that patients expected nurses to fulfil a wide range of roles, irrespective of the clinical setting (Bee, et al., 2008). These roles included the implementation of formal psychological interventions such as cognitive behavioural therapy, together with collaborative planning, symptom recognition and management, education, and social support. Of significance was the consistent finding that patients expected nurses to have strong communication and relationship building skills in order to listen effectively, empathise, and establish a therapeutic relationship with the patient.

Other research has found a similar breadth of actions and interventions in these settings. A qualitative study of combined consumer and nurse interviews in Sweden suggested a variety of practices were undertaken by nurses in acute inpatient units (Salzmann-Erikson, et al., 2009). These focused largely on what might be termed custodial care, including the establishment of strong structures and rules, physical control and the coercive administration of medication, and the separation of patients from each other in order to prevent assault. However, interpersonal skills were also evident, in particular a positive regard, and simply spending non-intrusive time with the patients.

This view is consistent with much of the other literature regarding the role of the nurse in mental health, which has consistently emphasised the therapeutic relationship as the central feature (Altschul, 1972; Barker, 1990; Barker, et al., 1999b; Cowman, et al., 2001; Forchuk, 1991; Forchuk & Reynolds, 2001; Jackson & Stevenson, 2000; Peplau, 1997; Stockmann, 2005). The literature is split however, over the exact place of this relationship. Advocates such as Barker and others (Altschul, 1972; Barker, 1990, 2003; Barker & Buchanan-Barker, 2008; Barker, et al., 1999b) emphasise the quality of the caring relationship as the most crucial aspect, and as such suggest that it alone is sufficient to promise positive outcomes for patients. Others (Gournay, 2003a, 2003b) suggest that specific treatments improve patient outcomes in concert with the therapeutic relationship, although without the exclusive emphasis on the latter. Bee et al. (2008) note that consumers of mental health services do not differentiate between these perspectives but expect nurses to show flexibility in the roles they undertake. Research in Australia has suggested that patients still hold the interpersonal skills of nurses in high regard, alongside more concrete aspects of their role such as education and discharge planning (Cleary, Horsfall, & Hunt, 2003). In discussion and through research therefore, the literature considers the therapeutic relationship to be at least an important feature, and in most cases a central element, of the nursing care of people with mental health problems.

2.2. The Therapeutic Relationship

The therapeutic relationship between a nurse and patient is defined by Peplau (1997) as a specific interpersonal relationship in which recurring difficulties of life will arise. It describes the nurse and patient as working together towards a solution for a problem, and is distinctly different from social relationships. The partnership progresses through stages of orientation, working, and resolution, and is therefore not static but develops over time. The nurse's actions in this relationship include helping the patient identify the link between behaviour and psychological processes, assisting them to appropriately express and regulate their psychic distress, and helping the patient manage their current life circumstances (Crowe, 2004). This partnership is based on trust, and is believed to achieve positive outcomes for the patient through the development of the their understanding of themselves and of their health (Forchuk, 1991; Hummelvoll, 1996; Hummelvoll & Barbosa da Silva, 1994; Peplau, 1992, 1997; Stockmann, 2005).

The nurse's interpersonal proficiency is crucial to the development and maintenance of this relationship. For example, Parrish et al. (2008 p. 236) quote a participant in their study of advanced practice psychiatric nurses:

> *I guess I always fall back on the interpersonal aspect of treatment, believing the relationship with the person is part of the healing process. I want them to feel completely heard, understood, and accepted. Once I convey this through accurate empathy, the relationship changes and more healing moments occur.*

This statement encapsulates the centrality of the therapeutic relationship in mental health. It also conveys the aspects of the health professional that were considered by Carl Rogers to be the *necessary and sufficient conditions* for a sound therapeutic relationship and effective therapy (Rogers, 1957). In this seminal paper on the nature of therapist-client relationships he considered six essential conditions:

1. *Therapist-Client Contact:* that there is a relationship between the client and therapist.
2. *Client Incongruence:* that the client is in a state of incongruence, being vulnerable or anxious.
3. *Therapist Congruence:* that the therapist is genuine and therefore is congruent within the therapeutic relationship.
4. *Therapist Unconditional Positive Regard:* that the therapist accepts the client unconditionally, without judgment, disapproval or approval.
5. *Therapist Empathic Understanding:* that the therapist experiences an empathic understanding of the client's internal frame of reference.
6. *Client Perception:* that the client perceives, to at least a minimal degree, the therapist's unconditional positive regard and empathic understanding.

These conditions were explicitly defined and described with respect to psychotherapy, but are congruent with the nature of nursing in mental health as described by Peplau (1997) and Barker (1990), amongst others. Although there are different views of the development of the relationship, with Peplau (1997) suggesting it is a conscious process with an explicit theoretical basis, and Altschul (1972) emphasising the role of intuition, there is a consistent view that the relationship between the nurse and patient is patient-centred with an emphasis on trust, empathy and positive regard. The nurse is required to be congruent, authentic, and to display respect (Barker, et al., 1999b; Peplau, 1992, 1997; Stockmann, 2005). These aspects have been identified in research as necessary for nurses in mental health (Mason, et al., 2008a; Mason, et al., 2008b; Rydon, 2005), and suggest that in order to relate therapeutically, nurses must have both the ability, and the willingness, to do so.

2.2.1. The Value of the Therapeutic Relationship

This study examined the link between the work environment and the nurse's ability and willingness to engage therapeutically, as it was believed that the therapeutic relationship was of value to patients. Certainly patients state that the therapeutic relationship with the nurse is important to them, and nurses have identified it as a fundamental component of their role. However, there is also empirical evidence to suggest that sound relationships are related to positive patient outcomes. Much of this evidence is drawn from the psychotherapy and substance abuse literature over many years. For example, in early work at the Maudsley hospital in the UK, Cartwright (1981) argued that considerable evidence existed then of the value of the therapeutic relationship to patients. Evidence from more recent research has provided considerable support (Horvath, 2005), although under the guise of a variety of terms such as therapeutic or working relationship, or therapeutic or working alliance. It is acknowledged that these terms were initially coined to describe distinct concepts, but noted that in practice environments they are typically used to describe the therapeutic relationship (Bale, et al., 2006). Although it may be argued that these studies are not an examination of the therapeutic relationship as such, there are many similar features in the concepts described including collaboration, agreed goals and plans, and a relationship between therapist and patient (Martin, Garske, & Davis, 2000; McCabe & Priebe, 2004). Further, Bale et al. (2006) and others (Ritter, et al., 2002) have identified an explicit link between the therapeutic alliance and Rogers (1957) concept of person-centred therapy, in particular empathy, congruence and positive regard.

Studies that have investigated the link between the therapeutic alliance and patient outcomes exist in sufficient quantities to undertake systematic review. For example, a meta-analysis of 79 studies of the therapeutic alliance identified a moderate but consistent relationship between a strong alliance and positive outcomes (Martin, et al., 2000). Of interest, the reviewers found the effect to be independent of the type of treatment, supporting the view that the relationship alone has some independent value. This is consistent with the view of a taskforce of the American Psychological Association (Norcross, 2001). This taskforce reviewed research on the therapeutic relationship and concluded that it consistently contributed to substantially improved patient outcomes, regardless of the type of treatment. They also stated that the most effective aspects of the relationship were collaboration and empathy, followed by a positive regard, congruence or genuineness, and feedback, aspects of Rogers' *necessary conditions*, described above.

Other recent research has found long term benefit to patients of a strong relationship, and a positive linear relationship has been found between the strength of the therapeutic alliance and the patient's symptomatic improvement (Botella, et al., 2008). A study of 581 therapists in the United States found that when patient and other factors are taken into account, the therapist accounted for 5% of the variance in patient outcomes overall, and 35% for those patients concurrently on medication (Wampold & Brown, 2005). In Australia, the negative influence of a poor staff-patient relationship was identified in an audit of over 600 suicide deaths in Victoria (Burgess, et al., 2000). Other reviews have concurred that the therapeutic alliance or relationship is an important predictor of patient outcomes, and have suggested a focus on relationship building as a strategy to improve outcomes in Australian community mental health (Howgego, et al., 2003).

In contrast, a trial of the effectiveness of cognitive-behavioural therapy in schizophrenia found that patients in the treatment group showed sustained improvement in negative symptoms, and lower severity overall, at both 9 month and 5 year follow up (Sensky, et al., 2000; Turkington, et al., 2008). The control group in this study received a non-specific 'befriending' intervention, with some elements of a therapeutic relationship such as empathy, but without a strong patient focus or collaborative goal setting. Notably, both groups showed an improvement in symptom reduction at the end of the treatment period, suggesting some effect of the befriending intervention, although this improvement was not maintained. There is therefore an implication that the relationship itself has at least a short term effect on symptoms.

However, as is noted in much of this literature, it is difficult to imagine implementing many psychotherapeutic treatments *without* a therapeutic relationship, so that even if the effect of the treatment is measured somewhat independently, the effect of the relationship is always present. In practice therefore, these studies are often measuring the effect of the therapeutic relationship in combination with a given treatment. This point is supported by Beutler and Harwood (2002) in a review of two psychotherapeutic intervention studies. They found that patient outcomes were a consequence of the interaction of interventions, relationship qualities, and the matching of the treatment to the patient's needs. They therefore suggest that the therapeutic relationship cannot be understood as an entity separate from interventions and patient needs.

In mental health nursing, a number of studies have sought to examine the outcomes of nursing work including the nurse-patient relationship, while usually not measuring the quality of the relationship itself. Indeed, the measurement of the intricacies of the therapeutic relationship in nursing is a contentious issue, and qualitative approaches have been more readily applied (Chambers, 1998; Scanlon, 2006; Welch, 2005). Aside from the measurement of the presence or absence of the relationship as documented by Forchuk et al. (1989; 2005), studies that have examined the therapeutic relationship have surveyed consumer or nurse perceptions, or applied more objective, but proxy, measures such as the amount of nurse-patient interaction.

For example, in a cross-country study of patient reflections on the nurse-patient relationship, Forchuk and Reynolds (2001) asked patients for their view of the nurse-patient relationship. They found that service users expressed a view congruent with that of prominent authors such as Peplau (1997) and Barker (1990, 2003): that it was the foundation of their nursing care. In terms of outcomes, patients who perceived effective relationships with nurses were less likely to drop out of treatment. Also of note were the aspects of the interactions considered most effective by patients: a caring approach, a positive manner in interactions, and the implementation by the nurse of any agreed plans between meetings. Similarly, in a survey of consumer satisfaction with discharge planning in Australia, Cleary, Horsfall and Hunt (2003) noted the importance of the quality of the relationship and subsequent effective plans. These findings are congruent with the factors identified previously (Rogers, 1957), as a caring approach and positive manner imply unconditional positive regard and an empathic understanding, together with genuineness. There is also a clear aspect of collaboration and partnership in the development and implementation of a mutually agreed plan. Although these studies did not analyse outcomes in terms of long-term wellness or recidivism, they provide support to the view that the therapeutic relationship alone is of benefit to patients.

Drawing in part on seminal work by Altschul (1972), several studies have sought to examine the amount of nurse-patient interaction, and to then link it to outcomes such as aggression or readmission. In early research by Whittington and Wykes (1994a), an increase in violent incidents was noted around the time that nurses were interacting more with other staff, and therefore least available to patients. They also identified that nurses who engaged in high frequency interaction with patients were at greater risk of violence, and suggested that there was a ‘middle ground’ in the amount of nurse-patient interaction. Coleman and Paul (2001) determined that the time staff (nurses and other direct-care clinical staff) spent with patients

was linked to higher discharge rates and longer stays in the community before readmission. Others have found that the establishment of better relationships, rather than a specific amount of interaction, increased the understanding between nurses and patients and decreased the risk of violent acts (Salzmann-Erikson, et al., 2009). This last point suggests that it is the quality of the relationship, rather than the frequency, that is the most important aspect.

However an integrative review of the literature examining nurse actions in mental health, such as the provision of specific treatments like medication management or psychodynamic therapy, identified a lack of conceptual clarity in the patient outcomes being measured, diverse patient populations and practice settings, and different follow up periods (Montgomery, Rose, & Carter, 2009). This reflects the findings of earlier investigations that noted that differentiating the impact of nurse interventions and those of other health professionals in multidisciplinary teams can be problematic (Dallender, et al., 1999; Tummers, et al., 2001). A systematic review of nurse interventions in UK mental health made similar comments in regard to the definition of outcomes, but also suggested that treatments such as cognitive-behavioural therapy did provide positive outcomes in terms of symptom reduction (Curran & Brooker, 2007). Few of these studies intended to examine the effect of the therapeutic relationship, although it is acknowledged that randomised control trials, the defining research method for inclusion in these reviews, may not contain measures of the quality of this relationship.

Nursing research into the nature of the therapeutic relationship has typically been qualitative and descriptive. Welch (2005 p. 161) suggested that the “mercurial aspect of the therapeutic relationship makes it at once instantly recognizable, but perennially unfathomable”, and in order to address this quandary, analysed the reflections of nurses on the relationship. These nurses identified trust, congruence, authenticity, power-sharing, and empathy as major themes of quality nurse-patient relationships. Similarly, a grounded theory examination of the relationship (Scanlon, 2006), described trust and being non-judgemental as important aspects of attitude. Informants in that study also recognised the influence of time constraints, identified a substantial mutual learning component, and suggested that many of the skills required in the therapeutic relationship could not be learned in the classroom but rather were a consequence of individual personal development. This last point is in some conflict with Rogers’ and Peplau’s work that suggested that interpersonal skills can be acquired academically, but may also indicate a devaluing of nursing skills, as noted in early research

where nurses identified 'common sense' as the primary skill of the nurse in mental health (Altschul, 1972; Tilley, 1999). Aside from this however, the elements identified in these investigations are consistent with research from other disciplines and are consistent with the elements necessary for successful relationships as defined by Rogers (1957).

2.3. Influences on the Therapeutic Relationship

It is important to note that in the current study there will be no attempt to measure the therapeutic relationship as such. Rather, it is focused on the factors that impact the essential attitudinal precursors for that relationship: the nurses' ability and willingness to engage. These influential factors may be aspects of the individual, the nature of patients, or a range of characteristics of the organisation or work environment.

2.3.1. Individual Factors

The education and experience of health professionals are often cited in the psychotherapy literature as important influences on their capacity to engage successfully with patients (Horvath, 2005; Hughes, et al., 2008). Education imbues the individual with appropriate skills, improves their confidence to apply those skills, and affects their attitude towards engaging and intervening. For example, a study of the attitudes to suicide of health professionals in Sydney found that education was a significant predictor of a more positive view towards prevention and intervention (Brunero, et al., 2008).

As described earlier (see Chapter 1), concerns have been raised in the Australian nursing literature regarding the skills of nurses working in mental health over the past several decades. This discussion has been linked to the massive transformation of nursing education that occurred during that period (Charleston & Happell, 2004; Happell, 1998b, 2008b; McCann, et al., 2009; Wynaden, et al., 2000). Concurrent with the movement of all pre-registration nursing training to the higher education sector, mental health nursing direct entry courses closed in the late 1980s (Department of Education Science & Training, 2002). It has been suggested that the comprehensive undergraduate courses established in this process have diluted the mental health content over time (Happell, 1998a), and wide variation in the type and amount of mental health content has been noted (Clinton, 2000; Farrell & Carr, 1996; Nurses Board of Victoria, 2002), suggesting a level of inconsistency in the skills of graduates. More recent research has indicated an overall increase in mental health theory and practice hours, although the variation remains and recommendations have been made for more similarities between

courses (Mental Health Nurse Education Taskforce, 2008). It has also been suggested that inadequate preparation in this field in undergraduate courses is increasing the imperative to address it successfully post-registration (Hayman-White, Happell, & Charleston, 2007).

With respect to postgraduate education, little published data are available on the content or operation of these courses in Australia. In NSW, the *NSW Mental Health Enhancement Program* was established in 2001 (Pagnini, 2005). A number of new courses were thereby established and funding for scholarships provided. However, there have been fewer enrolments than expected despite this support, with only 425 between 2001 and 2004. This finding has been supported by independent work that notes relatively few nurses undertaking mental health education when compared to the size of the profession (NSW Labour Economics Office, 2008). A review of all postgraduate mental health nursing curricula was also funded through the enhancement program, although the results are not published. Nonetheless, despite the lack of available evaluations of these courses, they remain the primary process by which nurses acquire specialist mental health skills (Mental Health Nurse Education Taskforce, 2008).

So, with questions regarding the consistency of pre-registration programs, and with fewer than a third of those working in the field possessing postgraduate qualifications (Australian Mental Health Workforce Advisory Committee, 2008a), and despite the number of nurses with direct-entry pre-registration qualifications (White & Roche, 2006), there must be some doubt about the skills of the nursing workforce in mental health. It is suggested by some that in order to address this issue there should be a reversion to direct-entry courses (Stuhlmiller, 2005), or the adoption of hybrid courses akin to the 'branched' approach in the United Kingdom and in parts of Victoria (Happell, 2009). It has also been suggested that the current crowded three year undergraduate program may not provide sufficient time for adequate clinical experience and theoretical content for a complex and varied workplace (Roche & Duffield, 2007).

Regardless of the format, in keeping with the role of the nurse in mental health as identified above, educational preparation should develop skills suitable for a wide range of roles. Generic skills are suited for undergraduate education and more advanced levels, along with additional skills, may be applied to postgraduate education (Mental Health Nurse Education Taskforce, 2008). Again, considering the emphasis on the therapeutic relationship and the value it provides to patients, the development of strong interpersonal skills should be upmost, as these are the cornerstone (Waite, 2006). That is, without an educational

foundation that provides the basic requirements of the role, nurses may not be able to engage effectively with patients, or may even engage in a relationship that is not helpful for the patient (Moyle, 2003).

The primary interpersonal skill identified by advanced practice psychiatric nurses in the United States was active listening, which was seen to be fundamental in developing a partnership with the patient (Parrish, et al., 2008). A common technique for acquiring such skills is experiential learning, both through classroom exercises and through guided experience in clinical settings (Burnard, 2002; Higgs, et al., 2008). Indeed, role plays in particular have been found in Australia to influence student nurses' attitude to working in mental health, as well as to develop the confidence to apply their interpersonal skills (Curtis, 2007).

Without a detailed evaluation of the content of postgraduate courses aiming to prepare nurses for mental health it is not possible to determine whether they aim to develop interpersonal skills at a high level. However, in the proposed study, the potential influence of education on the individual's skills and attitude, and therefore on their ability to engage therapeutically, was considered important. It was not possible to assess nurses' skills more directly, so the level of educational qualification was adopted as a measure of this factor.

The acquisition of necessary skills and the development of positive attitudes occur in both classroom and clinical settings, and in this sense experience may be seen as an extension of education. It is through experience in the clinical environment that nurses are exposed to a variety of situations and with appropriate interpretation of these situations learn to adapt and apply their skills in future. This mechanism of skill development has been described in social cognitive theory, in which supported experience and feedback assist the interpretation of events in a way that enhances learning (Bandura, 2001; Brown, Jones, & Leigh, 2005). In nursing, a similar process was described by Benner (1984) in her seminal work on the capabilities of nurses from novice to expert levels.

Experience in the clinical environment is therefore a potential influence in the nurses' ability to relate therapeutically. In general nursing settings, more years of nursing experience has been found to decrease the rate of adverse events such as medication errors (Chang & Mark, 2009; Duffield, et al., 2007; Tourangeau, et al., 2002), and to improve patient satisfaction (Tervo-Heikkinen, et al., 2008). In mental health, experience has been identified by nurses as an important component of effective practice (Mason, et al., 2008a; Mason, et al.,

2008b). Also, a small Australian study (n=43), found that nurses with less than 2 years of experience displayed high stress levels, while those with more than 5 years in the area to be more able to understand and control their emotions (Humpel & Caputi, 2001).

In this study, in keeping with other studies that have captured this variable, experience was measured as years worked in nursing. In addition, as nurses may have many years of experience overall but few in mental health, the number of years worked in mental health was also collected.

2.3.2. Patient Factors

Alongside nurse education and experience, patient characteristics may also influence the nurses' ability and willingness to engage therapeutically. It has been noted that patients severely affected by psychotic illness may be reluctant to engage with health professionals (Howgego, et al., 2003), and it is easy to imagine the challenge of engaging a severely psychotic or violent individual. Research in the United Kingdom has documented the difficulty nurses have in engaging patients under such circumstances (Brennan, et al., 2006).

In studies of the effect of the environment on nurse or patient outcomes in general nursing areas, patients characteristics are often captured as potentially confounding variables, usually through diagnosis or acuity measures (Duffield, et al., 2009c; Duffield, et al., 2007; O'Brien-Pallas, et al., 2004). Similarly, in a study conducted on the functional outcomes of long-term mental health inpatients, both diagnosis and Global Assessment of Functioning (GAF) scores were collected as controlling variables (Alexander, et al., 2005). Although these factors were found to be predictors of improved daily living skills, a stronger factor was the amount of staff participation in teamwork and, as noted by the researchers, this method has not been replicated in other environments and further testing is warranted.

In contrast, it was found in a Norwegian community mental health study that patient characteristics was a relatively small contributor to patient satisfaction with the therapeutic relationship (Bjørngaard, Ruud, & Friis, 2007). Factors such as diagnosis were not statistically significant in that study, although the patient's mental state and functional ability were. In addition, in a study of physician mental health, it was found that patient characteristics, measured by the number of psychosocial problems documented, were not related to job satisfaction (Williams, et al., 2002).

However, in mental health nursing, Forsyth (2007) examined the impact of diagnosis, primarily as a label, on the engagement of the nurse. Nurses were found to relate more empathetically towards patients with a diagnosis of major depression, compared to borderline personality disorder. This suggests the nurses' attitudes were influenced by the diagnosis, and that therapeutic engagement was to some degree dependent on diagnosis.

In this study, it was not possible to access patient files directly, due to the potential identification of individuals with a small sample of wards. Patient diagnosis could therefore not be captured. Nor were resources available to collect individual patient information on other potential measures of patient mental state such as the GAF scale. Given these issues, the links noted between mental state and therapeutic engagement, and the diagnostic homogeneity implied in the use of legal status in the grouping of Australian Refined Diagnosis Related Groups (AR-DRGs; Department of Health and Ageing, 2009a), the proportion of voluntary patients on a ward was chosen as an indirect factor that may influence the patient's ability to engage with the nurse.

2.3.3. Work Environment Factors

A number of factors in the work environment (the surrounding conditions or influences at work) have been proposed to influence the capacity of the health professional to engage in a therapeutic relationship. For example, in Australian mental health research it has been suggested that competition between institutional policies and therapeutic imperatives, that is, reduced control over practice, has decreased nurses' job satisfaction and made it difficult for them to engage patients in the therapeutic relationship (Cleary, 2004). This is consistent with a broad range of research in mental health and general nursing, where this and other aspects of the work environment such as organisational support, nursing leadership, relationships with colleagues, staffing, workload, and resources, have been linked to nurse and patient outcomes (Aiken, et al., 2008; Alexander, et al., 2005; Brunt & Rask, 2007; Duffield, et al., 2007; Kane, et al., 2007; O'Brien-Pallas, et al., 2004). In this study, these factors were hypothesised to influence the pre-conditions for therapeutic relationships, and are explored later.

2.4. Summary

In the context of considerable change in the inpatient mental health work environment, including an increased emphasis on multidisciplinary work and specific treatments, changes in medication, educational preparation and organisational restructure, the therapeutic

relationship between nurse and patient remains the central focus of nursing work in mental health. This relationship seeks to improve patient outcomes through a partnership that assists the patient to grow and develop strategies to understand and manage their mental health problem. Research suggests there is considerable gain for patients in a therapeutic nurse–patient relationship, and in order to establish it the nurse needs to possess a number of skills and an appropriate attitude, embodied in Rogers' (1957) conditions for a successful therapeutic relationship. Therefore, factors of the individual or environment that may influence the ability of the nurse to interact therapeutically, have the potential to impact the patient's care and are of interest in this study. Research in general nursing and other health areas has established a number of factors in the work environment that influence nurse and patient outcomes. The following Chapter reviews that literature in order to identify those factors that may impact nurses in mental health.

3. The Nursing Work Environment

Nurses comprise a large proportion of the workforce that is required to meet the increasing need for mental health services. However, changes in nurse education, organisational structure and practice have been linked to inconsistent skills and a challenging work environment. Aspects of this environment are posited to influence the nurse's ability to undertake their role. This role is varied although the central focus remains the therapeutic nurse-patient relationship. Nurses must display the essential attitudinal conditions to undertake that relationship, in particular they must be willing and able to relate to the patient. Therefore, factors that influence the nurse's capacity to engage in that relationship are important.

This Chapter examines the nursing work environment. Characteristics of that environment that have been found to be influential in patient and nurse outcomes in the general nursing and wider literature are considered in regard to their potential effect on the nurse's ability and willingness to engage therapeutically in the mental health setting. Where available, mental health literature that proposes or identifies similar factors is included.

The work environment was described earlier as the surrounding conditions or influences at work. More specifically, it can be defined as "the surroundings of, and influences on, a particular item of interest; all the elements that affect a system or its inputs and outputs" (Wiktionary, 2008 n. p.). In the broader literature a number of terms have been used to depict this concept. These include the organisational or work culture, organisational or work climate, job or organisational environment, job or social context, or task environment (Allvin & Aronsson, 2003; Sleutel, 2000). In nursing, it is common to refer to the nursing practice environment or nursing work environment (e. g. Aiken, et al., 2008; Estabrooks, et al., 2002; Lake & Friese, 2006; Li, et al., 2007; Rafferty, et al., 2007). Although each of these terms may indicate a different perspective on the environment, particularly in regard to measurement (Sleutel, 2000), they identify similar elements of interest. These include staffing levels (Aiken, et al., 2002b), workload (Duffield, et al., 2009c; Duffield, et al., 2007; O'Brien-Pallas, et al., 2004), skill mix (Needleman, et al., 2002), the value placed on nursing in the organisation (Kramer, Schmalenberg, & Maguire, 2004), the degree to which nurses are involved in staff development (Kramer & Schmalenberg, 2004), the relationships between nurses and

colleagues (McGillis-Hall & Doran, 2004; McGillis-Hall, Doran, & Pink, 2004), nursing leadership and support (Bakker, Demerouti, & Verbeke, 2004; Upenieks, 2003a), and patient turnover (Duffield, et al., 2009a).

Many of these factors were first identified in hospitals that were able to recruit and retain nurses during a period of severe staff shortages in the United States during the 1980s. These hospitals, referred to as *Magnet Hospitals*, were found to provide adequate, flexible staffing; strong career development through continuing education and promotion opportunities; and encouragement for nurses to practice their clinical expertise (Kramer, 1990; Kramer & Hafner, 1989; Kramer & Schmalenberg, 1988, 1991a, 1991b; McClure, et al., 1983). These organisations typically incorporated nursing leadership through the installation of a well qualified nurse executive in the highest echelon of the organisational structure, empowered and supportive nurse managers, and a decentralised, open and participatory management approach. These characteristics were seen to encourage autonomy, participation and accountability for nurses, and were reflected in increased job satisfaction, lower turnover and reduced vacancy rates (Buchan, 1994; McClure, et al., 1983; Upenieks, 2003b).

Subsequent studies found a relationship between the organisational factors identified in these hospitals and patient outcomes. For instance, Aiken, Smith and Lake (1994) compared mortality rates for Medicare patients in 39 magnet and 195 non-magnet hospitals. After controlling for nurse staffing, hospital characteristics such as size and type, and for predicted mortality rates, they found that the magnet hospitals had a 4.6% lower mortality rate than non-magnet hospitals. As this analysis controlled for a number of extraneous variables, it provided an indication that environmental factors had an independent effect (Aiken, Sloane, & Sochalski, 1998).

More recent research across a broad range of hospitals internationally has supported these findings. For example, high patient to nurse ratios were found to link to higher 30-day mortality and other negative outcomes in surgical patients (Aiken, et al., 2002b; McGillis-Hall, et al., 2001; O'Brien-Pallas, et al., 2002; Rafferty, et al., 2007; Sasichay-Akkadechanunt, Scalzi, & Jawad, 2003; Tourangeau, et al., 2002) and lower total hours of nursing care were related to increased rates of medication errors, falls, patient complaints, and increased length of stay (Cho, et al., 2003; McGillis-Hall, et al., 2001). High workload has also been found to be a predictor of higher costs and reduced quality of care (O'Brien-Pallas, et al., 2004), and in recent Australian research it was linked to a high rate of medication errors (Duffield, et al., 2007). In

addition, a range of negative patient outcomes sensitive to nurse staffing and skill mix, such as pneumonia, urinary tract infections, wound infections and emboli have been identified from administrative data (Cho, et al., 2003; Needleman, et al., 2002; Needleman, et al., 2001).

Several reviews have been undertaken of this body of research, particularly that focused on nurse staffing levels. A meta-analysis of 28 studies (Kane, et al., 2007) found a high degree of consistency in the relationships between the input variables such as staffing and skill mix, nurse outcomes such as job satisfaction and burnout, and patient outcomes such as mortality and adverse events. Similarly, a systematic review of 22 large studies identified a clear relationship between nursing staffing, skill mix and patient outcomes, although the size of the effect could not be reliably quantified (Lankshear, Sheldon, & Maynard, 2005). Finally, in a synthesis of the literature, Dall et al. (2009) concluded that increased nursing staffing levels were linked to decreased rates of a wide range of negative outcomes for patients, along with shorter lengths of stay. Each of these reviews notes that along with staffing and skill mix, other factors in the work environment are also important influences, although inconsistently measured across various studies.

Together, this research indicates that positive general nursing work environments link to better outcomes for nurses and patients. In the mental health literature such extensive research has not been undertaken, although many of these elements have been identified. For example, in a comparison of nurses in psychiatry and general wards in the United States, Hanrahan and Aiken (2008) noted that mental health nurses evaluated their work environments more negatively overall, also reporting lower quality of care and higher rates of adverse events. Early Australian research (Clinton, 2000) identified a lack of control over practice as a significant stressor, a finding repeated in more recent work (White & Roche, 2006). Reports have also found a lack of support and supervision for nurses in mental health (NSW Legislative Council Select Committee on Mental Health, 2002; Senate Community Affairs References Committee, 2002) and low staffing levels have been identified by consumers as as an impediment to recovery (Happell, 2008a). These characteristics of the work environment are proposed to influence the nurse's ability and willingness to engage therapeutically with patients.

3.1. Factors in the Work Environment

Factors established in the literature discussed below include staffing, skill mix, patient turnover, nursing leadership and support, nurse relationships with doctors, and opportunities for professional development. Each of these characteristics has the potential, together with the features of the individual nurse and patient, to influence the nurse's capacity to relate therapeutically.

3.1.1. Staffing & Workload

Although the terms are sometimes used interchangeably, nurse workload and staffing are different, but related, concepts. Workload is measured directly and incorporates patient acuity into the calculation (Duffield, Roche, & Merrick, 2006). For example, workload may be measured using patient acuity instruments (ExcelCare, 2004; Hovenga, 1996; Trend Care Systems Pty Ltd, 2004), casemix (Diers, 1999), or by detailed examination of the number and duration of tasks required per patient (Chagnon, et al., 1978). In contrast, staffing is an indirect indicator of workload, as it does not determine actual requirements for care. However, it is more readily available and is less resource intensive to collect and calculate.

Staffing has been identified in the general nursing literature as a significant influence on nurses' ability to complete their tasks and to relate to decreased job satisfaction. For example, in a study of nurses across five countries it was found that low staffing and increased workload often meant omitting basic nursing tasks, leading to nurses' perception of providing low quality care, and consequent decreased job satisfaction (Aiken, et al., 2001a). Other studies have also linked inadequate staffing and high workload to lower job satisfaction (Blegen, 1993; Gunnarsdóttir, et al., 2007; Vahey, et al., 2004). In a large study across a range of medical-surgical hospitals, Aiken et al. (2002b) showed that each additional patient per nurse was related to a 23% increase in the chance of burnout and a 15% increase in the chance of job dissatisfaction. More specifically a study of 473 general nurses in Spain found that job stressors such as workload were predictors of aspects of burnout such as depersonalisation and emotional exhaustion (Garrosa, et al., 2008). The influence of other resources, such as supportive clerical staff, on nurses' workload must also be considered (Aiken, et al., 2002b).

The findings from general nursing have been echoed in mental health. Aronson (2005), in a study of all staff in 39 private psychiatric facilities in the United States (n=3024), found that nurses were generally less satisfied with their job than health professionals in other disciplines,

and that this was related to staffing as well as other organisational factors such as management support and supervision. Similarly, a systematic review of research relating to stress management interventions for mental health nurses in the United Kingdom found that in addition to overall support, resources, and administrative duties, workload and low staffing were significant sources of stress and decreased job satisfaction (Edwards & Burnard, 2003).

Environmental factors that influence job satisfaction and burnout have also been identified in research outside the health field. Bakker et al. (2004) found that aspects of a job such as high workload, role overload, and poor environmental conditions were associated with job dissatisfaction, burnout, disengagement from the job and poor work performance. They suggest that job stressors can reduce an individual's capacity to exert control over the work environment, thereby adversely affecting their engagement and efficiency.

Early research in mental health also examined the link between nurses' job satisfaction and their subsequent attitudes and behaviour. Whittington and Wykes (1994a) examined a model that linked nurse behaviour to stress reactions based on anxiety, burnout and post-traumatic stress. They determined that nurses who were more socially distant and avoided patients were at higher risk of assault (Whittington & Wykes, 1992, 1994b). Also, in a small one ward study, James et al. (1990) found a substantial increase in the number of violent incidents over a 15 month period, concurrent with a halving of the number of permanent nursing staff, and a corresponding increase in agency staff usage. It was suggested that continuity and stability on the unit suffered and that agency staff, unfamiliar with the unit, adopted a more custodial role. The increase in violent incidents was viewed as a consequence not of staffing numbers, but of the behaviour of staff related to their lack of familiarity with the ward and subsequent model of care. A more recent study has suggested that this outcome may also be a function of the absence of regular staff who establish supportive relationships with other staff and patients, as well as providing continuity, monitoring and assessment (Bowers, et al., 2007). These findings could be viewed as a corollary of staff stability issues identified in medical-surgical nursing studies, in particular Adams and Bond (2003a; 2003b), who found that staff stability was significantly related to quality of care.

Inadequate staffing and high workload may increase nurses' stress and decrease their job satisfaction. These factors have been linked to burnout, where nurses have insufficient emotional energy for their work, find it difficult to recognise the human qualities of patients, disengage from the job and feel they have accomplished little (Maslach, Jackson, & Leiter,

1986). Nurses who demonstrate these behaviours and attitudes are unlikely to possess the willingness to relate therapeutically to patients. In support of this view, the perceptions and attitudes of clinical staff in regard to readmitted patients has been proposed as a contributing factor in further admissions (Bernardo & Forchuk, 2001).

In addition to the impact on attitude and behaviour, staffing levels are linked to the opportunity to interact with patients and colleagues. In mental health, some studies have measured the influence of staffing on nurse-patient and nurse-nurse interactions. However, compared to the number and scope of studies in general nursing, there is comparatively little research in mental health, and even less that is recent. An examination of these early studies provides an indication of the amount and nature of nurse-patient interactions, and some suggestions regarding the outcomes of those interactions.

Staffing Ratios, Interaction & Support

Adequate staffing is the basis for increased nurse-patient interaction in mental health. This provides opportunity for therapeutic activity and therefore potentially impacts on patient outcomes (Sandford, Elzinga, & Iversen, 1990). Observation of nurses in mental health units has revealed considerable variation in the amount of time nurses spend with patients. Studies in the United Kingdom found that between 21.8% and 42.7% of nurses' time was spent interacting with patients, 18.7% to 42.9% interacting with other staff members and up to 50% on administrative activities or other solitary tasks (Martin, 1992; Whittington & McLaughlin, 2000). In a self-reporting study in London inner city admission wards, Ryrie et al. (1998) observed that up to 73.5% of nurses' time was spent in non-patient contact such as locating beds for admissions and transfers in addition to time-consuming administrative duties. Australian research described similar amounts of interaction, with figures ranging from 19.3% to 42.5% (Hodges, Sandford, & Elzinga, 1986; Sandford, et al., 1990; Tyson, Lambert, & Beattie, 1995).

Studies have also examined the relationship of staffing to the ratio of nurse-nurse interactions and nurse-patient interactions in mental health. A study of eight units (253 beds) in New South Wales determined that the overall ratio of nurse-patient interaction to nurse-nurse interaction was almost 1:1. However, this ratio differed between 'acute' and 'chronic' type units, with nurses on the latter spending more time with patients (Tyson, et al., 1995). In South Australia, Hodges et al. (1986) found that as staffing improved on acute units, nurse-patient interaction increased, while on chronic units as staffing improved, nurse-patient

interaction decreased. Sandford et al. (1990), also in South Australia, altered staffing levels on several units and examined changes in interactions. They found that as staffing improved only nurse-nurse interaction increased, and suggest that improved staffing facilitated teamwork and mutual support. Some support for this was found by Cleary (2003a) in an ethnographic study of one ward in Sydney where nurses allocated specific time to meet with colleagues.

Given the variation in these results based on ward type, it can be suggested that the different environmental characteristics placed different demands on nurses that reduce the time available for patient interaction, or that it is the nature of care required for patients in different phases or types of mental illness. For example, it might be that nurses are communicating and planning care with other nurses, or providing and receiving support from colleagues, activities that could differ depending on patient care requirements. Indeed, it has been suggested that the maximum proportion of 42.5% spent in nurse-patient interaction, found by Hodges et al. (1986), was a function of a 'chronic' type of unit with a structured therapeutic program (Tyson, et al., 1995).

Some studies have attempted to measure not just the quantity of interactions, but the quality also. An observational study by Tyson et al. (1995) identified that 25% of nurse-patient interactions could be regarded as 'positive', with a greater proportion of positive interactions occurring in chronic ward types. In other research, interactions determined to be 'potentially therapeutic' have been found to be occurring at very low rates, less than 7% (Whittington & McLaughlin, 2000). However, the ability to accurately and consistently determine whether an interaction is positive, or potentially therapeutic, is an acknowledged limitation of these studies.

Although this early research must be viewed with caution in application to current mental health services, it does suggest that staffing numbers have an impact on the amount of time nurses spend with patients. Other work has also indicated that staffing is important in this regard, while also acknowledging the impact of the broader work environment (Cleary & Edwards, 1999; Cleary, et al., 1999; Cleary, Walter, & Hunt, 2005; Deacon, 2003). Further, some research in the United States has linked staffing and interaction to patient outcomes such as discharge rates, seclusion use, and readmission.

A study at one large public psychiatric hospital over a two year period found that improving staffing ratios correlated with a decrease in the use of seclusion and restraint (Donat, 2002).

The higher frequency and quality of staff-patient interactions, permitted by improved staffing numbers, were suggested to improve relationships and to therefore reduce reliance on seclusion. Although this study did not differentiate between nurses and other direct-care providers, or attempt to measure aspects of the relationship itself, improved staffing was identified as an important factor in improving the development and implementation of behavioural treatment plans, and in providing time to undertake staff development activities. Similar findings were evident in another single hospital study, over a ten year period (Smith, Davis, & Bixler, 2005).

Coleman and Paul (2001) linked the amount of time staff spent with patients to outcomes through the concept of 'staff attention'. That is, the time of attention staff (nurses and other direct-care clinical staff) provide to patients. Their work-sampling approach was similar to that in studies examining the time nurses spend with patients, although they did not disaggregate the categories of staff. They found that staff-patient ratios alone explained some of the variance in the length of time the patient stayed in the community before readmission and discharge rates. However, the inclusion of staff attention into the analysis showed that time before readmission was closely related to staff attention (accounting for 33% of the variance) and that there was a similar although less powerful relationship between staff attention and discharge rates.

In both of these studies, without specific identification of nurse-patient interaction, it is not possible to state categorically that these outcomes are linked to nurse staffing. The findings must be considered cautiously and with regard to the differences between health systems. However, they do provide support to the view that staffing impacts the amount of nurse-patient interaction and consequently the ability of the nurse to undertake therapeutic work.

Overall, little recent research has investigated nurse staffing in mental health, but an examination of the existing work suggests that adequate nurse staffing provides opportunity for nurses to interact with each other and patients, and to relate therapeutically to patients. It has also been suggested that staffing may impact patient outcomes such as the use of seclusion and time to readmission. Studies in general nursing and other areas of research, along with that work that has been undertaken in mental health, have indicated that insufficient staffing may negatively influence nurse job satisfaction, attitudes and behaviours.

Patient Turnover

In addition to staffing numbers, the movement of patients on and off the ward is also a component of nurses' workload and limits the opportunity to interact with patients. Similar to general nursing wards, in inpatient mental health it has been observed that nurses are often working with patients for short duration admissions, in the most acute stage of their illness (Cleary & Edwards, 1999; Coleman & Jenkins, 1998; NSW Legislative Council Select Committee on Mental Health, 2002; NSW Mental Health Sentinel Events Review Committee, 2005). This is most obviously attributable to decreased length of stay, although transfers in and out of the ward must also be considered.

The average length of stay in mental health units in public acute (general) hospitals in Australia has varied little during the past 10 years (Australian Institute of Health and Welfare, 2008a; Moore, et al., 2000), although there has been an overall reduction over 30 years (Alwan, Johnstone, & Zolese, 2008). There is also considerable variation between diagnostic groups. For example, the average length of stay for AR-DRG *U61A Schizophrenia Disorders with Mental Health Legal Status* dropped 6 days between 1998 and 2007, while patients in other AR-DRGs, notably mood disorders, had longer stays (Australian Institute of Health and Welfare, 2009).

However, length of stay is calculated on a hospital or episode basis (NSW Health, 2007) and does not account for the movement of patients between wards. This movement on and off the ward, a concept described as *patient churn*, is a consequence of the imperative to improve hospital efficiency through the treatment of all beds as equivalent (Duffield, et al., 2009a). It has been identified as a significant issue in NSW general hospitals and has been recognised internationally as having an impact on nurses' workload in medical-surgical settings (Birch, et al., 2003; Rimar & Diers, 2006; Unruh & Fottler, 2006). This turnover of patients involves the handover of care and associated documentation, along with the work required to assess and plan care for the new patient on the ward. Unruh and Fottler (2006) found that Registered Nurse (RN) to patient ratios alone considerably underestimate the amount of work required for patient care unless churn is taken into account and it has been estimated that between 60 and 90 minutes of nursing time is required per admission, discharge, or transfer (Cavouras, 2002).

Most acute general hospitals in NSW have only one mental health ward (Australian Institute of Health and Welfare, 2008a). However, a number have designated *observation, acute* or

rehabilitation mental health beds that may be physically removed, staffed at a higher or lower level, and considered separate wards (e.g. NSW Health, 2009). Movement between these wards may therefore occur, and nurses also report numerous transfers between hospitals because of local bed shortages, or to and from general wards to address physical health issues (Mental Health Council of Australia, 2005; NSW Mental Health Sentinel Events Review Committee, 2005).

Some research in mental health has documented increased workload and other effects as a result of this patient turnover. In a study of London inner city admission wards, nurses reported that locating beds for admissions and transfers was one of their most time-consuming administrative duties (Ryrie, et al., 1998). More recently, Bowers et al. (2009) found that patient turnover was associated with higher rates of violence on 136 inpatient mental health wards in the UK. This may be an indication that therapeutic relationships are not being effectively formed during short admissions, although further research is needed to explore this finding.

In Australia, a qualitative study of a single mental health ward in NSW found that patient turnover was a significant issue for nurses as it limited their capacity to interact with patients (Cleary & Edwards, 1999; Cleary, et al., 1999). Respondents in that study identified admissions, discharges and transfers as impacting on their ability to spend sufficient time with patients to develop and maintain their relationship. In addition, temporary movements of the patient for a range of reasons more particular to mental health, such as legal proceedings and welfare activities, were considered limiting as it disrupted continuous time with the patient. More recent research in the same NSW environment has noted that these issues and reports of their effect remain (Cleary, 2004).

Patient churn, the movement of patients on and off the ward, may be considered an influence on the capacity of the nurse to engage in the therapeutic relationship from several perspectives. The opportunity to interact with patients may be reduced due to the increased overall workload and the reduced time the patient is on the ward. Also, similar to high staff turnover, where frequent changes of nursing staff have been noted to undermine the nurse-patient relationship (Bryant, Craik, & McKay, 2005), the continuity of the relationship may be broken as patients move. Continuity has been acknowledged as important in the development of a trusting therapeutic relationship (Wierdsma, et al., 2009). Finally, it has been suggested that a high rate of turnover may result in a change in the nature of nurse-patient interactions.

That is, the limited opportunity for contact may alter the nature of the interaction from a therapeutic focus to a more reactive, or even custodial, approach (Gijbels, 1995).

The opportunity for nurses to interact with patients in mental health may be influenced by staffing, overall workload and by the turnover of patients. Another factor related to staffing and workload that has been associated with nurse and patient outcomes in general nursing is the mix of nursing skills on the ward.

3.1.2. Skill Mix

Although nurse staffing has been linked to nurse and patient outcomes, skill mix is also a pertinent factor. Skill mix has been broadly defined as the combination of different categories of health care workers employed for the provision of care to patients in hospitals (McGillis-Hall, 1997). In nursing, it is usually expressed as the proportion of RNs (Aiken, Sochalski, & Anderson, 1996; Duffield, et al., 2009c; Duffield, et al., 2007; Shullanberger, 2000; Van den Heede, et al., 2007). Lower skill mix denotes a reduction in the proportion of RNs and an increase in the proportion of Enrolled Nurses (EN) or Assistants in Nursing (AIN). This factor has been established in studies of general nursing to be an influence on patient outcomes.

A number of North American studies have found that in medical-surgical settings a higher proportion of RNs was associated with decreased rates of negative patient outcomes such as medication errors, hospital-acquired infections, and 30-day mortality (Estabrooks, et al., 2005; McGillis-Hall & Doran, 2004; McGillis-Hall, et al., 2001; McGillis-Hall, et al., 2004; O'Brien-Pallas, et al., 2004; Tourangeau, et al., 2006). Reducing skill mix and overall levels of nursing staff has been linked to increases in length of stay, hospital acquired infections and incidence of pressure ulcers (Cho, et al., 2003). Adopting a broader definition of skill mix, McGillis-Hall et al. (2001) in Canada found that a mix of regulated professions (in the Australian context a mix of both registered and enrolled nurses) led to better patient outcomes than did high proportions of unregulated workers (such as assistants in nursing). Australian research has identified relationships between a higher percentage of RN hours worked per ward and lower rates of several negative patient outcomes including decubitus ulcers, pneumonia, gastrointestinal bleeding, failure to rescue (death following a complication not present on admission), and falls causing injury (Duffield, et al., 2009c; Duffield, et al., 2007).

Other analyses of skill mix have depicted a more complex picture. For example, Blegen and Vaughn (1998) found that while patient outcomes improved as a higher proportion of RNs

provided care, when the proportion of RNs increased above 87.5%, the rates of some negative patient outcomes such as decubitus ulcers and infections increased. It was suggested that this unexpected correlation could be an effect of higher patient acuity in units with high RN staffing, and that therefore the skills of staff need to be matched to the specific needs of the patients requiring care (Buchan & Dal Poz, 2002; Duffield, et al., 2006).

The interaction between skill mix, staffing, and the characteristics of the work environment has also been observed. In the New Zealand public hospital system during the 1990s, there was an increase in the proportion of RN hours concurrent with an overall decrease in nurse staffing, in the context of major healthcare reform. This reform removed nurses from senior and management positions in hospitals and the government, replacing many with generic business administrators (Coney, 1996). Analysis of administrative data collected during this period indicated that this richer skill mix and reduced staffing, together with the chaotic work environment, was associated with significant increases in all measured negative patient outcomes (McCloskey & Diers, 2005).

Overall, systematic reviews have confirmed that in general nursing environments an increase in the proportion of RNs has been associated with a reduction in negative patient outcomes (2007; Lankshear, et al., 2005). However, as is also suggested in some studies, skill mix should be matched to patient needs and viewed in combination with other environmental factors. With this in mind, and in order to understand the nature of the influence of this factor on outcomes, some authors have examined the impact of reduced skill mix in more detail.

The type of impact most often articulated in the literature is the effect on the RN's surveillance and notification function. That is, the component of the role that focuses on assessment and recognition of complications, and when timely and appropriate action is taken (Clarke & Aiken, 2003). In order to fulfil this function, nurses must be able to recognise cues and identify problems. They must also be empowered to undertake the necessary action.

Unruh (2003) noted that as skill mix declines RNs acquire greater supervisory responsibilities. A logical consequence of this is that RNs will have less time to spend with each patient as they devote their time to supervising others, have fewer experienced colleagues to consult, and that therefore they will have less opportunity to assess patients and to respond in a timely and appropriate manner. It has also been suggested that the expanded supervisory role of RNs in low skill mix wards includes more frequent interruptions and reduced support or

supervision amongst RNs of each other's work (Chang & Mark, 2009). This effect is similar to that of inadequate staffing numbers or hours per patient, with the added complexity of removing the RN from a more continuous interaction with their patients.

This last point is more evident when considering the nature of the tasks delegated to ENs or AINs when skill mix is reduced. These tasks often fall into the category of fundamental nursing activities, such as hygiene care, which are then not carried out by the RN. However, as stated by Lankshear et al. (2005 p. 172) "it is during these 'basic' tasks that a complex interaction occurs – nurses assess patients' physical and psychological status and patients talk to, and receive information from, nurses". This supports some early Australian research in the critical care area, that noted that when skill mix was decreased, RNs usually delegated basic care activities (Chaboyer, McMurray, & Patterson, 1998). That study described other, more hidden, aspects of the role that were lost along with this delegation, termed *tacit features*. These included *ongoing vigilant assessment*, *seeing the whole picture*, and *quick response,* aspects that resonate across many nursing specialty areas.

In mental health, skill mix as the proportion of RNs has not been examined. Rather, in a reflection of the multidisciplinary nature of care in the mental health environment, the term has been used to describe the mix of different disciplines working in a given environment (Halsteinli, Karterud, & Pedersen, 2008; Hughes, et al., 2008). This concept may be better described as multidisciplinary skill mix, or defined more directly according to the variable being measured, such as nurse-physician ratio or psychologists per nurse. However, the present study examined inpatient mental health wards in general hospitals. Nurses are the predominant staffing category in this environment and the outcome of interest is the nurses' capacity to engage therapeutically with patients. Nurse skill mix has not been examined in mental health and the definition used in the general nursing literature (i.e. proportion of RNs) was applied.

Although no mental health studies have considered skill mix in the way described in the general nursing research, the mechanisms by which it exerts an influence on patient outcomes in general areas may be extrapolated to the influence it may have on nurses in mental health. As noted in the earlier discussion of staffing, reduced opportunity to interact with patients is a potential influence on the nurse's ability to develop therapeutic relationships. This would be an impediment whether due to inadequate staffing or increased supervisory duties and interruptions. In addition, apportioning of tasks to other staff may disrupt the continuity of the

relationship between nurse and patient in a similar manner to that applied to transfers between services (Wierdsma, et al., 2009). Similarly, the delegation of fundamental nursing tasks may also be an issue in mental health, in accordance with the type of interaction that may occur when undertaking these tasks (Lankshear, et al., 2005). Reduced skill mix may therefore, through these means, be a negative influence on the nurse's ability to relate to patients.

The findings in general nursing suggest that a richer skill mix provides better care to patients. This includes not only the range of nursing tasks, but other functions necessary for the prevention of adverse events, such as effective surveillance and appropriate action. Disruptions to the RN's role in the form of reduced opportunity to assess patients, as a consequence of reduced holistic care and increased supervisory duties, have been linked to negative patient outcomes. In mental health, as in general nursing, poorer skill mix could act in a similar way to low staffing or high patient turnover, and reduce the opportunity nurses have to interact with patients and their access to supportive colleagues. The nurses' capacity to engage with patients would be thereby restricted, and the development of the therapeutic relationship impeded.

3.1.3. Organisational Aspects of the Nursing Work Environment

Together with adequate staffing, manageable workload and appropriate skill mix, elements of the organisational structure, and nursing's place within it, were identified in the magnet hospital research as important features that predicted nurse outcomes such as high job satisfaction, system outcomes like high retention and low staff turnover, and patient outcomes such as decreased length of stay and low rates of adverse events (McClure & Hinshaw, 2002; McClure, et al., 1983). Specific influential factors included the foundations of quality nursing care such as staff development, collegial relationships between doctors and nurses, the participation of nurses in the operation of the organisation and nursing leadership (Aiken, et al., 2008; Friese, et al., 2008; Lake, 2002; Lake & Friese, 2006).

Teamwork & Interdisciplinary Relationships

An effective working partnership between the nurse and doctor is an important component of a positive work environment (McClure, et al., 1983). Together with the other identified organisational elements of the environment this factor has been consistently identified in international general nursing research as a significant influence on outcomes (Aiken, et al.,

2008; Chiang & Lin, 2009; Duffield, et al., 2007; Gunnarsdóttir, et al., 2007; Li, et al., 2007; Van Bogaert, et al., 2009). This relationship is most commonly referred to as *collegial*, which reflects the collaborative nature of the relationship and implies nursing autonomy and status in the organisation (Laschinger & Leiter, 2006).

Both patient and nurse outcomes have been associated with collegial relationships between nurses and doctors in general nursing. For example, in combination with other work environment characteristics, poor collegial relationships have been linked to higher rates of patient mortality and complications in intensive care units (Knaus, et al., 1986), and across general hospitals (Aiken, et al., 2008; Friese, et al., 2008). A study of 284 general nurses in the United States established strong associations between collegial relationships, nurses' job satisfaction and stress (Manojlovich, 2005). That study also noted an association between these relationships and the overall work environment, confirming the close links between the various organisational components of the environment.

Other research has supported these findings. In Australia, a study of nurses in 80 New South Wales medical surgical wards found an association between nurse-doctor relationships and nurses' job satisfaction and reported experience of threats of violence (Duffield, et al., 2007). A survey of general nurses in New Zealand (n=225) found that positive nurse-doctor relationships were correlated with higher scores on all domains of the SF-36, in particular social functioning, vitality and mental health (Budge, Carryer, & Wood, 2003). In addition, a qualitative study of 40 nurses across hospital and community settings in Ireland identified positive relationships with colleagues as an important component of support. Teamwork in particular was found to be associated with nurses commitment to the organisation (McCabe & Garavan, 2008).

Some studies have expanded their view to examine communication across all disciplines providing care to patients. Hughes, Chang and Mark (2009) noted the relationship of improved communication to error rates and therefore to improved patient safety in the medical-surgical environment. Also, nurses in United Kingdom mental health services reported communication problems with other staff (nurses, pharmacists and doctors) as a primary cause of medication errors (Malyn Haw, Dickens, & Stubbs, 2005). Although not specifically discussed in these studies, collegial relationships between professionals could be seen as a facilitator of good communication (Armstrong, Laschinger, & Wong, 2009).

This broader view of collegial relationships fits well with mental health, where practice is often multidisciplinary (Grigg, 2001; Rosen, 2001), and where the nurse's ability to relate to all staff has been recognised (Barker, Jackson, & Stevenson, 1999a p. 108):

> *The nurse's capacity to fulfil translation earned them the title of 'the glue that holds the service together'. Nurses' handling of the various languages of care and treatment, and their expression of translation in practice, resulted in the formation of a complete picture in shape and form, intelligible to both professional and person in care.*

Indeed, a link between effective participation in a multidisciplinary care team and patient outcomes in mental health has been identified in the United States. A longitudinal study of mental health patients (n=1638) and care teams in 16 Veterans Affairs hospitals found significant improvements in functional status for patients where the team had broad participation in planning and care delivery (Alexander, et al., 2005). In Australia, cross-disciplinary approaches were found to be effective in reducing the seclusion and restraint of mental health patients (Gaskin, Elsom, & Happell, 2007).

In addition to communication, collegial relationships are a reflection of the status of nurses in the organisation. For example, hierarchical relationships are indicative of large differences in status between professions in a bureaucratic organisational model, where control is centralised and exercised through formal authority (Lake & Friese, 2006). This may be contrasted with the goal centred model where control is spread amongst professionals and autonomous decision making is supported (Lake, 2002). As noted by Aiken et al. (1998), organisations that encourage nurse autonomy and control over the practice setting also have better relationships between nurses and doctors. That is, sound nurse-doctor relationships are encouraged by, and facilitative of, nurse participation in the organisation's policy setting and governance. In addition, a Canadian study of 300 acute care nurses found that good nurse-doctor relationships, together with opportunities for advancement and nursing leadership, were correlated with nurse empowerment (Armstrong, et al., 2009). Another recent study suggested that strong collegial relationships provide support for nurses' expertise in acute care settings (Roche, Morsi, & Chandler, 2009).

In Australian community mental health a flat organisational structure has been noted to encourage both autonomy and multidisciplinary teamwork (Rosen, 2001; Rosen & Callaly, 2005). This was also reflected in early work that found a more hierarchical approach to decision making in inpatient units, compared to community health (Slade, Rosen, & Shankar,

1995). Other early research in Australian mental health identified high levels of professional autonomy and good working relationships with other disciplines in the community setting, while nurses working in mental health inpatient units reported low levels of autonomy and poor relationships with other members of the multidisciplinary team (Clinton & Hazelton, 2000a). Congruently, the nurse-doctor relationship in community mental health has been linked to the influence nurses have in decisions about patient treatment (Elsom, Happell, & Manias, 2007).

In recent studies, nurses in Australian mental health services have reported collegial teamwork to be one of the most rewarding aspects of their work, and that difficulties with colleagues was one of the least satisfying (White & Roche, 2006). Similarly, in a survey of 118 nurses working in mental health services in Sydney, New South Wales, 73% of nurses reported satisfaction with nursing teamwork (Cleary, et al., 2005). A smaller proportion reported satisfaction with interdisciplinary collaboration, suggesting some issues with this component of the work environment. Both nursing teamwork and interdisciplinary collaboration were ranked highly important, with community staff particularly emphasising the latter. These findings underline the importance of good relationships at work from a job satisfaction perspective. They are congruent with other research that has linked teamwork with the morale of nurses and a more positive attitude to patient care (Day, Minichiello, & Madison, 2007).

The nurse-doctor relationship has been examined in several Australian studies and a range of levels reported. Studies of general nursing in New South Wales (Duffield, et al., 2007) and the Australian Capital Territory (Duffield, et al., 2009c) found levels similar to those in Canadian research (O'Brien-Pallas, et al., 2004). In contrast, a recent comparison of the work environment characteristics of a New South Wales public hospital and hospitals in the United States, using the Practice Environment Scale of the Nursing Work Index ([NWI-PES] Lake, 2002), indicated that nurse-doctor relationships scored lower than both magnet and non-magnet hospitals (Middleton, et al., 2008). Similarly, although not formally examined in research, submissions to the *Not for Service* report suggested that there has been considerable professional and sectorial division between members of Australian mental health services (Mental Health Council of Australia, 2005).

Interdisciplinary relationships, particularly those between nurses and doctors, are an important component of the work environment. They have been shown to impact communication between professionals, nurses' morale, job satisfaction and patient outcomes.

Nurses who are stressed and dissatisfied with their work may not have the necessary attributes to develop and maintain therapeutic relationships with patients. These relationships between professionals are linked to other aspects of the work environment and recognised by nurses in both mental health and general settings to be crucial to quality patient care.

Nursing Leadership & Participation in Hospital Affairs

Strong nursing leadership at the ward and organisational level has been identified in general nursing research as a significant predictor of positive outcomes for nurses and patients (Aiken, et al., 2008; Laschinger & Leiter, 2006; Leiter & Laschinger, 2006). It is seen as enabling clinical nurse autonomy and best practice through clear management structures and nursing representation (Schmalenberg & Kramer, 2008). Strong leadership can be reflected in the participation of nurses in governance, policy decisions other career and professional development opportunities (Lake, 2002).

Nursing leadership has been particularly noted to influence nurses' job satisfaction, and is also linked to nurse adverse events (Clarke, 2007; Clarke, et al., 2002). In early studies of nurse manager behaviours and attitudes, McNeese-Smith (1997, 1999) found that positive managerial and leadership behaviours were linked to improved nurse job satisfaction, productivity, and the strength of an individual's involvement in and identification with an organisation. In more recent studies, effective nursing leadership and the empowerment of nurses within the organisation have been associated with higher job satisfaction (Laschinger, et al., 2004; McGillis-Hall, et al., 2001). A small grounded theory study of nurses' stress found that nurses who were not supported and acknowledged by managers for their work reported higher stress levels and more negative feelings (Olofsson, Bengtsson, & Brink, 2003). Australian research has established similar connections, with nursing leadership showing significant relationships with job satisfaction and the nurse's intention to leave their current job (Duffield, et al., 2009b).

As described earlier, reduced job satisfaction has been linked to negative attitudes and unproductive behaviour in the mental health setting (Whittington & Wykes, 1994a). Also, nurses who are not committed to the organisation and who are stressed, may not possess an attitude in accordance with Rogers' (1957) *necessary and sufficient conditions* for the therapeutic relationship. Therefore, leadership may have an impact on nurses' capacity to establish and maintain these relationships.

Other research highlights the importance of leadership as a supportive mechanism through the ability of leaders to influence other aspects of the work environment, such as staffing, skill mix and enhanced participation in the organisation (Laschinger & Leiter, 2006). For example, in the United States, strong leadership and focused management support for 434 student nurses was found to enhance role clarity and consequently job satisfaction (Jones, Smith, & Johnston, 2005). A large study of the nursing workforce in Canada (n=8597) identified a strong relationship between effective leadership and adequate staffing, sufficient resources, and a nursing (as opposed to medical) model of care (Leiter & Laschinger, 2006). This is consistent with the findings of a review of the literature on seclusion practices in mental health, where leadership was identified as an important component of the support of staff in designing and implementing effective reductions strategies (Gaskin, et al., 2007).

Aspects of this broad organisational view of nursing leadership have been noted in the United States (Aiken, et al., 2008; Schmalenberg & Kramer, 2008) and were clearly articulated by participants in a study of the nursing work environment in New Zealand. These nurses suggested that effective leadership provided clarity and direction at the ward and organisational level, including the support of innovative practice, development and mentoring of nurses, determination of the strategic direction for nursing and participation in the highest levels of the health service (Hansen, Carryer, & Budge, 2007). It is also suggested that nursing leadership responds to nurses' concerns more readily than other disciplines or generic management might, that the senior nurse in the organisation is accessible and has sufficient power to influence policy decisions or act on issues relevant to nurses (McClure & Hinshaw, 2002). At the ward level, Laschinger, Finegan and Wilk (2009) found an association between nursing leadership, workplace conditions and nurses' commitment to the organisation across 217 hospital wards.

Nurse managers who are disempowered in an organisation may feel ineffective and express low job satisfaction themselves, with consequences for their staff and the organisation. In a survey of 300 front-line nurse managers in Finland, respondents showed strong belief in their control over ward level functions, but expressed low levels of organisational power and variable satisfaction (Suominen, et al., 2005). In a study of job satisfaction in a private psychiatric organisation in the United States, it was found that managerial staff of all disciplines were no more satisfied than their staff, and that nurses with supervisory responsibilities were particularly dissatisfied (Aronson, 2005; Aronson, et al., 2005). This was contrary to expectations based on business research that higher levels of the organisation

would express greater satisfaction. It was suggested that the pattern of dissatisfaction contributed to the overall low satisfaction level of the organisation, and consequently to poor teamwork and high turnover.

Although little research has been undertaken into nursing leadership in mental health, there has been discussion of the apparent lack of effective clinical and organisational leadership in Australia (Mental Health Council of Australia, 2005). In particular, a lack of organisational support for nurses in NSW mental health services has been noted (NSW Legislative Council Select Committee on Mental Health, 2002; Senate Community Affairs References Committee, 2002). This is congruent with the loss of mental health specific management structures in the general hospital organisations as a result of mainstreaming (Mental Health Council of Australia, 2005). This lack of representation and leadership could make it difficult for nurses in mental health to articulate their role, to obtain sufficient support from colleagues with a similar perspective on care, or to influence policy and practice issues at the organisational level.

Research has indicated that nursing leadership is significant in the amount of support received by nurses and in positive nurse and patient outcomes. This leadership occurs at the hospital and ward levels and may be reflected in the participation of nurses in policy development and the governance of the organisation. Other work has identified the influence of this aspect of the work environment on job satisfaction, stress and commitment to the organisation. Leadership may therefore be associated with the ability of nurses to relate therapeutically to patients in the mental health setting.

Nursing leadership, particularly at the organisational level, may also be evident in the establishment of basic organisation supports identified in the magnet hospital and subsequent studies (Aiken, et al., 2008). These elements of the work environment have been combined in the literature as the concept *Nursing Foundations for Quality of Care* (Lake, 2002).

Foundations for Quality Nursing Care

The building blocks for quality, as measured by the Practice Environment Scale of the Nursing Work Index, include the availability of continued education for nurses, preceptors for new staff, working with clinically competent colleagues, the expectation of a high standard of care and a nursing model of service provision (Lake, 2002). They provide support to nurses in their role as it empowers them to consult their competent colleagues, develop their skills, and

undertake autonomous care. It also imparts a clear understanding that nursing has a voice in the organisation. These are important aspects of quality nursing (Lake, 2002).

In recent research in the United States, the foundations for quality nursing care, in combination with other work environment characteristics, has been established as a significant correlate of patient mortality and failure to rescue, nurse job satisfaction, burnout and quality of care (Aiken, et al., 2008; Armstrong, et al., 2009). A similar concept, *Hospital Management and Organisational Support*, incorporating aspects of leadership, participation and the nursing foundations described above, was examined in Belgian general nursing research. That study found a link to improved quality of care and perceptions of personal accomplishment at work, and lower depersonalisation (Van Bogaert, et al., 2009). In New Zealand, another concept that incorporated aspects of nursing foundations and participation in the hospital, *Control of Practice*, was associated with nurses' mental health and social functioning (Budge, et al., 2003). Finally, in Finland, the organisational expectation of high standards of nursing care was linked to decreased nurse stress, increased job satisfaction, fewer adverse events for patients and nurses, and improved patient satisfaction (Tervo-Heikkinen, et al., 2008). This research suggests that both patient and nurse outcomes in general nursing settings are improved in organisations that provide professional development for nurses and that encourage high standards of nursing within a nursing model of care.

In mental health, it has been suggested that a nursing-focused model of care that facilitates interactions with patients will enhance relationships (Cleary & Edwards, 1999). This implies a strong nursing philosophy in the organisation and therefore participation in policy making. In mainstreamed mental health units it also implies an understanding of mental health in the wider nursing administration. However, recent research across specialist and mainstreamed services in NSW has suggested that the introduction of standardised assessment and documentation has moved nurses towards a medical model of care (Cleary, et al., 2005). This, together with the aforementioned lack of mental health knowledge in mainstreamed services (see Chapter 1), suggests that this foundation for quality care in mental health in Australia may not be present.

Another aspect of these foundations is access to continued education. As noted earlier (see Chapter 1 & Chapter 2), the movement to comprehensive undergraduate nursing curricula has been suggested to have increased the necessity for post-graduate and continued education to provide specific mental health education and skill development (Mental Health Nurse

Education Taskforce, 2008). However, access to continued education has been identified as a particular issue for nurses in mental health in New South Wales (White & Roche, 2006). Interestingly, nurses in another study accorded it a low priority, although also reporting a high rate of satisfaction with their ongoing education (Cleary, et al., 2005).

The foundations of quality nursing also includes the provision of preceptorship to new staff. In Australian mental health settings these programmes have been found to improve the job satisfaction of those who complete them, particularly when the preceptors themselves receive support in the role (Charleston & Happell, 2004; Hayman-White, et al., 2007). Respondents to two studies in New South Wales has acknowledged the importance of preceptorship for new staff and students (Cleary, et al., 2005; White & Roche, 2006). However, the availability of both preceptorship and access to continued education has been questioned elsewhere (Australian Health Workforce Advisory Committee, 2003) and the uptake of opportunities for postgraduate education has been low compared to the size of the profession (NSW Labour Economics Office, 2008; Pagnini, 2005).

The absence of these fundamental components of the mental health work environment has the potential to adversely impact nurses' ability to relate therapeutically to patients. Nurses who perceive low organisational support may experience burnout, stress and decreased job satisfaction. They may be consequently limited in their ability to relate therapeutically to patients.

In addition, although not articulated in the literature, it may also be argued that the provision of clinical supervision (defined below) is a foundation of nursing care in mental health. Research has not established the influence of clinical supervision on mental health patient outcomes, but nurse outcomes have been identified (Hyrkas, Appelqvist-Schmidlechner, & Haataja, 2006) that are similar to those associated with the foundations of quality care in general nursing studies (Van Bogaert, et al., 2009). Clinical supervision has been included in mental health nursing standards and similar documents internationally (Australian & New Zealand College of Mental Health Nurses, 1995; College of Nurses of Ontario, 2006; Department of Health, 2006; National Mental Health Education and Training Advisory Group, 2002).

Clinical Supervision

Clinical supervision is the practice of more experienced nurses supporting and developing therapeutic competence in those less experienced (Bland & Rossen, 2005). It has been accepted practice in allied health disciplines for many years but is relatively new, as a distinct and defined exercise, in nursing (White & Winstanley, 2006). Although definitions vary, most incorporate an opportunity to reflect on practice, the sharing of knowledge and skills, the provision of support and an element of clinical governance (Bowles & Young, 1999; Winstanley & White, 2003; Yegdich, 1999; Yegdich & Cushing, 1998).

In accordance with this definition, the most common model of clinical supervision in nursing is Proctor's (1986) three function approach. This includes the development of knowledge and skills – the formative component, the development of professional standards and application of organisational policy – the normative component, and the support of personal wellbeing through the management of work related stress – the restorative component. These functions occur in a confidential environment where the individual or group has the opportunity to express and understand their emotional reactions to situations and to reflect and develop their practice in the context of relevant policies and standards. It is distinct from what is often referred to as *managerial* supervision, which has a more explicit performance appraisal focus (Yegdich, 1999). A number of studies have investigated clinical supervision and its outcomes.

The different components of Proctor's model were examined by Bowles and Young (1999). Respondents to this early research (n=201) indicated that all three aspect of supervision were beneficial to them, although the normative component was less influenced by other variables in the study. That is, a relative decrease in the perceived benefits of the formative and restorative aspects of supervision was associated with lengthier service. However, increased benefits of all aspects supervision were associated with a longer period in receipt, suggesting nurses were developing skills in the use of supervision (Bowles & Young, 1999).

In the United Kingdom during the 1990s, a study of over 500 nurses in various specialty areas found that they valued the opportunity to have time out from their clinical role to examine their emotions and to reflect and learn from their clinical practice, thereby enhancing their sense of wellbeing (Butterworth, Carson, & White, 1997; White, et al., 1998). More recent work has supported these findings (Davey, et al., 2006), although they also suggested that there was unmet need in regard to skills development in supervision. However, the

development of new skills may be addressed in education programs in addition to clinical supervision, so that this finding may reflect a different understanding of the practice.

A number of studies have examined the relationship between clinical supervision and outcomes for the nurse such as job satisfaction and burnout. A small (n=39) trial of nurses working in aged care found that those receiving clinical supervision reported less burnout on the Maslach Burnout Inventory (Berg, Welander Hanson, & Hallberg, 1994). However, a study of over 200 nurses in the United Kingdom found no effect on burnout, although an improvement in stress management and perceived support, particularly for junior nurses, was identified (Teasdale, Brocklehurst, & Thom, 2001). Similarly, a small (n=22) pre and post-test of nurses in mental health found an improved organisational climate but no change in nurses' job satisfaction or stress (Berg & Hallberg, 1999). In contrast, a follow up study of 10 nurses in Sweden found sustained improvements in job satisfaction, knowledge and confidence (Arvidsson, Lofgren, & Fridlund, 2001). In a more recent and much larger study of nurses in mental health (n=569), Hyrkas (2005) examined the nature of clinical supervision using the Manchester Clinical Supervision Scale ([MCSS] Winstanley, 2000). She found that nurses with higher MCSS scores experienced lower burnout, while those with lower scores reported low job satisfaction.

Bradshaw, Butterworth and Mairs (2007) undertook a small comparative study that linked clinical supervision to patient outcomes. They found a greater increase in knowledge for nurses receiving both an education program and clinical supervision, compared to those who received the education program alone. In addition, the patients of nurses who received both education and supervision experienced significantly greater reductions in overall symptoms of mental illness, in particular positive psychotic symptoms. However, this was a small study involving a specific treatment approach so that generalisability is limited. As noted by White et al. (1998 p. 192), and others (Hyrkas, Koivula, & Paunonen, 1999), "a causal relationship between clinical supervision, better nursing care and improvement in patient outcomes" is yet to be established.

Few studies of clinical supervision have been reported in Australia. In New South Wales, a state wide review of nurses working in mental health examined the prevalence and perceptions of supervision (White & Roche, 2006). It was noted that while all facilities reported that clinical supervision was available to all nurses in mental health, only one-third of nurses were actually in receipt of regular sessions. This compares to 58% of nurses working in mental

health in the United Kingdom (Davey, et al., 2006). That study also found that those in receipt of clinical supervision were primarily involved in reflection on clinical practice, although discussion of local administrative or management issues was also prevalent. The latter point may be a reflection of the opportunity to identify and discuss stressful matters. The reported benefits of supervision included insight into practice, the development of personal confidence and stronger working relationships.

The growing recognition of clinical supervision as an important aspect of quality work environments for nurses working in mental health has been recognised through incorporation in practice standards. For example, the College of Nurses of Ontario (2006) states that clinical supervision supports nurses in the establishment and maintenance of therapeutic relationships. Australian standards for mental health nurses include similar statements and add the function of professional growth and practice development (Australian & New Zealand College of Mental Health Nurses, 1995). More broadly, the *National Practice Standards for the Mental Health Workforce* includes the ability to "change practice based on feedback from others on their behaviour or intervention and undertake clinical supervision from a supervisor of one's own discipline" as a core skill for all mental health professionals (National Mental Health Education and Training Advisory Group, 2002 p. 39). In addition, the Chief Nursing Officer of the United Kingdom (2006) has noted its importance in support of nurses and in the implementation of evidence based practice. Also of note, clinical supervisors have been identified as requiring adequate education and support in order to be most effective in their role (Hancox, et al., 2004).

Although findings are variable, research has indicated that clinical supervision is valued by nurses as a supportive exercise, that it may act to reduce stress and burnout, and to improve job satisfaction and application of learning. The practice has been codified in international standards for nurses in mental health. It has been suggested that clinical supervision increases the awareness of ethical and clinical care issues and thereby permits nurses to identify and manage these sources of potential stress (Berg & Hallberg, 1999; Cottrell, 2001; Severinsson & Hummelvoll, 2001; Severinsson & Kamaker, 1999).

The ability to reduce stress at work is particularly pertinent in the current study, as high levels of stress in challenging work environment have been reported in Australian mental health services (Clinton, 2000; Senate Community Affairs References Committee, 2002; White & Roche, 2006). This moderation of the influence of negative work environments (Bland &

Rossen, 2005) is a potential positive influence on a nurse's ability to relate therapeutically to patients. Similarly, the opportunity to reflect on patient care may assist nurses in recognising and addressing challenges to the therapeutic relationship (Bland & Rossen, 2005), and to thereby improve their competency and effectiveness in the role.

3.2. Summary

A large body or research in general nursing has established the relationship of nurse staffing, skill mix, patient turnover, nursing leadership, relationships with colleagues and organisational support to patient and nurse outcomes. These factors have also been identified as matters of concern in mental health, although similar comprehensive work is yet to be undertaken. However, many of these characteristics of the work environment have been linked to the stress, job satisfaction and burnout of nurses in mental health. These nurse outcomes can in turn impact nurses' attitudes and behaviour. They are therefore an important influence on the necessary preconditions to relate therapeutically to patients.

The nursing role in mental health is centred on the therapeutic relationship between nurse and patient. A number of *necessary conditions* must be in place for the nurse to establish and maintain an effective relationship (Rogers, 1957). In particular, the nurse must have the willingness and ability to engage therapeutically (Lauder, et al., 2000). These attitudinal features may be may be influenced by aspects of the individual nurse, patient, or work environment.

In the following Chapter, the characteristics of the work environment derived from the literature above are combined with individual nurse and patient factors, and added to an established framework that identifies the nurse's willingness and ability to engage in the therapeutic relationship as the dependent variable. Together these factors are assembled into an hypothesised model that describes the relationships between the variables as testable hypotheses.

4. The Hypothesised Model

Previous chapters have identified the context of mental health nursing in Australia, characterised by considerable change in the structure of services, together with changes in practice and to the educational preparation of nurses leading to disrupted work environments and questionable skills among nurses working in this area. In addition, influences on nurse and patient outcomes have been identified from the mental health, general nursing and wider literature and assessed for their potential impact on the nurse's role in mental health. These factors include nurse staffing and workload, skill mix, interdisciplinary teamwork, leadership, clinical supervision and access to support such as continued education.

The nursing role in mental health focuses on the therapeutic nurse-patient relationship. This is a partnership that helps the patient to develop an understanding of their mental health problem, and to develop and undertake strategies to manage it. The relationship has been shown to positively influence patient outcomes in several settings. In order to establish and maintain the relationship the nurse must possess knowledge, interpersonal skills and an appropriate attitude. In particular, the nurse must be empathic and display unconditional positive regard (Rogers, 1957). These are the *necessary conditions* for an effective therapeutic relationship. Aspects of the individual nurse, patient, or work environment that influence these conditions may therefore impact the therapeutic relationship and potentially patient outcomes.

This chapter describes the development of a model that links the identified nurse, patient and environmental factors to the ability of the nurse to effectively engage in a therapeutic relationship. This postulated model was extended from an early core framework that brought together a number of factors that contributed to health professionals' ability and willingness to relate therapeutically to patients with alcohol problems in the United Kingdom (Shaw, et al., 1978). This original framework was later revised and applied to nursing and mental health (Lauder, et al., 2000). This framework did not explicitly name the various aspects of the work environment that have been suggested in previous chapters to influence nurses' capacity to engage therapeutically. In the current study, these additional factors are added to the core framework thereby providing an extended model and a set of hypotheses that may be tested with data.

4.1. A Model of Commitment

The core framework that has been extended and used in the present study was developed over a number of years and with several revisions. It is important to review this process through the early literature in order to understand the application here, as the centre of a broader model, applied to nursing in mental health, that includes particular aspects of the work environment from other research. In addition, a number of the concepts were more completely described in the early literature and have continued without revision. Where the concept has been revised or additional information provided in later papers, the more recent information has been included.

A project undertaken during the 1970s at the Maudsley Hospital in the United Kingdom suggested that there were a number of factors that underlie commitment to therapy, and that these could be developed into a theoretical account of the various elements and their relationships. Consequently, an outcome of this project, the Maudsley Alcohol Pilot Project (MAPP), was a framework describing the components of commitment to the therapeutic relationship (Shaw, et al., 1978), referred to here as the MAPP model. This was an explicit model that linked factors such as motivation, the expectation of work satisfaction, and the perceived adequacy of knowledge and skills with the health professional's capacity to engage in effective therapeutic relationships.

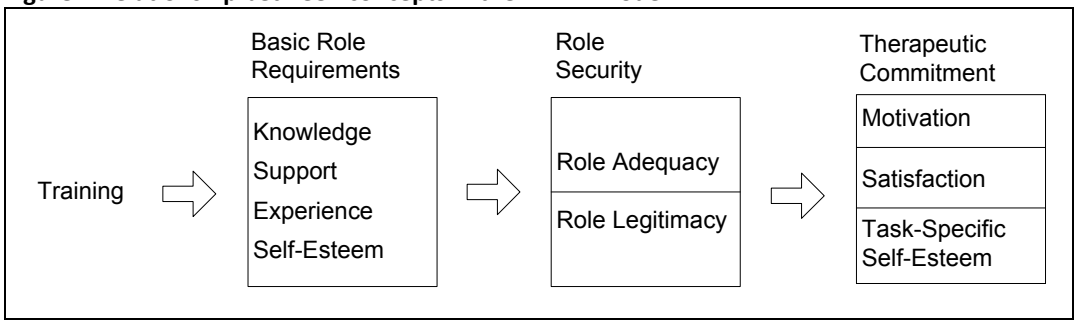
The rationale for this MAPP model was found in the psychotherapy and substance abuse counselling literature, where characteristics of the therapist such as experience, together with situational factors such as support and training, have been shown to relate to patient outcomes (Anderson, et al., 2004; Cartwright, 1980, 1981; Gorman & Cartwright, 1991; Hughes, et al., 2008; Watson, et al., 2006). Other research has concurred that the quality of care delivered is influenced by the attitudes held by members of the health professions towards the individuals for whom they care (Albery, et al., 2003; Anderson, et al., 2004). A small study undertaken by Strang et al. (2004) found that the commitment of general practitioners to care for opiate misusers increased following the introduction of an intervention designed to enhance the quality of patient-centred care. In addition, an international study of general practitioners (including Australia) found that those who received more education, worked in a more supportive environment, and perceived higher security in their role were more likely to engage and provide care to patients with alcohol problems (Anderson, et al., 2003).

Attitudes are also believed to impact on the extent to which knowledge is accepted and used in practice, and are fundamental to the commitment of health professionals to engage in care (Hughes, et al., 2008; Watson, et al., 2006; Watson, et al., 2003). In research using the MAPP model, Cartwright (1980) found that experience and support were the most important predictors of therapists' positive therapeutic attitude. The model proposed that professionals experienced insecurity in their roles if they lacked knowledge and skills required to help their clients (adequacy), and if they were uncertain whether their clients and colleagues believed they had a role in the field (legitimacy). This was referred to as role security (Gorman & Cartwright, 1991; Hunot & Rosenbach, 1998), or in the inverse, role insecurity (Lightfoot & Orford, 1986).

The professional's motivation to work with alcohol-related problems, and their expectation that to engage in this work would result in job satisfaction and improved professional self esteem, were described as the three components of the concept of therapeutic commitment (Cartwright, 1980; Hunot & Rosenbach, 1998; Lightfoot & Orford, 1986).

The MAPP model suggested that there was a causal relationship between the factors. Individual factors such as self-esteem and experience and situational factors such as support and training, together termed basic role requirements, facilitated the development of security in the role. That is, they would have increased role legitimacy and role adequacy, which would then lead to enhanced therapeutic commitment. They would therefore be more effective in their work with clients with alcohol problems (Gorman & Cartwright, 1991; Hunot & Rosenbach, 1998). The predicted relationship between basic role requirements, role security and therapeutic commitment is presented in Figure 1.

Figure 1 Relationship between concepts in the MAPP Model

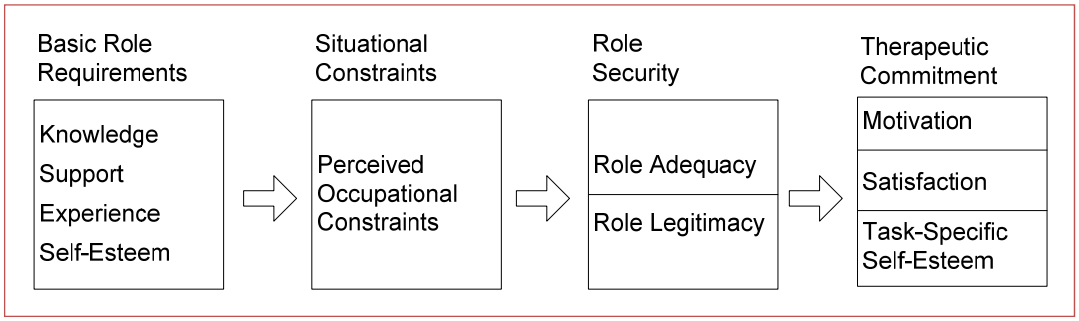


(Hunot & Rosenbach, 1998)

Revisions of the MAPP model, for use in similar clinical environments, were undertaken by Lightfoot and Orford (1986), Albery et al. (2003), and others (Airey & Marriott, 2003; Clarke,

Parker, & Gould, 2005; Oakley-Browne, et al., 2007). These adjustments acknowledged that the original model did not completely account for contextual information that could mediate the effects of basic role requirements. For example, aspects of the organisation such as policies that required a certain type of clinical involvement, or time constraints, may have mediated the effect of education or experience on the individual's therapeutic commitment. In the revisions made by Albery et al. (2003), these factors were named situational constraints (Figure 2).

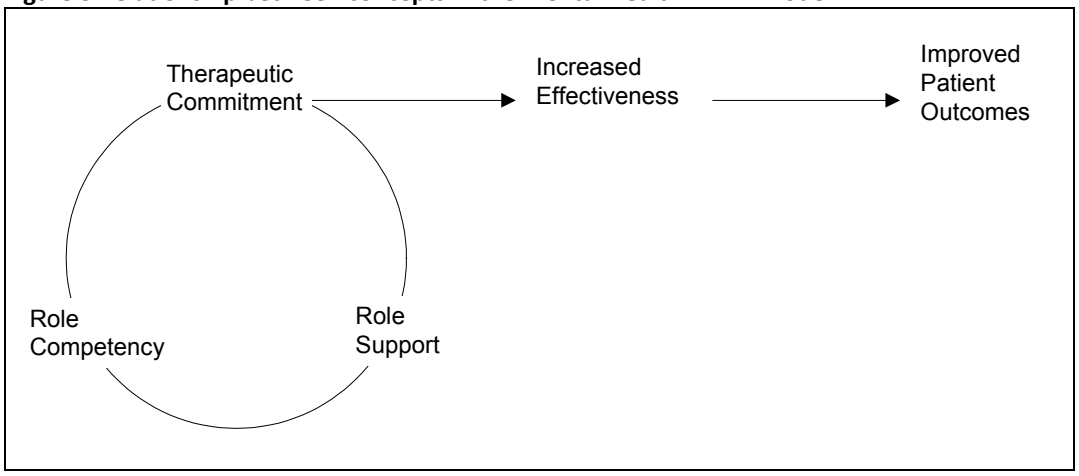
Figure 2 Therapeutic Attitude & Situational Constraints



(Albery, et al., 2003)

An additional revision was undertaken to the model for use in mental health, through reconceptualising the components of the model and factor analysis of data collected from community-based nurses in rural areas of northern Scotland (Lauder, et al., 2000). The concepts of role legitimacy and role adequacy were redefined into the single construct of role competency: the perception that the individual has the knowledge and skills required to work with clients with mental health problems and that it is a relevant part of their role. An additional concept of role support was added: that the individual has access to specialist support from which to obtain advice. The concept of therapeutic commitment was retained, although redefined to explicitly state that it is a prerequisite for effective therapeutic interventions and also, that it may be related to patient outcomes (Figure 3) (Lauder, et al., 2000; Lauder, et al., 2002). In order to differentiate this revised model from other incarnations, the MAPP model as revised for use in mental health is referred to here as the Mental Health MAPP (MH-MAPP) model.

Figure 3 Relationship between concepts in the Mental Health MAPP model



(Lauder et al., 2000)

The Mental Health MAPP model therefore postulates that mental health patient outcomes will be improved by a stronger commitment on behalf of those providing care to engage therapeutically. This therapeutic commitment is held to be influenced by the individual's belief in their capabilities and their validity in the role, and by the support provided to them in that role. Each of the three components of this model will be examined in more detail.

4.1.1. Therapeutic Commitment

The therapeutic relationship is the cornerstone of nursing practice in mental health. Rogers (1957) proposed that in order to create effective therapeutic relationships and positive patient change, the therapist must embody certain values: the patient must be accepted without judgement by the therapist, the therapist must display empathy, and the therapist must be genuinely seeking to assist the patient. Therapeutic commitment in the MAPP model (and derivatives) is the concept that captures the features of the therapist that lead to this positive therapeutic attitude.

In accordance with the principles of patient-centred care, the therapeutic commitment of those providing care is believed to engender trust in the patient. Specifically, the attitude of the nurse with high therapeutic commitment presupposes their intention to establish a non-defensive interpersonal climate that can enable trust. This trust then provides the patient with a feeling of security that permits them to engage with the carer. Further, this opens the potential for increased empathy from the professional, and for more effective therapeutic work to address the client's problems (Angus, Lauder, & Reynolds, 2001a; Lauder, et al., 2000; Reynolds & Scott, 2000; Rogers, 1957).

Therapeutic commitment may be described therefore as the disposition of a nurse to engage and work therapeutically with patients (Lauder, et al., 2001). It comprises three different but related attitudinal factors: motivation or willingness to work with patients, the expectation that this work with be satisfying, and self-esteem related to the specific tasks of working with patients (Albery, et al., 2003; Cartwright, 1980). In the MH-MAPP model, these elements are conceptualised as specifically relating to the attitude of nurses towards working with people who have mental health problems.

A number of factors have been suggested as influential in regard to therapeutic commitment, either mediated through the other concepts in the MAPP models, or directly (Albery, et al., 2003; Lightfoot & Orford, 1986). These contextual factors may inhibit or facilitate the development and maintenance of therapeutic commitment. Suggested influences are the amount of time available to work with patients, the priority given to different cases, policies that may impede or facilitate contact, and resources available. In an early pilot study examining the relationship of the components of the original MAPP model, Lightfoot and Orford (1986) found that these situational constraints were negatively correlated with therapeutic commitment.

A larger and more recent study by Albery et al. (2003) examined a number of relationships in the MAPP model, and further investigated the place of situational constraints. They found that high levels of these contextual factors were related to decreased levels of role security (legitimacy and adequacy), and to decreased therapeutic commitment. In addition, an individual's level of experience in the specified clinical area was related to a decreased perception of situational constraints, and to higher levels of role security and therapeutic commitment. Overall, they summarise that greater situational constraints relate to lower role security, and both through this model concept and directly, to lower levels of therapeutic commitment.

It is possible to imagine the influence of a negative work environment embodied by these constraints. A nurse without sufficient time, or constrained by policy or lack of resources, may well have low motivation to apply relevant education or experience, may develop a negative therapeutic attitude, and thereby not engage and work with patients effectively. It is also possible to envisage the development of positive attitudes through the availability of necessary resources, time, and policy conducive to working with patients with mental health problems.

These studies suggest that positive therapeutic attitude is influenced not only by basic role requirements such as experience and education, but that there is an interaction between these factors, role support, and contextual or environmental elements. This is consistent with the relationships identified between the work environment and nurse's job satisfaction, depersonalisation and emotional exhaustion (Aiken, et al., 2008; Garrosa, et al., 2008; Van Bogaert, et al., 2009).

Although some studies using the MH-MAPP model have recorded characteristics of the work context such as the frequency of contact with mental health patients (Angus, et al., 2001a; Clarke, et al., 2005; Lauder, et al., 2002; Oakley-Browne, et al., 2007), a number of factors found influential in other research have not been included in these analyses. In consideration of the findings described previously linking situational constraints to commitment, and the broader body of research linking the work environment to nurse and patient outcomes, specific environmental factors may be added to the MH-MAPP model.

In this study, therapeutic commitment is conceived of as the disposition and capability of the nurse to work with mental health patients. It is considered a prerequisite for effective therapeutic relationships and positive patient outcomes (although these are not measured here). Influences on the mental health nurse's therapeutic commitment, such as individual factors or constraints imposed by the work environment, are believed to impact the establishment and maintenance of therapeutic relationships between nurses and mental health patients. Together with this construct, the MH-MAPP model includes the concepts of role competency and role support. Higher levels of both of these factors have been associated with higher levels of therapeutic commitment (Lauder, et al., 2002). Many factors of the work environment may influence therapeutic commitment through these concepts.

4.1.2. Role Competency

Lauder et al. (2002) define role competency as the nurse's perception of their own legitimacy in working with mental health patients, combined with their belief that they have adequate skills and knowledge. As indicated earlier (see Chapter 2 and Chapter 3) a number of characteristics of the nurse and environment are linked to this concept, including the nurse's education and experience, the leadership and support they receive and the opportunities for participation in the organisation.

Both legitimacy in the role and adequate knowledge and skills are required for high levels of role competency. For example, nurses who doubt their capabilities may display weak commitment to the goals they seek to pursue, even if they believe that they are legitimately in that role. It has also been suggested that low belief in one's skills may lead to avoidance of the patient, a factor that has been identified as placing nurses at higher risk of assault (Whittington & Wykes, 1994b), but which also prevents an effective therapeutic relationship. In addition, the nurse may experience anxiety due to the incongruence between their behaviour and what they believe that behaviour should be (Angus, et al., 2001a). Role competency may be influenced by individual education and experience, as well as the leadership and support received by the nurse. This construct is linked to Bandura's (1977) concept of self-efficacy, a core component of social cognitive theory.

Social cognitive theory states that individuals exercise control over their thoughts and actions, based on their perceived capacity to influence events (Bandura, 2001). Self-efficacy, central to this theory, is defined as the individual's confidence in their capability to perform in a certain manner and at a certain level, in a given environment, in order to exercise an influence over events (Bandura, 1994, 2001). A number of studies and meta analyses have tested and verified this construct, although there remains contention over some evidence (Bandura & Locke, 2003).

Self-efficacy is influenced by a number of factors: the experience of success or failure, the observation of role models, and persuasion or encouragement, together with the individual's interpretation of their own internal processes such as emotional or physical reactions (Bandura, 1994). An examination of each of these aspects will describe the concept in more detail.

In regard to experience, failure, particularly repeated failure at a given task, can prevent the development of self-efficacy, or undermine it if is already present. In addition, frequent easy achievement may lead the individual to expect quick and easy results and lead to subsequent lack of perseverance if obstacles are encountered. A nurse who experiences success after overcoming obstacles will develop a firm sense of self-efficacy. The development of self-efficacy through graded mastery experiences is therefore regarded as the most effective technique (Bandura, 1994, 2001). Observing others achieve a goal after sustained effort is another way an individual can develop self-efficacy (Bandura, 1994). Conversely, observing others fail at a task can lower a person's belief in their own efficacy. It is important to note that

the model being observed must have similar characteristics to the individual. If they are dissimilar the person will not identify with them and may not believe that they possess, or can attain, the same level of competency. In mental health nursing, positive experience and achievement of goals may be gained through participation in policy development and an effective interpretation of experience through reflection in clinical supervision (Bland & Rossen, 2005).

Bandura (1988, 1994, 2001) also states that persuasion can influence self-efficacy. A person may be persuaded that they possess the necessary capabilities or knowledge, and consequently sustain a high effort to achieve a goal or complete a task. However, it is also possible to undermine self-efficacy through unrealistic appraisal, where achievement is disappointing relative to the assessment or encouragement. A common source for appraisal and encouragement in organisations is from a supervisor or manager (Bandura, 1988; Brown, et al., 2005). This source has also been identified in nursing research, where effective leadership has been noted to provide support and decrease stress (Hansen, et al., 1995; Olofsson, et al., 2003).

Efficacy may therefore be constructed or enhanced by appropriate and realistic persuasion, by the observation of the success of like role models, and through exposure to situations that permit success after some effort. In contrast, self-efficacy can be diminished through unrealistic appraisal, by exposure to situations with frequent failure or very easy success, and by observation of the failure of role models. In addition, individuals will interpret their own emotional and physical reactions to a situation as indicators of their capacity (Bandura, 1994, 2001).

The individual's interpretation of their response to a situation, rather than the intensity of the reaction itself, plays an important part in the person's judgement of their capabilities. For example a stress response may be perceived as an indicator of their vulnerability to poor performance, or as a facilitator of effective performance (Bandura, 1994). Opportunities to manage this stress effectively may therefore assist in achieving high self-efficacy through a positive interpretation of the nurse's reactions to a situation (Bland & Rossen, 2005). Clinical supervision provides this opportunity and has been shown to decrease stress and burnout (Hyrkas, 2005; Teasdale, et al., 2001).

Individuals with high levels of self-efficacy approach difficult or unfamiliar tasks in a confident manner, as challenges rather than threats. They will expand their efforts to master the task if they fail, and attribute failure not to personal deficits but to insufficient effort, or to knowledge and skills that can be acquired. They will often set challenging goals, commit to achieving them, and persevere until the goal is reached (Bandura, 1994). Strong self-efficacy has been associated with high levels of work performance (Bandura & Locke, 2003; Brown, et al., 2005).

In contrast, persons with low self-efficacy may avoid difficult or unfamiliar tasks as they do not feel capable to complete the task successfully. They will often focus on obstacles around a given undertaking, and on their perceived personal deficiencies, with consequent low commitment to the task. In the case of difficulties, these individuals will often give up, enhancing their own perception of low capabilities (Bandura, 1994). An individual's self-efficacy can thereby influence the way in which they perceive and approach events, their motivation to undertake and persevere at a task, and the nature of the goals they attempt or the situations they avoid (Bandura, 1994, 2001). It has also been related to the amount of stress or anxiety they experience in a given situation (Bandura & Locke, 2003).

Those with strong self-efficacy envisage pending situations through the visualisation of success. This enables them to remain task focused, apply analytic thinking, and overcome obstacles, as they are not dwelling on the potential for failure (Bandura, 1994; Bandura & Locke, 2003). This type of cognition influences motivation as the individual forms an anticipatory belief in the likely outcome of a task or goal. Further, these beliefs affect the goals that are set by the individual and the situations that they will place themselves in. People will avoid situations that they believe exceed their capabilities by too great a margin, and choose those that meet their own judgement about their level of ability (Bandura & Locke, 2003). Self-efficacy is therefore considered a determinant of behaviour, and an indirect influence on final performance in regard to a goal (Moores, Char-Jang Chang, & Smith, 2006).

The interpretation of stress and anxiety in a situation will feedback to the nurse's belief in their ability to cope and succeed. This includes both the individual's perception of their ability to control thought processes to exclude or postpone disturbing mentations, and their ability to cope with these thoughts. A person who either does not believe in their own ability to control troubling thoughts, or does not believe in their ability to cope with them, may experience

higher levels of anxiety, and display avoidant behaviour (Bandura, 1988, 1994). Nurses who avoid patients have little opportunity to develop therapeutic relationships.

However, an individual's role competency, as described in the MH-MAPP model, is linked to, but is not synonymous with, the concept of self-efficacy. Role competency incorporates the two aspects discussed in the earlier MAPP model (Gorman & Cartwright, 1991; Hunot & Rosenbach, 1998): role adequacy and role legitimacy. The former aspect is more congruent with self-efficacy, as it reflects the individual's perception of their capabilities in the role, while legitimacy is the person's belief that they are justifiably in that role. Also, role competency explicitly links the support a person perceives in the role to their legitimacy and adequacy.

A nurse's role competency may be developed by individual and environmental factors. These include education and positive experience, support and encouragement, observation of appropriate role models and effective interpretation of their anxiety and other emotions. In terms of the aspects of the work environment identified in earlier chapters (see Chapter 2 and Chapter 3), effective nursing leadership and clinical supervision provide both support and access to role models, while participation in the hospital's policy development may provide positive experience in achieving goals. Clinical supervision also provides an opportunity to reflect on practice, to develop skills, and to manage work-related stress (Proctor, 1986). It may therefore improve the nurse's skills, shape their interpretation of anxiety and enhance their ability to cope effectively.

Nurses' education and experience may influence their role competency, as these factors provide the basic role requirements for work in mental health. In addition, aspects of the work environment, articulated in the literature as nursing leadership and support, nurse participation in hospital affairs (Lake, 2002), and clinical supervision (Winstanley & White, 2003), may have a direct influence on the nurse's role competency. However, these factors, together with others, may also be considered a component of the support an individual receives in an organisation (Angus, et al., 2001a; Bandura, 1988; Brown, et al., 2005). This suggests that one of the antecedents to role competency in the MH-MAPP model is the concept of role support.

4.1.3. Role Support

Role support is the perception by the nurse that they have access to sufficient support from their organisation. A number of the aforementioned factors that develop strong self-efficacy,

and therefore role competency, may be influenced by support, particularly in an organisational context (Bandura, 1988; Brown, et al., 2005). The MH-MAPP model explicitly accounts for these elements through their incorporation into a separate construct (Lauder, et al., 2000). That is, the individual's role competency is considered independent of the aspects that are regarded as supportive, permitting the separate identification of factors that may influence role support.

The MH-MAPP model views support as the nurse's perceived access to supportive colleagues who are more experienced or specialists in the area (Lauder, et al., 2000). However, the model also considers role support as an antecedent to both role competency and therapeutic commitment, which suggests that supportive aspects of the environment not named in the model may influence role support. That is, as the work environment may influence the other components of the MH-MAPP model through role support, the latter concept may be viewed more broadly. In this study therefore, the concept of role support includes access to supportive colleagues but may be influenced by other supportive components of the work environment.

In work outside of health, a number of organisational aspects of support have been identified and linked to improved self-efficacy and performance. Brown et al. (2005) found that factors such as professional development, recognition, adequate compensation, administrative support, procedural efficiency, and effective communication from their managers increased business managers' self-efficacy and performance. Also identified in that research was the detrimental effect of a discrepancy between work demands and resources; that workload exceeds capacity. This role overload was found to attenuate the positive influence of organisational support factors on self-efficacy. A similar result has been found between comparable factors in health settings, where an imbalance between patient care required and nursing resources available was associated with negative nurse and patient outcomes in medical-surgical wards (Duffield, et al., 2007; O'Brien-Pallas, et al., 2004).

The concept of role support is consistent with several aspects of the work environment identified in the wider nursing and mental health literature, in particular clinical supervision. Clinical supervision may be defined as the support provided to less experienced nurses in the development of therapeutic competence (Bland & Rossen, 2005; Winstanley & White, 2003). This bears strong resemblance to the concept of role support. In addition, other factors, such as access to continued education and preceptors, collegial nurse-doctor relationships, richer

skill mix, adequate staffing and strong leadership, may provide opportunity to access an experienced supportive colleague.

These characteristics of organisational support were identified in the magnet hospital research and many subsequent studies of nursing work environments, cited earlier (see Chapter 3, page 35). International research has suggested that organisational support may impact nurses' performance in patient care (Tervo-Heikkinen, et al., 2008; Vahey, et al., 2004; Van Bogaert, et al., 2009). In Australia, organisational support has been linked to nurses' satisfaction with their job and with their profession (Duffield, et al., 2009c; Duffield, et al., 2007). Organisational support and leadership have been identified as significant issues in mental health in Australia, as "the very services that require better staff are unable to attract that staff and rely on junior staff, who in many circumstances work with little supervision" (NSW Mental Health Sentinel Events Review Committee, 2005 p. 17).

Role support therefore incorporates a number of factors that have been shown to be influential in the nursing and mental health literature. In nursing studies, several of these factors have been measured using variants of the Nursing Work Index (Aiken & Patrician, 2000; Kramer & Hafner, 1989; Lake, 2002). The domains of this instrument measure nurses' perceptions of support from the organisation in regard to recognition, the commitment of the organisation to a quality outcome for patients, the backing of nursing within the organisation, relationships with doctors and the adequacy of staffing. Some components of the work environment, also measured using this instrument, such as nursing leadership, participation in governance and clinical supervision, could be influential on role competency both through their influence on role support and directly.

The MH-MAPP model views role support as an antecedent to role competency. In addition to the effect of role support on role competency, in the MH-MAPP model the construct is also postulated to have a direct influence on therapeutic commitment (Angus, et al., 2001a; Lauder, et al., 2000). The nature of this association has not been well articulated, but it has been shown to have a statistical relationship at least (Angus, et al., 2001a; Lauder, et al., 2002), although not in all studies (Lauder, et al., 2002).

This model identifies the support a nurse receives in the role and their perception of adequacy and legitimacy as predecessors to the nurse's ability and willingness to relate therapeutically. A number of factors of the individual are explicitly defined as important

influences on these concepts, particularly the impact of education and experience on role competency. In addition, situational constraints were identified as potential influences but not added to the MAPP model. These work environment factors, described in the wider literature, will be considered for inclusion in an expanded model and linked to the three components of the original MH-MAPP framework.

4.2. Additional Constructs

The three core constructs of the MH-MAPP model, therapeutic commitment, role competency and role support, provide the basis for an extended model that includes the explicit identification of factors noted in wider nursing, mental health and other research. These additional constructs will be added to the initial MH-MAPP model through consideration of their relationships with the central elements. Consistent with the partial least squares path modelling analytical method described later (see Method, page 85), each relationship in the model is expressed as an hypothesis.

Each of the additional constructs to be added to the model has been identified in the literature as a potential impact on the nurse's willingness and ability to engage therapeutically with patients. These factors may be considered influential through the support they provide to the nurse in their role, through their effect on the nurse's belief that they are legitimately in the role, through their perceived adequacy or self-efficacy, or more directly on their therapeutic commitment. Some factors may influence both the perceived role support of a nurse and their role competency.

As this is the synthesis of a developed model and additional concepts, it is possible to link a number of extended components to several of the core components. However, with a limited sample size, discussed later (see Method, page 85), the number of links, and therefore of hypotheses, must be restricted. Although several of the added constructs are clearly linked to more than one, in general these have been linked to only one of the core concepts. The method of measurement of each variable will be described in Chapter 5.

Staffing

The amount of nursing staff available to provide direct care to patients on a ward is an important factor in nurse and patient outcomes. However, there is little recent research in regard to the impact of staffing levels in mental health. Studies in general nursing, together

with early work in mental health, have indicated that inadequate staffing support may negatively influence nurse's job satisfaction and attitudes (Aiken, et al., 2002b; Cleary & Edwards, 1999). Insufficient staffing has been linked to increased stress, depersonalisation and low emotional energy (Garrosa, et al., 2008), qualities that link to the nurse's capacity to relate therapeutically to patients. In the present study the level of staffing, obtained from ward rosters, is considered to be an influence on the nurse's role support, as it is an aspect of the work environment that provides nurses with the opportunity to interact with each other and with patients.

Staffing and Resource Adequacy

Staffing numbers may be captured directly from ward rosters. However, a different view of support may be obtained through the nurse's perception of the adequacy of staffing and other resources. The concept of *Staffing and Resource Adequacy* therefore captures staffing from a different perspective, as the perceived adequacy of that staffing. It reflects the nurse's view of the time and opportunity available to discuss patient care problems with colleagues. In addition, the adequacy of support services and of the skill mix is considered. This factor links to role support in the core MH-MAPP model.

Skill Mix

As discussed in Chapter 3, similar to nurse staffing, the presence of a rich skill mix (a higher proportion of registered nurses) on a ward provides the nurse with the opportunity to consult experienced colleagues about patient care when needed. Conversely, the expanded supervisory role of RNs in low skill mix wards may reduce the level of supervision and monitoring of each other's work (Chang & Mark, 2009). Skill mix is also a potential influence on the nature of the RN's workload, increasing supervision and decreasing opportunity to interact meaningfully with patients. Skill mix is linked to the nurse's role support.

Nursing Foundations for Quality of Care

As indicated earlier, Lake (2002) described these nursing foundations as crucial aspects of quality care in an organisation. This concept includes the presence of preceptors for new nurses, competent nursing colleagues, a nursing model of care and access to continuing education, elements of the work environment that provide support to nurses in their role. Similar to some other factors in this model, the foundations of quality care have been

associated with nurses' job satisfaction, burnout and self-reported quality of care (Aiken, et al., 2008; Armstrong, et al., 2009). This construct links to role support.

Collegial Nurse – Doctor Relations

Relationships between nurses and doctors have been found to be an influence on nurse and patient outcomes. For example, research in general nursing linked collegial relationships, nurses' job satisfaction and stress (Manojlovich, 2005). In mental health, participation in team planning and delivery of care has been linked to patient outcomes (Alexander, et al., 2005). In NSW, several studies have indicated that collegial teamwork is a rewarding aspect of nursing work in mental health (Cleary, et al., 2005; White & Roche, 2006). Good relationships provide nurses with the opportunity to gain support from a medical colleague, as well as to work collaboratively and to enhance communication about patient care. In this study collegial nurse-doctor relationships (termed *Collegial Nurse-Doctor Relations* for consistency with other research) are linked to role support.

Clinical Supervision

The most commonly implemented model of clinical supervision is that described by Proctor (1986). It includes an educational component, an element of clinical governance and the opportunity to recognise and address work related stress. Research into this process indicates that it may reduce stress, burnout and job dissatisfaction, and improve the application of education. Nurses identify it as a valuable supportive exercise. This construct is related to role support, but with the inclusion of educational and governance aspects also to role competency. In this study clinical supervision is therefore linked to both concepts in the core MH-MAPP model.

Nurse Participation in Hospital Affairs

Another concept in the extended model is not clearly linked to a single core construct. The participation of nurses in hospital affairs has been cited in general nursing as an important predictor of positive outcomes such as job satisfaction and reduced burnout (Aiken, et al., 2008; Laschinger & Leiter, 2006; Leiter & Laschinger, 2006). The opportunity to participate in hospital policy and governance and to develop one's career are linked to role competency as they enhance the nurse's legitimacy in the role and, through access to role models and graded experience, also improve role adequacy. However, supportive aspects of this construct such as

access to senior nursing colleagues and the responsiveness of the organisation are linked to role support.

Nurse Manager Ability, Leadership, and Support of Nurses

Nursing leadership has been identified as an issue of concern in mental health in Australia (Mental Health Council of Australia, 2005; NSW Legislative Council Select Committee on Mental Health, 2002; Senate Community Affairs References Committee, 2002). This factor has been linked to positive outcomes for patients and to nurses' job satisfaction. It has been identified in the general nursing literature as an important support to nurses in their professional development and in providing direction at the ward and organisational level (Hansen, et al., 2007). Positive leadership includes a mentoring facet that links to role competency and a supportive component that links to role support.

Nurse Qualifications

The skills and knowledge of the nursing workforce in mental health have been identified as an issue of concern (Senate Community Affairs References Committee, 2002). Education provides the nurse with these necessary qualities in order for them to feel adequate in the role (Lauder, et al., 2002). Their perceived legitimacy in the role may also be enhanced through education as it provides justification to be in that position and to work with patients (Albery, et al., 2003). A nurse's level of qualification is a proxy measure of their education, as those with higher qualifications may be exposed to greater development of their interpersonal and other skills. Education may furnish the nurse with skills and knowledge, and enhance their perceived legitimacy in the role. This construct therefore links to the core concept of role competency.

Nurse Experience

Alongside education, experience has been identified as a significant factor in the capacity of health professionals to relate therapeutically with patients (Horvath, 2005). Exposure to positive experiences is considered in the MH-MAPP model to improve a nurse's role competency through increased self-efficacy. Experience in the clinical environment exposes nurses to a variety of situations and supported interpretation helps them learn from this experience and apply it to future situations. Experience, measured as the nurse's years of experience, is linked to their role competency.

Patient Turnover

The movement of patients on and off the ward has been identified in the literature as an issue of workload and of opportunity to engage therapeutically. That is, rapid movement of patients may impact on the time the nurse has available to develop the relationship and may influence the nature of the relationship (Gijbels, 1995). Continuity, a factor that has been identified as important in the development of a trusting therapeutic relationship (Wierdsma, et al., 2009), may be disrupted by high rates of movement. In this expanded model patient turnover is linked directly to therapeutic commitment, as it does not influence the nurse's role competency or role support.

Voluntary Patients

As discussed earlier (see Patient Factors, page 31), an important influence on the nurse's capacity to engage in a therapeutic relationship is the characteristics of the patient. Research has suggested that patients experiencing a severe psychotic illness may be unwilling or unable to relate to health professionals (Howgego, et al., 2003). This factor is therefore a potential barrier to engagement, although there have been inconsistent findings in studies that have included diagnostic or acuity measures (Alexander, et al., 2005; Bjørngaard, et al., 2007). These measures were not available in this study, and a proxy measure of acuity was chosen: the proportion of patients involuntarily admitted to the ward. This factor was not conceived as one that linked to nurse's role support or role competency, so it was linked directly to therapeutic commitment.

These additional concepts, drawn from a range of literature, provide a description of the specific factors of the work environment that may influence the nurse's therapeutic commitment through the MH-MAPP model. In keeping with the analytic method described below, these constructs and their relationships to the core concepts are articulated as hypotheses.

4.3. Hypotheses & Model

The concepts and relationships in the MH-MAPP model have been identified through each of the revisions described above. Therapeutic commitment is viewed as the primary concept, with role competency and role support being defined as components thereof. Further, role support is explicitly described as a component of role competency (Lauder, et al., 2000;

Lauder, et al., 2002). In this study, all relationships in the model are defined as hypotheses, so that these three links may be described accordingly:

- That increased role support will be related to increased role competency
- That increased role competency will be related to increased therapeutic commitment
- That increased role support will be related to increased therapeutic commitment

Each of the core constructs has a number of additional factors linked to it. These are listed in groups according to the core concept to which it is linked.

4.3.1. Hypotheses Related to Role Competency

Role competency is believed to be influenced by clinical supervision, years of experience in mental health, nursing leadership, participation in hospital affairs, and nursing qualifications. The relationships included in the model may be expressed as hypotheses as follows:

- That the presence of clinical supervision will be related to increased role competency
- That greater years of experience in mental health will be related to increased role competency
- That increased nurse manager ability, leadership, and support of nurses will be related to increased role competency
- That increased nurse participation in hospital affairs will be related to increased role competency
- That higher qualifications in mental health will be related to increased role competency

4.3.2. Hypotheses Related to Role Support

Role support has a number of factors linked to it. These include clinical supervision, collegial relationships, leadership, participation in the hospital, the foundations for quality nursing care, staffing and resources, and skill mix. The expected relationships are described as:

- That the presence of clinical supervision will be related to increased role support
- That increased collegial nurse-doctor relationships will be related to increased role support
- That increased nurse manager ability, leadership, and support of nurses will be related to increased role support
- That increased nurse participation in hospital affairs will be related to increased role support
- That increased nursing foundations for quality of care will be related to increased role support

- That increased staffing & resource adequacy will be related to increased role support
- That a higher proportion of registered nurses on the ward will be related to increased role support
- That higher levels of ward staffing will be related to increased role support

4.3.3. Hypotheses Related to Therapeutic Commitment

In addition to the two factors linked to therapeutic commitment in the development and revision of the MH-MAPP model, patient turnover and the proportion of voluntary patients were considered relevant factors. These are expressed as the hypotheses:

- That lower levels of patient turnover will be related to increased therapeutic commitment
- That a higher proportion of voluntary patients on the ward will be related to increased therapeutic commitment

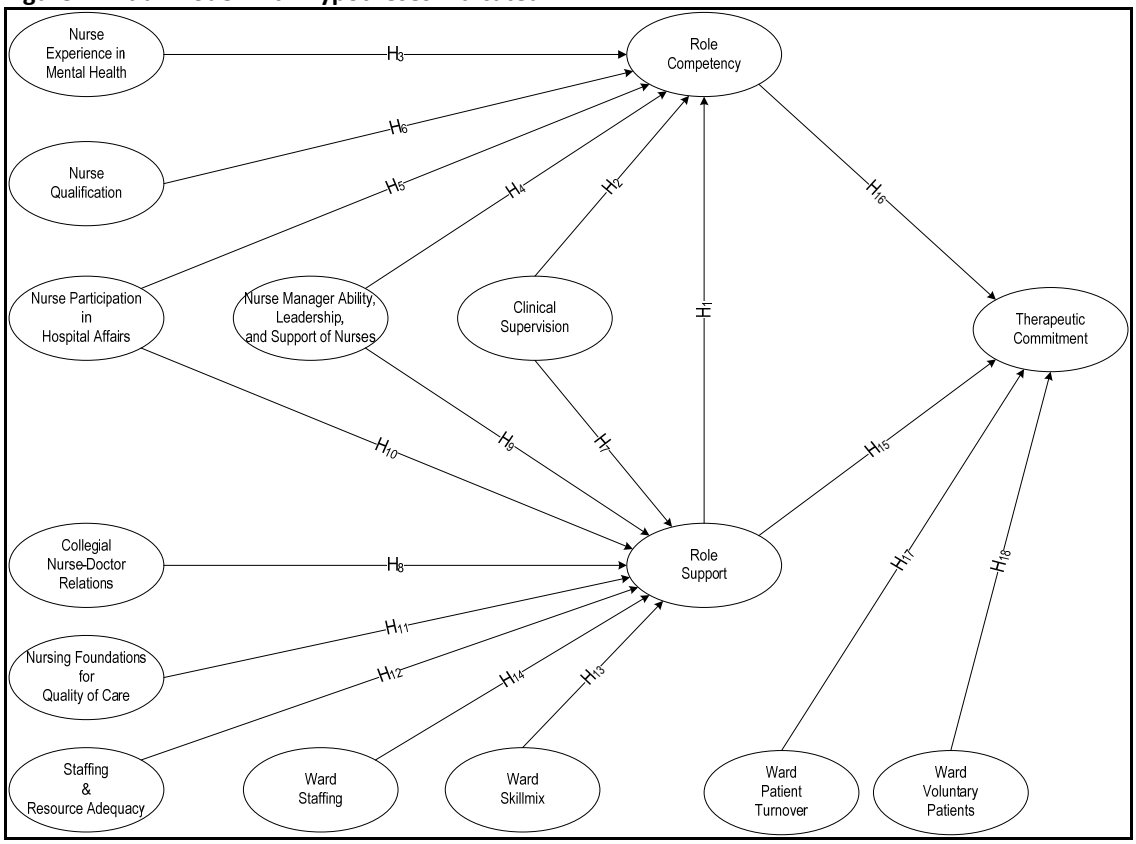
Together, the hypotheses for the complete extended model, grouped and numbered according to the core concept to which they link, are summarised in Table 1. It should be observed that these hypotheses are stated in the positive manner commonly used in partial least squares path modelling (Hansmann & Ringle, 2004; Lings & Owen, 2007). In addition, as these hypotheses are stated positively they appear to imply causality. However is it important to note that the model described below has been constructed with reference to theory and previous research, so that potential causality is based on that process and the analytic procedures that follow can make no determination related to causality (Byrne, 2001; Tenenhaus, et al., 2005).

Table 1 Summary of Hypotheses

Hypotheses Related to Role Competency	
H1	That increased role support will be related to increased role competency
H2	That the presence of clinical supervision will be related to increased role competency
H3	That greater years of experience in mental health will be related to increased role competency
H4	That increased nurse manager ability, leadership, and support of nurses will be related to increased role competency
H5	That increased nurse participation in hospital affairs will be related to increased role competency
H6	That higher qualifications in mental health will be related to increased role competency
Hypotheses Related to Role Support	
H7	That the presence of clinical supervision will be related to increased role support
H8	That increased collegial nurse-doctor relationships will be related to increased role support
H9	That increased nurse manager ability, leadership, and support of nurses will be related to increased role support
H10	That increased nurse participation in hospital affairs will be related to increased role support
H11	That increased nursing foundations for quality of care will be related to increased role support
H12	That increased staffing & resource adequacy will be related to increased role support
H13	That a higher proportion of registered nurses on the ward will be related to increased role support
H14	That higher levels of ward staffing will be related to increased role support
Hypotheses Related to Therapeutic Commitment	
H15	That increased role support will be related to increased therapeutic commitment
H16	That increased role competency will be related to increased therapeutic commitment
H17	That lower levels of patient turnover will be related to increased therapeutic commitment
H18	That a higher proportion of voluntary patients on the ward will be related to increased therapeutic commitment

In order to test these hypotheses, they were assembled into a model for analysis (Figure 4). This model identifies each of the concepts discussed previously as a labelled oval, with the relationships between concepts represented by lines. Arrows indicate the suggested direction of influence and therefore the hypothesised effect of one concept on another.

Figure 4 Initial Model with Hypotheses Indicated



4.4. Summary

The role of the nurse in mental health centres on the therapeutic relationship with patients. If a nurse perceives that they have the experience, skills and knowledge to work with mental health patients and that they are legitimately in that role they are more likely to exhibit a strong willingness to engage in effective therapeutic relationships with these patients. This capacity, referred to as therapeutic commitment, may be influenced by the nurse's education, experience and work environment factors such as leadership, collegial relationships, participation in the hospital, the foundations of quality care, clinical supervision, staffing and skill mix, and patient characteristics. Many of these factors have been associated with nurse and patient outcomes in general nursing research, but rarely quantitatively examined in mental health.

This Chapter has described the development of a model that extended a framework, initially developed for application in alcohol counselling and later revised for use in mental health. This core MH-MAPP model described therapeutic commitment and its antecedents, role competency and role support. Both role support and role competency were suggested to

influence the nurse's therapeutic commitment, and role support was also proposed to impact role competency. In the current study, aspects of the work environment were linked to this framework to provide an extended model that included relevant environmental factors from a range of research. The nurse's experience, education, involvement in clinical supervision, participation in hospital affairs and perceived leadership support have been linked to role competency. Collegial relationships, the foundations of quality care, clinical supervision, leadership, participation in hospital affairs, staffing and skill mix have been linked to role support. Finally, the turnover of patients on a ward and the legal status of those patients have been linked to therapeutic commitment. The relationships of these additional environmental and individual factors, together with those in the core MH-MAPP model, have been articulated as hypotheses that will be tested against data using the partial least squares path modelling technique.

5. Method

The therapeutic relationship is the focus of nursing in mental health. In order to undertake this component of their role, nurses working in this area must display therapeutic commitment, the necessary precursor to effective relationships with patients. Therapeutic commitment and its components, role support and role competency, may be influenced by characteristics of the nurse, patient and work environment. The concept is contained within a core model that has been extended with factors derived from the literature. This extended model, described in Chapter 4, explicitly identifies these constructs and their relationships to therapeutic commitment, role support and role competency.

This study was undertaken using a model testing design, where the hypothesised model was tested empirically using cross-sectional data. The data were collected using a *Nurse Survey* and *Unit Profile & Staffing* form (ward profile) developed for this study. Partial least squares path modelling (PLS-PM) was chosen as the analytical method. This chapter describes the data collection procedures, details of the instruments and variables, selection of the sample and ethical considerations. The steps followed in model testing are examined in detail.

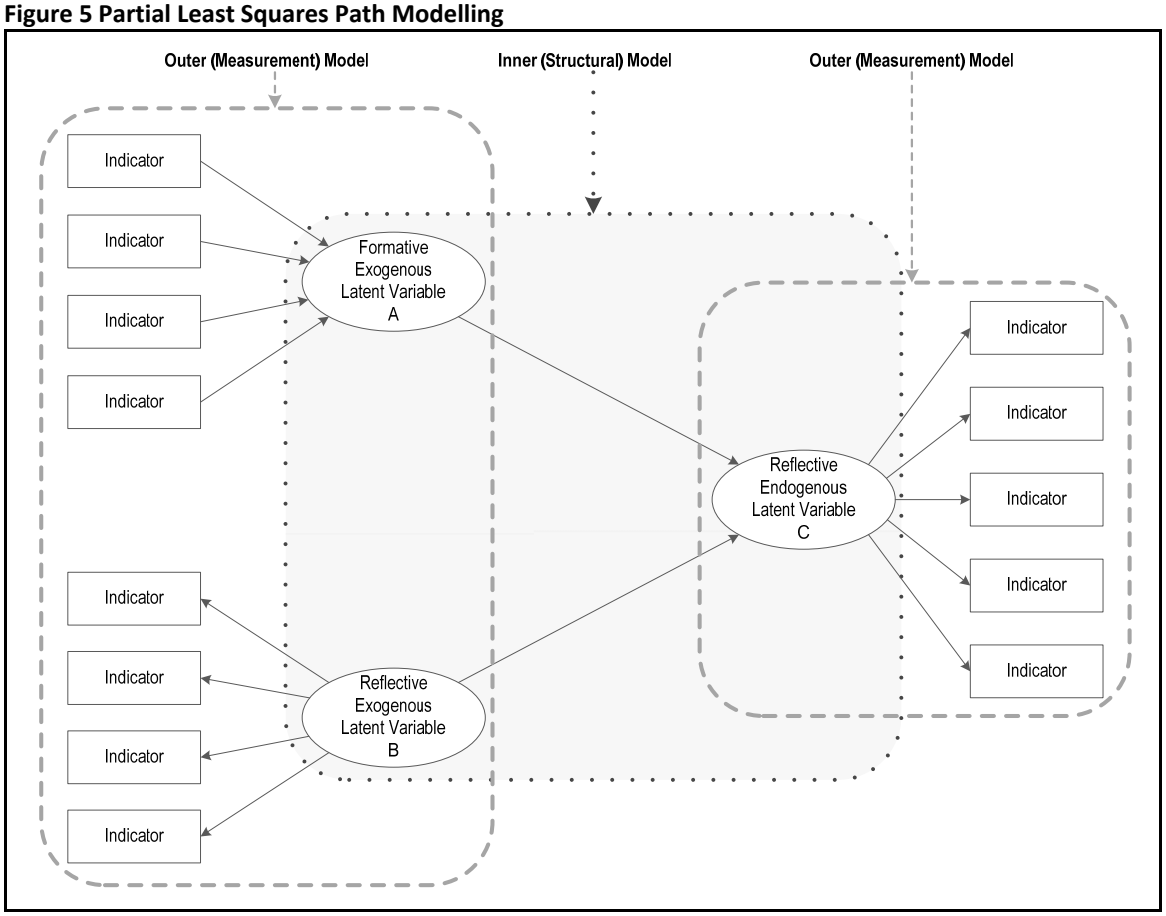
5.1.1. Partial Least Squares Path Modelling

Partial least squares path modelling is an analytical technique for describing the relationships between observed or measured variables and theoretical constructs. The method was first developed by Wold (1975) in order to estimate path models where theoretical constructs were indirectly measured using multiple items or indicators.

This modelling technique is similar in some ways to structural equation modelling (SEM), in that it requires the development of a conceptually derived model based on theory or previous research, that hypothesises the relationships between a set of variables. Also similar to SEM, the model to be tested is built from abstract constructs that are indirectly measured. A common example is the measurement of attitude (Forero, et al., 2002) where a respondent's attitude must be inferred from their responses to questions considered to indicate attitude. In both SEM and PLS-PM, this is termed a latent variable (LV). These constructs are defined by a set of observed variables, variously referred to in the literature as manifest or measured variables, observed variables, or simply items or indicators. Latent variables that are proposed

to be influenced by other latent variables in the model are called endogenous (or dependent). Those LVs that influence other LVs but are never dependent in the model are termed exogenous (Tenenhaus, et al., 2005). The derived model therefore has 2 components: the outer, or measurement, model, and the inner, or structural model (Figure 5).

Figure 5 Partial Least Squares Path Modelling



(adapted from Keeves, 1986)

An important differentiation between SEM and PLS-PM is the assumptions regarding the development of latent variables. Structural equation models expect that all items used to measure LVs will be reflective in nature. That is, the indicators are viewed as affected by the same underlying concept – the latent variable. Different responses to the observed items do not change the construct being measured, but imply that other indicators also change in the same direction. An example may be taken from Chin (1998). For the latent variable 'mental inebriation', the reflective measures may be blood alcohol level, impaired driving ability, and performance on mental calculations. The underlying assumption is that an increase in one of these areas would also see an increase in the others; that they *reflect* the construct. In contrast, the latent variable may also be described by items that are said to create, or form,

the construct. The same latent variable may be described using the three items beer, wine and spirits consumed. In this case, an increase in one of these indicators does *not* imply an increase in any of the others. While SEM assumes the use of reflective measures, PLS modelling permits the use of both reflective and formative indicators (Chin, 1998; Sellin, 1995; Tenenhaus, et al., 2005).

PLS modelling uses a component-based rather than the covariance based approach used in SEM, and imposes less stringent assumptions about the level of measurement, distribution of data, multicollinearity, and sample size than SEM (Falk & Tonkin, 2001; Garson, 2008; Sellin, 1995). It is consequently often referred to as 'soft-modelling'. However, this is not to say that there are no expectations of data distribution or type in PLS-PM, but rather that it is *less sensitive* to these factors. There remain several important points in regard to the assumptions of PLS-PM. These involve multicollinearity, normality of data, and sample size (Cassel & Hackl, 2000; Cassel, Hackl, & Westlund, 1999; Chin, 1998; Garson, 2008).

The first or these assumptions, low multicollinearity, is a major requirement in many techniques such as ordinary least squares regression and SEM (Chin, 1998). In PLS-PM, there is not such a strong requirement, although it needs to be considered as high multicollinearity between indicators may make factors relatively difficult to distinguish from each other (Garson, 2008). The iterative approach to PLS-PM permits ready review and consideration of this issue during the analysis. In the case of very high correlations between variables, it may be appropriate to remove one or more variables during, or prior to, PLS-PM analysis (Tenenhaus, et al., 2005).

PLS-PM is considered to be a suitable approach for model testing using small samples and relatively high numbers of variables, particularly if factor loadings are above 0.8 (Cassel, et al., 1999; Chin, Marcolin, & Newsted, 2003). However, as noted by Hsu, Chen and Hsieh (2006), small sample sizes may not be sufficient to detect significant but small path coefficients (see also Sample Selection, below). This factor needs to be considered when considering removal of paths during the iterative modelling procedure; with small samples a conservative approach should be taken to the removal of non-significant paths. In addition, the exploration of alternative models is not recommended with small sample sizes (Chin, 1998; Chin, et al., 2003).

Although PLS-PM has been considered 'distribution-free' (Chin, 1998; Esposito-Vinzi, et al., 2008), some research has suggested that the distribution of data, particularly of the dependent

variable, is important in some applications of this technique. In particular, in studies examining the differences between groups, if data were highly skewed PLS-PM showed limited ability to discriminate between the groups unless the sample size was increased (Qureshi & Compeau, 2009). In contrast, other work has suggested that moderate skewness of data has little effect on findings (Hsu, et al., 2006). This study has only one group, so the issue of normality is less of a concern. However, the distribution of data for the dependent variable will be examined.

Partial least squares path modelling has advantages over SEM in testing models where theory is not well developed or established, and where complex models with a large number of constructs are to be tested (Sellin, 1995). In contrast to the strictly confirmatory approach recommended for SEM, where a model may be either rejected or 'not disconfirmed' (Byrne, 2001; Cliff, 1983; Garson, 2008; Maruyama, 1998), PLS-PM may be conducted in an exploratory mode, through the addition or removal of paths and latent variables followed by further model testing (Chin, 1998; Falk & Tonkin, 2001; Keeves, 1986; Sellin, 1995). In relation to this study, where the model to be tested has been drawn from a number of sources and applied to nurses working in mental health, the ability to flexibly explore models and the relationships between the constructs is of significant benefit.

PLS path models have two primary components that correspond to two sets of linear equations: the outer (or measurement) and inner (or structural) models (Sellin, 1995; Tenenhaus, et al., 2005). The outer model specifies the relationships between the LVs and their indicators, and the inner model the relationships between the various LVs (see also Figure 5). PLS allows the examination of both point estimates such as weights and loadings, and fit indices that reflect the predictive power of the estimated inner and outer model relationships (Sellin, 1995).

In contrast to other techniques such as SEM, modelling using the PLS-PM approach provides no single metric of overall model fit . Rather, the model is assessed using a variety of measures such as R^2 and Q^2, described below (Chin, 1998; Marcoulides & Saunders, 2006).

In the model to be tested here, the indicators, latent constructs, and hypothesised relationships have been developed from previous research and theory in general and mental health nursing, substance abuse counselling and psychotherapy, together with literature from related fields. Data will be collected with previously used instruments and survey questions.

5.2. Instruments

As stated previously, measurement of the therapeutic relationship itself is challenging, with no readily defined instrument and ongoing controversy about the practicality thereof (Scanlon, 2006). The dependent variable in this study was therefore the motivation and ability of the nurse to engage in this relationship, therapeutic commitment, measured using the Mental Health Problems Perception Questionnaire (MHPPQ) (Angus, et al., 2001a; Angus, Lauder, & Reynolds, 2001b; Lauder, et al., 2000). The Practice Environment Scale of the Nursing Work Index (Lake, 2002; Lake & Friese, 2006) was used to capture aspects of the work environment from the nurses' perspective. Other work environment factors were collected through a profile of ward staffing and patient movement, while additional nurse characteristics were included in the nurse survey.

5.2.1. Mental Health Problems Perception Questionnaire

The Mental Health Problems Perception Questionnaire (MHPPQ) was initially developed for use in a study investigating the role of rural district nurses in the United Kingdom (Lauder, et al., 2000, 2001). It was adapted from the Alcohol and Alcohol Problems Perception Questionnaire (AAPPQ) developed in the 1980s (Cartwright, 1980, 1981; Shaw, et al., 1978). Further adaptations of the original instrument have been developed in the clinical area of alcohol and other drugs (Airey & Marriott, 2003; Anderson, et al., 2004; Anderson, et al., 2003; Hughes, et al., 2008; Watson, et al., 2006; Watson, et al., 2003), and for application in generalist rural settings in Australia (Clarke, et al., 2005).

Development and history

During the initial development of the MHPPQ, a format similar to that of the AAPPQ was retained, with a series of statements and responses on a Likert-type scale. Congruent with the change in clinical area, all references to alcohol problems in the AAPPQ were changed to mental health problems. The number of items was reduced from the 41 of the AAPPQ to 27 following item analysis and consideration of the changed theoretical underpinnings (Lauder, et al., 2000). Responses were scored on a 7 point scale from 1 to 7: strongly disagree, quite strongly disagree, disagree, neither agree nor disagree, agree, quite strongly agree, strongly agree. Two items were reversed, and the scores summed. Scores ranged from 4 to 28 for role support, 9 to 63 for role competency, and 14 to 98 for therapeutic commitment (Table 2). Less

positive therapeutic commitment, and self-perceived lower levels of role competency and role support were represented by lower scores (Angus, et al., 2001a; Lauder, et al., 2000).

Table 2 Score Ranges for the MHPPQ

	Min	Max
Therapeutic Commitment	14	98
Role Competency	9	63
Role Support	4	28

Revisions for this study

The 27 items in the MHPPQ were reviewed for face validity and some minor alterations to terminology made to meet the context of this study; the abbreviation DN (Lauder, et al., 2001) was replaced with Nurse. The items as applied in this study are listed in Table 3 with their associated domains, and in the context of the Nurse Survey in Appendix B.

Table 3 Mental Health Problems Perception Questionnaire

Latent Variable	Indicator Description	Item No.	Label
Role Competency	I feel that I know enough about the factors which put people at risk of mental health problems to carry out my role when working with this client group.	1	zrc1
	I feel I know how to treat people with long-term mental health problems.	2	zrc2
	I feel that I can appropriately advise my patients about mental health problems.	3	zrc3
	I feel that I have a clear idea of my responsibilities in helping patients with mental health problems.	4	zrc4
	I feel that I have the right to ask patients about their mental health status when necessary.	5	zrc5
	I feel that my patients believe I have the right to ask them questions about mental health problems when necessary.	6	zrc6
	I feel that I have the right to ask a patient for any information that is relevant to their mental health problem.	7	zrc7
	I have the skills to work with patients with mental health problems.	14	zrc8
	I feel that I can assess and identify the nursing problems of patients with mental health problems.	15	zrc9
Role Support	If I felt the need when working with patients with mental health problems I could easily find someone with whom I could discuss any difficulties I might encounter.	8	zrs1
	If I felt the need when working with someone with mental health problems I could easily find somebody who would help me clarify my personal difficulties.	9	zrs2
	If I felt the need I could easily find someone who would be able to help me formulate the best approach to a patient with mental health problems.	10	zrs3
	When working with patients with mental health problems I receive adequate supervision from a more experienced person.	25	zrs4
Therapeutic Commitment	I am interested in the nature of mental health problems and the treatment of them.	11	ztc1
	I feel that I am able to work with patients with mental health problems as effectively as other patients who do not have mental health problems.	12	ztc2
	I want to work with patients with mental health problems.	13	ztc3
	I feel that there is nothing I can do to help patients with mental health problems.*	16	ztc4
	I feel that I have something to offer patients with mental health problems.	17	ztc5
	I feel that I have much to be proud of when working with patients with mental health problems.	18	ztc6
	I feel that I have a number of good qualities for work with patients with mental health problems.	19	ztc7
	In general one can get satisfaction from working with patients with mental health problems.	20	ztc8
	In general it is rewarding to work with patients with mental health problems.	21	ztc9
	I often feel uncomfortable when working with people with mental health problems.*	22	ztc10
	In general I feel that I can understand patients with mental health problems.	23	ztc11
	On the whole I am satisfied with the way I work with patients with mental health problems.	24	ztc12
	When working with patients with mental health problems I receive adequate ongoing support from colleagues.	26	ztc13
	Caring for people with mental health problems is an important part of a nurse's role.	27	ztc14

* Responses to Items 16 and 22 are reversed during analysis

Psychometric properties

The MHPPQ is based on an explicit theoretical framework, which provides some foundation for content validity (Burns & Grove, 2005; Wilson, 1989). Further review of the items by external judges is not described in the literature, although the various modifications of the instrument suggests the content is viewed to be appropriate across a range of research environments (Airey & Marriott, 2003; Clarke, et al., 2005; Oakley-Browne, et al., 2007; Watson, et al., 2006). However, the MHPPQ may be placed, conservatively, in the developmental stage as described by Wilson (1989). Further assessment is required to verify that the instrument is an adequate representation of the stated domains. Although not an aim of the study, analysis of data analysed herein may provide a degree of clarification.

Correlation analyses have given support for the relationship between the domains. Statistically significant, although fairly low, Pearson's correlation coefficients are cited by Lauder et al. (2000): therapeutic commitment and role competency ($r=0.53$, $p<0.01$); therapeutic commitment and role support ($r=0.27$, $p<0.05$); and role competency and role support ($r=0.49$, $p<0.01$). Similar values have been cited during further testing: therapeutic commitment and role competency ($r=0.61$, $p<0.001$); therapeutic commitment and role support ($r=0.27$, $p<0.001$); and role competency and role support ($r=0.30$, $p<0.001$) (Angus, et al., 2001a). In both studies, the correlation between therapeutic commitment and role competency was stronger than the other correlations.

Construct validity has been established using principal components factor analysis (PCA) (Angus, et al., 2001a; Lauder, et al., 2000). In the initial development study, Lauder et al. (2000) identified 3 factors, accounting for 53.77% of total variance. Twelve items intended to measure therapeutic commitment accounted for 24.38% (factor loading from 0.50 to 0.82, eigenvalue 7.94); the second factor accounted for 15.24% (factor loadings from 0.52 to 0.86, eigenvalue 4.11) and consisted of 7 items claimed to measure role competency; and 4 items proposed to measure role support accounted for 14.18% of the variance (factor loadings from 0.69 to 0.89. eigenvalue 3.83). A second study has provided similar results, accounting for 50.9% of the total variance, although with the first two factors reversed: nine items intended to measure role competency accounted for 30.4 % of the variance (factor loadings from 0.54 to 0.72, eigenvalue 8.22); 8 items intended to measure therapeutic commitment (factor loadings 0.43 to 0.73, eigenvalue 3.41) accounted for 12.6%; and six items purporting to

measure role support accounted for 7.8% (factor loadings 0.57 to 0.88, eigenvalue 2.11) (Angus, et al., 2001a).

Information on concurrent or predictive validity was not found in the literature.

Internal consistency was estimated by Lauder et al. (2000) during the initial development study, using Cronbach's alpha. Acceptable values of this coefficient vary depending on the intended use. Values over 0.90 are acceptable for any use, values within the range 0.80 – 0.89 are acceptable for personality measures and similar tools (Wilson, 1989), although values in the range of 0.70 – 0.80 are usually acceptable in the social sciences (Garson, 2008). The value for therapeutic commitment was 0.91, role competency 0.85, and role support 0.83 (Lauder, et al., 2000). Similar coefficients were estimated by Angus et al. (2001a): therapeutic commitment 0.84; role competency 0.87; and role support 0.89.

Test-retest reliability has been examined using Pearson's correlation coefficient on data taken from the same sample of undergraduate nursing students, four weeks apart. The stability of the therapeutic commitment scale was supported by a value of $r=0.88$ ($p<0.01$). The other scales also showed stability, although at a less convincing level, with the estimation of a coefficient of $r=0.69$ ($p<0.01$) for role competency and $r=0.70$ ($p<0.01$) for role support (Angus, et al., 2001a). However, although this correlation method is often used to estimate test-retest reliability, intra-class correlation is considered the more appropriate technique (Bland & Altman, 1996). No assessment of reliability using this method has been found in the literature.

The Mental Health Problems Perception Questionnaire captures three domains of interest in this study. The support nurses perceive in their role, their self-assessed competence and feelings of legitimacy are linked to their willingness and ability to develop and maintain a therapeutic relationship with patients.

5.2.2. Nursing Work Index – Practice Environment Scale

The characteristics of the work environment believed to be important influences on the nurse's willingness and ability to engage therapeutically with patients have been outlined in Chapter 3. Factors identified include staffing and resources, skill mix, patient turnover, nurse leadership and a nursing model of care, nurse participation in policy, and accessibility to staff development and support. Several of these elements have been measured in both general and

nursing settings using variants of the Nursing Work Index. In this study these factors will be captured using the Practice Environment Scale of the Nursing Work Index (NWI-PES).

Development and history

The Nursing Work Index (NWI) was developed by Kramer and Hafner (1989). It was intended to measure four variables: nurses' job satisfaction, nurses' perception of the conduciveness of the environment to the provision of quality care, and work values related to job satisfaction and perceived productivity (Aiken & Patrician, 2000; Aiken & Sloane, 1997; Kramer & Hafner, 1989). The items were primarily derived from research into magnet hospitals in the United States. In the development process, common characteristics of the practice environments of these organisations were identified from the reports of nurses working in magnet hospitals, and added to items identified from a review of literature on work values and job satisfaction. A list was compiled, intended to be inclusive of all relevant factors. The instrument was assessed for content validity by researchers involved in the initial magnet hospital study (Kramer & Hafner, 1989). The scale contained 65 items, and required responses to three statements (two 'value' statements and one 'presence' statement) per item on a 4 point Likert scale. Summation of the scores for presence and value provided scores for job satisfaction and for quality care, for the individual respondent.

In their original research with the NWI, Kramer and Hafner (1989) found that mean job satisfaction scores for hospitals correlated with turnover rates, and within hospitals, job satisfaction correlated with quality of care scores. Further research was undertaken using this instrument, and five subscales were developed by Kramer and Schmalenberg (1991a, 1991b): management style; quality of leadership; organizational structure; professional practice; and professional development. The development of these subscales indicated a change in the intended use of the instrument, from the measurement of individual values to characteristics of the organisation (Estabrooks, et al., 2002).

The instrument was revised further during the 1990s to provide an instrument to measure the presence of aspects of the practice environments of nurses. The new instrument was named the Revised Nursing Work Index in 2000 ([NWI-R] Aiken & Patrician, 2000; Aiken & Sloane, 1997). Unlike its predecessor, the NWI-R was not intended to measure the characteristics of individual nurses, but rather traits of wards or hospitals. All items were reviewed conceptually, a number removed, and one added, leaving a 57 item scale. Response to each item was simplified by the removal of the two 'value' statements. The 'presence'

statement was retained (i.e., 'This factor is present in my current job situation') as the purpose of the new instrument was to identify the presence, or otherwise, of the trait. Additionally, new subscales were conceived positing to measure three organisational characteristics attributed in the literature to environments supportive of professional nursing practice: autonomy, control over the work environment, and relationships with medical staff (Aiken & Patrician, 2000). Further revision of the NWI-R decreased the number of items to 49 (Aiken, et al., 2001b; Estabrooks, et al., 2002; Sochalski, Estabrooks, & Humphrey, 1999).

Revision into NWI-PES

Although widely used, the NWI-R has been criticised, in particular for a lack of empirical identification of its domains (Cummings, Hayduk, & Estabrooks, 2006; Lake, 2002). In order to address this concern and to derive a parsimonious, psychometrically sound instrument, with empirically derived subscales, a secondary analysis of data collected using the NWI was undertaken. This large dataset (n=11636), collected for the original magnet hospital research and for a separate study of Pennsylvania nurses in the late 1990s, used two different versions of the NWI with 45 items in common. The magnet hospital data were first subjected to a detailed process of factor analysis and review, resulting in a 31-item instrument that tapped 5 domains: *Nurse Participation in Hospital Affairs; Nursing Foundations for Quality of Care; Nurse Manager Ability, Leadership, and Support of Nurses; Staffing and Resource Adequacy;* and *Collegial Nurse-Physician Relationships* (Lake, 2002). The derived instrument was reduced further to 28-items to address the lack of consistency between the NWI versions used in the studies, and assessed using the Pennsylvania data. The instrument displayed good psychometric properties and has been applied in a number of studies since development (Aiken, et al., 2008; Friese, et al., 2008; Hanrahan & Aiken, 2008; Lake & Friese, 2006; Laschinger & Leiter, 2006). It has also been adopted in the United States as a measure of nursing quality in organisations (National Quality Forum, 2004).

Table 4 The Practice Environment Scale of the Revised Nursing Work Index (NWI-PES)

Latent Variable	Indicator Description*	Item No.	Label
Nurse Participation in Hospital Affairs	Career development/clinical ladder opportunity.	8	znha1
	Opportunity for staff nurses to participate in policy decisions.	9	znha2
	A chief nursing officer who is highly visible and accessible to staff.	14	znha3
	A chief nurse officer equal in power and authority to other top level hospital executives.	23	znha4
	Opportunities for advancement.	26	znha5
	Administration that listens and responds to employee concerns.	33	znha6
	Staff nurses are involved in the internal governance of the hospital. (e.g., practice and policy committees).	35	znha7
	Staff nurses have the opportunity to serve on hospital and nursing committees	39	znha8
Nursing Foundations for Quality of Care	Active staff development or continuing education programs for nurses.	7	znfq1
	High standards of nursing care are expected by the administration.	22	znfq2
	A clear philosophy of nursing that pervades the patient care environment	28	znfq3
	Working with nurses who are clinically competent.	30	znfq4
	An active quality assurance program.	34	znfq5
	A preceptor program for newly hired RNs.	37	znfq6
	Nursing care is based on a nursing, rather than a medical, model.	38	znfq7
	Written, up-to-date nursing care plans for all patients.	44	znfq8
	Patient care assignments that foster continuity of care, i.e., the same nurse cares for the patient from one day to the next.	45	znfq9
Nurse Manager Ability, Leadership, and Support of Nurses	A supervisory staff that is supportive of the nurses.	4	znml1
	A nurse manager who is a good manager and leader.	13	znml2
	Praise and recognition for a job well done.	18	znml3
	A nurse manager who backs up the nursing staff in decision making, even if the conflict is with a physician.	32	znml4
Staffing and Resource Adequacy	Adequate support services allow me to spend time with my patients.	1	zsra1
	Enough time and opportunity to discuss patient care problems with other nurses.	11	zsra2
	Enough registered nurses to provide quality patient care.	12	zsra3
	Enough staff to get the work done.	16	zsra4
Collegial Nurse – Physician Relations	Physicians and nurses have good working relationships.	2	znpr1
	A lot of teamwork between nurses and physicians.	24	znpr2
	Collaboration (joint practice) between nurses and physicians.	36	znpr3

Psychometric properties

Aiken and Patrician (2000) reported that the NWI-R showed significant reliability in obtaining the same results over time. They found no significant differences between total 'presence' scores and scores for subscales using results from studies of magnet hospitals from 1989 (Kramer & Hafner, 1989) and 1994 (Aiken, et al., 1994). Application of the NWI-PES has found similar results, with a number of recent studies reporting similar findings (Aiken, et al.,

2008; Friese, et al., 2008; Hanrahan & Aiken, 2008; Lake & Friese, 2006; Laschinger & Leiter, 2006).

Internal consistency of the NWI-PES has been examined across several studies (Lake & Friese, 2006; Manojlovich & Laschinger, 2007) and was good for each of the subscales and the instrument as a whole (Cronbach's α 0.71 – 0.98). In the original development process, coefficients for each of the subscales were reported as Nurse Participation in Hospital Affairs (α=0.83); Nursing Foundations for Quality of Care (α=0.80); Nurse Manager Ability, Leadership, and Support of Nurses (α=0.84); Staffing and Resource Adequacy (α=0.80); and Collegial Nurse-Physician Relations (α=0.71), with an overall alpha of 0.82 (Lake, 2002). These figures are within the range considered acceptable in the social sciences (Garson, 2008).

It has been suggested that the five domains of the NWI-PES are different perspectives of the underlying construct, referred to variously as *nursing worklife* (Leiter & Laschinger, 2006) or *practice environment* (Lake, 2002), as analyses have reported correlations between the constructs in the range of 0.39 to 0.65 (Lake, 2002; Leiter & Laschinger, 2006). However, as noted by Lake (2002) most correlations are low to moderate and the calculation of subscales rather than a composite index is justified when the separate domains are of interest.

There are several considerations related to the interpretation of reliability when using self-reported instruments such as the NWI-PES. First is the heterogeneity in the evaluation of the listed item by respondents. That is, the items describe characteristics that may be more or less tangible. Organisational unit traits considered intangible are likely to be viewed differently by different nurses, depending on their personal characteristics (Aiken & Sloane, 1997; Kramer & Hafner, 1989). Second, and related, there may be a confounding effect of other variables at the organisational unit level. This situation may arise if, for example, inexperienced nurses are more likely to respond to a question in a particular manner, and a given unit is more likely to contain more inexperienced nurses. Collection of control variables likely to confound results is therefore indicated (Aiken, Sochalski, & Lake, 1997). These variables may be used to adjust for differences between units. However, as with most similar instruments, it is not always possible to estimate the control variables, the control variables themselves must be limited to observable characteristics, and the source of heterogeneity may be unobservable (Burns & Grove, 2005).

The content validity of the original NWI items was evaluated by several researchers involved in the original magnet hospital research from which it was drawn (Kramer & Hafner, 1989). Checks of these items and those adjusted during the revision to the NWI-R were undertaken when the instrument was intended for use outside the United States (Sochalski, et al., 1998). Further analyses during revision into the NWI-PES indicated consistency of scores for all subscales (Lake, 2002). In order to maintain this validity, some slight modifications to terminology were undertaken for this study, discussed below.

Criterion-related validity for the NWI was established by Kramer and Hafner (1989) for the measurement of job satisfaction and quality work environment. Predictive validity for the NWI-PES subscales was supported by the correlation of these scores with magnet and non-magnet hospitals (Lake & Friese, 2006).

Revisions for this study

As part of several prior studies in Australia using this instrument (Duffield, et al., 2009c; Duffield, et al., 2007) all items were reviewed by a panel of experienced nurses for face validity, and some changes made to terminology to address the NSW context. Subsequent to this study, an Australian version of the NWI-R has been developed and piloted (Joyce & Crookes, 2007), and an Australian version of the NWI-PES ([PES-AUS] Middleton, et al., 2008) tested on nurses in four general nursing wards in Sydney.

In this study, the 49-item NWI-R instrument used in other Australian research was included in the nurse survey. This permitted comparison of data with other local work (Duffield, et al., 2009c; Duffield, et al., 2007). However, the shorter NWI-PES instrument (28-items) was used for data analysis due to the strong conceptualisation and empirical basis of the domains. Also, although a composite practice environment scale may be calculated from the NWI-PES using the means of all domain scales (Lake, 2002), analysis applied the five domains as they were of individual interest in the hypothesised model.

5.2.3. Other Variables

In addition to the domains of the Practice Environment Scale of the Nursing Work Index and the Mental Health Problems Perception Questionnaire, other characteristics of the work environment were collected. Factors related to staffing and skill mix, patient legal status and movements, and nurse experience and qualifications were captured, either through the aforementioned nurse survey or ward profile (see Table 5).

Staffing

Considerable research in general nursing has linked a higher number of nurses per patient to improved nurse and patient outcomes. This is often expressed as a ratio of patients to nurses. In the case of this study the variable was calculated as the ratio of patients per nursing staff member. It was calculated per shift from ward profile data, and averaged across the 14 day sample.

Skill Mix

The proportion of registered nurse hours worked on a ward has been associated with nurse and patient outcomes. This variable was derived from daily figures collected on the ward profile during the sample period. The number of registered nurses was divided by the total number of staff per ward-day, and averaged across the sample period.

Clinical Supervision

The nurse's participation in clinical supervision was measured by a simple yes/no response on the nurse survey. Although it would have been desirable to explore this factor in more depth using an instrument that captured detailed characteristics, such as the Manchester Clinical Supervision Scale (Winstanley, 2000, 2001), time and resource constraints on this study did not permit the inclusion of additional instruments.

Experience

The experience of staff on the ward was measured on the nurse survey via two questions: the number of years working in mental health and the number of years working in nursing. These questions were adapted from previous research in Australia (Duffield, et al., 2009c; Duffield, et al., 2007; White & Roche, 2006).

Qualifications

The qualifications of staff were collected on the nurse survey via response to ordinal qualification scales used in prior research (Duffield, et al., 2009c; Duffield, et al., 2007; White & Roche, 2006).

Patient Turnover

This variable was collected from two sources on the ward profile: the ward average length of stay for the month of the study, and the number of patient movements on and off the ward each day.

Voluntary Patients

Similar to skill mix, this variable was taken from the ward profile and calculated as the proportion of patients who were admitted voluntarily. Changes in legal status were accounted for in the data collection, and the variable therefore measured per ward-day. The average percentage per ward was used in the modelling procedure.

Table 5 Nurse, Staffing and Patient Variables*

Variable	Description	Source	Measurement / Equation
Ward Staffing	Patient: Staff Ratio (patients per staff member per shift)	Unit Profile & Staffing form	$\frac{\text{Maximum Number of Patients}}{\text{Number of Staff}}$
Ward Skill Mix	Percentage of registered nurses per shift	Unit Profile & Staffing form	$\frac{\text{Number of Registered Nurses}}{\text{Number of All Staff}} \times 100$
Clinical Supervision	Currently receiving clinical supervision	Nurse Survey	Dichotomous
Nurse Qualifications	Highest mental health qualification	Nurse Survey	Ordinal scale
Nurse Experience	Years worked in mental health	Nurse Survey	Years and months worked, decimal
Patient Turnover	Total patient movements	Unit Profile & Staffing form	Admissions & Transfers In +Discharges & Transfers Out
Voluntary Patients	Proportion of voluntary patients	Unit Profile & Staffing form	$\frac{\text{Number of Voluntary Patients}}{\text{Number of All Patients}} \times 100$

* See also Appendix A, Appendix B, & Appendix G

In accordance with the PLS-PM approach, these variables were applied, together with the domains of the MHPPQ and the NWI-PES, to the model developed earlier. The constructs derived from the instruments were reflective, while each of the additional nurse and ward variables linked to different constructs. In PLS-PM single item constructs may be viewed as either reflective or formative, but more commonly the latter as they form the construct to which they link (Keeves, 1986; Sellin, 1995). Each of the constructs in the model, and their indicators, are provided in Appendix G (page 205). In addition to those in the model, several variables were collected in order to describe the sample and, where possible, to conduct post-hoc comparison with population data (see Appendix A & Appendix B).

Variables describing the concepts in the model were collected using validated instruments and survey data. The sample was obtained with consideration of the analytic technique, ethics, timeframe and resources available.

5.3. Sample Selection

A large sample of nurses across New South Wales mental health wards would be ideal in order to have the greatest confidence in the model testing procedure and in order to generalise the findings. However, a constraint is imposed by the lack of a single procedure for obtaining ethics approval in the NSW public hospital system. Each Area Health Service (AHS) has at least one human research ethics committee, and some have several. Therefore, in order to obtain a large sample of nurses from inpatient mental health units across all AHS, ethics approval would be required from a large number of committees and organisational approval from even more divisions, hospitals and wards. A balance was required between achieving a sufficient sample, and a manageable number of organisational and ethics approvals given finite resources and time.

As stated previously, partial least squares path modelling is a modelling technique that is suitable for small samples. There is no accepted single technique for calculating sample size when applying this analytic method (Marcoulides & Saunders, 2006). The most commonly cited 'rule of thumb' is that the sample be the larger of either: (A) ten times the construct with the largest number of *formative* indicators, or (B) ten times the largest number of structural paths directed at a particular construct in the structural model (Chin, Marcolin, & Newsted, 1996; Chin, et al., 2003). A formulation under (A) was disregarded, as all formative constructs in the model under study have only one indicator. The construct with the largest number of structural paths was *Role Support* with 8, which gave a desired sample size of 80.

As in most statistical techniques, as the number of cases increases, estimation error decreases (Marcoulides & Saunders, 2006). A sample larger than the estimate of 80 would expand the capacity to model a variety of interaction effects or to explore alternative models (Chin, 1998). A sample smaller than this size had the potential to underestimate low structural path coefficients, or to find such coefficients statistically insignificant, thereby discounting paths that may have been significant (Hsu, et al., 2006). However, it has also been proposed that in PLS-PM high indicator loadings (>0.8) mitigate against this (Cassel, et al., 1999; Chin, et al., 2003). In addition, the distribution of the data, particularly of the dependent variable,

should be examined, as highly skewed data may limit the capacity to discriminate between groups (Qureshi & Compeau, 2009). With all of these factors in mind, and as the intention of this study was to test a single model, it was decided to aim for a sample size of 80 or more.

The planned population comprised nurses working on eight mental health wards in two metropolitan Area Health Services. This gave a potential sample of nurses of approximately 250, enough to provide a sufficient sample if a reasonable response rate was obtained. All mental health organisations gave initial approval, but two wards in one AHS withdrew prior to the commencement of the study, citing 'survey fatigue' amongst nurses in mental health. An additional ward from another AHS later expressed interest but also withdrew with no stated rationale. No additional wards were able to participate in the time available for the study. The remaining six wards continued with their involvement in the study, providing a potential sample of 149 nurses. A 14 day period of data collection was chosen to allow for single-day variations in staffing or patient type or numbers, while remaining brief enough to permit collection of data in a reasonable time frame.

5.4. Procedure

The sample period of 14 days for each of the six wards involved in the study gave a total of 84 ward-days. As noted previously, ward data were collected via the *Unit Profile & Staffing* form (Appendix A) and nurse data were collected via the *Nurse Survey* (Appendix B).

A briefing about the study was held on each ward. This included a description of the aims of the study, with sufficient time allocated for potential participants to ask questions and clarify any concerns. Nurses present at the briefing were asked to participate in the study and at that time given the survey package and an information page. Responses were returned via reply-paid mail. Those nurses not present at the initial briefing were left survey packages and instructions. In order to encourage responses and provide further information to staff members not aware of the study, one follow-up visit was made to the unit seven days after the initial unit briefing, and a number of phone calls were made to night and evening staff. Data collection of nurse surveys was considered complete after 14 days, although several surveys were returned after this period. Given that these surveys were all dated during the study period, they were included.

Ward profile data were collected at several times during the study period. Staffing numbers were copied from the unit roster on day 14. Data regarding the number and type of patients

was captured cumulatively during the 14 day period on two wards, and collected from the ward records retrospectively by the researcher on the final day of the study period on other wards.

5.5. Ethical Considerations

Ethics approval was granted from the University of Technology, Sydney Human Research Ethics Committee (2005-0079), and the three relevant institutional committees in the Area Health Service. These committees are not identified by name as a condition of ethics approval was that no ward would be identifiable. The identification of an ethics committee that provided approval for a single ward would violate that undertaking. Ethics committee approval is included in Appendix D.

The survey package was administered anonymously to nurses, although coded per ward in order to link nurse survey and ward staffing profile data, and to enable determination of response rates. An information sheet outlining the rationale and procedures for the study was included in the survey package (see Appendix C). Completion of the anonymous survey was indicative of consent, as indicated in NH&MRC Principle 1.9 (National Health and Medical Research Council, 1999). In recognition of nurses' previously expressed sensitivity over survey information (White & Roche, 2006), few demographic items were requested so as to enhance anonymity and address concerns over potential identifiability of respondents (see Appendix B). No identifiable data were collected in relation to nurse staffing. Data from nurse surveys and ward staffing profiles were linked and the master linking list of ward codes was destroyed once this was complete. Wards were assigned random unlinked codes to permit analysis of ward profile data at ward level. Wards or individuals were not identifiable in any publications or this document.

5.6. The Modelling Process

In this study, the initial model was tested using PLS-PM analysis to determine the extent to which the data support the initial specification. Model modifications was undertaken based on both data and theoretical considerations, in an iterative process in order to obtain a better fit of the model to the data indicated by the strength of the paths and constructs (Tenenhaus, et al., 2005).

In PLS-PM, the outer, or measurement, model may be evaluated for reflective latent variables by consideration of the convergent and discriminant validity of the indicators, and through an examination of the reliability of a block or group of indicators (Chin, 1998; Chin & Gopal, 1995; Gefen & Straub, 2005; Tenenhaus, et al., 2005), together with a review of the average variance explained or AVE (Fornell & Larcker, 1981). In the case of the model under examination, only the indicators of those latent variables obtained from the instruments used in this study were reflective, with the remaining latent variables being formative. Formative indicators are evaluated using their content validity, a comparison of the relativities and direction (sign) of estimated weights, and the statistical significance of those weights (Chin, 1998; Tenenhaus, et al., 2005). However, in this model each formative latent variable had only a single indicator variable, and these procedures could therefore not be carried out. In addition, in the case of single-indicator latent variables, formative and reflective indicators are equivalent, and a formative evaluative approach to these LVs was performed, consistent with other work using PLS models (Keeves, 1986; Sellin, 1995).

The inner, or structural, model in PLS-PM is evaluated through the assessment of percentage variance, or R-square (R^2), of the dependent latent variables, the Q test of predictive relevance (Q^2), and the statistical significance and relative size of the path coefficients (Chin, 1998; Chin & Gopal, 1995; Falk & Tonkin, 2001; Tenenhaus, et al., 2005; Wong, 2006).

Analytical Procedure

Prior to the modelling process, the data were described, distributions examined, and the sample data compared to the population of nurses working in mental health. Ward staffing, skill mix, patient legal status and movement data were aggregated to the ward level and linked to individual nurse data. In accordance with PLS-PM, non-categorical variables were transformed into z-scores for modelling (Tenenhaus, et al., 2005), and other variables were transformed to assist interpretation (see Data Preparation for Modelling, page 118).

The model evaluation process is iterative and comprises several steps:

1. Assessment of the outer model & subsequent removal of indicators
2. Assessment of the revised outer model & further removal of indicators
3. Assessment of the reliability of the outer model
4. Assessment of the inner model & subsequent removal of constructs and paths
5. Assessment of the modified outer model & subsequent removal of indicators

6. Assessment of the reliability of the modified outer model
7. Assessment of the modified inner model & subsequent removal of constructs and paths
8. Assessment of the final inner model

Analysis provided estimates of the statistical significance of the paths between constructs and the strength of those relationships, expressed as the standardised coefficient and proportion of variance accounted for by each path (Chin, 1998; Falk & Tonkin, 2001).

5.7. Summary

The expanded model constructed in Chapter 4 includes factors hypothesised to influence the concepts of therapeutic commitment, role support and role competency. Data were captured using a nurse survey containing two validated instruments and other questions, and a ward profile to collect staffing, skill mix and patient movement data. Data were collected using a convenience sample of 6 wards, with a planned sample size of 80 participants. The model was examined using partial least squares path modelling, an iterative approach that tests the strength and direction of the hypothesised relationships. This analytic technique is appropriate for small samples and is minimally influenced by non-normal distributions or multicollinearity.

6. Findings

As described in earlier chapters, the nurse's capacity to relate therapeutically is believed to be influenced by characteristics of the work environment, through the intermediaries of perceived support and competency in their role. These factors have been assembled into an hypothesised model that was tested using the partial least squares path modelling approach. The analysis commenced with an examination of the features of the nurse and ward data. Partial least squares path modelling was then undertaken using an iterative approach examining first the outer (measurement) model, then the inner (structural) model. The modelling process involved the removal of paths and variables found to be non-significant or of low strength, leading to a final model that provided estimates of the statistical significance and contribution of each of the predictive variables.

This Chapter first describes the characteristics of the sample, them makes a comparison of the nurse sample with population data and describes modifications made to the data prior to the modelling procedure. A detailed description of the modelling process and summary of the findings follows.

6.1. Sample Characteristics

As noted previously (see Sample Selection, page 101), it was initially planned to ask up to 250 nurses on ten wards to take part in this study. However, due to difficulties gaining organisational access to mental health wards, a reduced potential sample of 149 and six wards was chosen. Responses to the nurse survey varied considerably across wards (Table 6), with 76 completed surveys returned, giving a total response rate of 51%. This response is less than desired, although it is of a similar magnitude to the intended sample of 80 nurses. All required data from the wards were collected, thereby providing the full 84 ward-days of staffing, skill mix, patient movement and legal status data.

Data were entered into a Microsoft Access (Microsoft Corporation, 2003) database and extracted to *SPSS* version 15 (SPSS Inc., 2006) for descriptive analysis. Modelling was undertaken using *SmartPLS* version 2 (Ringle, Wende, & Will, 2005).

Table 6 Response Rate per Ward

Ward	Response Rate
YZ	68.8%
WC	58.6%
XA	24.0%
YA	81.3%
BA	23.1%
EQ	57.1%
Average per ward	52.1%

Note: Ward names replaced with random codes. Number of responses per ward not shown due to potential identifiability of wards.

Missing Values

Ward data were complete, with no missing days or categories. Nurse surveys were returned largely complete, with very little missing data. In contrast to previous studies of the same population of nurses (White & Roche, 2006), respondents provided individual demographics without reservation. Seven surveys had missing responses to some questions in the MHPPQ and NWI-PES. The maximum missing data for any survey item was 2.6%, no item was missing on more than two surveys, and no pattern was discernable in missed responses. This suggested that these missing data were random rather than systematic (Burns & Grove, 2005).

A range of approaches to imputation of random missing values are found in the literature, including replacement of the missing value with a random value within the appropriate data range, multiple regression on the missing value and maximum likelihood estimation (Garson, 2008). However, these techniques require large sample sizes so were not applied to these data. An alternative approach, replacement with either the overall or group mean, is common in the social sciences, although these methods are not considered ideal as they reduce variance. The latter calculation is preferable if alternative imputation is not possible (Garson, 2008). Therefore, in this case missing values were replaced with the mean of the individual's responses to items of the same domain in the instrument.

6.2. Descriptive Statistics

The sample period of 14 days for each of the six wards involved in the study gave a total of 84 ward-days of data. Staffing, patient movements, and other details of the ward from the *Unit Profile & Staffing* form, and nurse data from the *Nurse Survey* (Appendix A & Appendix B) were first examined for central tendency, variation and dispersion.

6.2.1. Nurse Characteristics

The mean age of respondents was 36.3 years, with a range of 19 to 65 years. A similarly wide range was found in relation to the number of years worked in nursing and in mental health (Table 7).

Table 7 Nurse Age & Years Worked

	N	Mean (SD)	Median	Min	Max
Age	76	36.3 (10.56)	35.0	19.0	65.0
Years worked in nursing	76	12.5 (11.02)	9.5	0.1	48.0
Years worked in mental health	76	8.2 (7.62)	6.0	0.0	35.0

Most nurses were female, and a higher proportion of males was found compared to the overall proportion of males in nursing across New South Wales, although the latter was similar in regard to nurses in mental health (Australian Institute of Health and Welfare, 2006b, 2008b).

Table 8 Nurse Gender

	Frequency	Percent
Female	52	68.4
Male	24	31.6
Total	76	100.0

As suggested by the aforementioned proportion of staff per day figures, the majority of respondents were in full time employment. No agency staff chose to respond to the survey, and relatively few casual staff (Table 9). Nearly 90% of respondents were registered nurses or clinical nurse specialists, and only 1 trainee enrolled nurse responded (Table 10).

Table 9 Nurse Employment Status

	Frequency	Percent
Full time	55	72.4
Part time	16	21.1
Casual	5	6.6
Total	76	100.0

Table 10 Nurse Current Position

	Frequency	Percent
TEN	1	1.3
EN	7	9.2
RN	55	72.4
CNS	13	17.1
Total	76	100.0

Half of nurse respondents indicated that their highest nursing qualification was a Bachelor degree, with the next largest group having a hospital-based training certificate (Table 11). Approximately 9% had post-graduate qualifications in nursing.

Table 11 Highest Nursing Qualification

	Frequency	Percent
AIN certificate	1	1.3
EN certificate	7	9.2
RN hospital certificate	8	10.5
Post basic certificate	7	9.2
RN diploma	7	9.2
RN degree	39	51.3
Graduate certificate	2	2.6
Graduate diploma	2	2.6
Master of nursing	3	3.9
Total	76	100.0

Approximately one third of nurses had no qualifications in mental health (Table 12), with a similar proportion indicating they had completed a post-graduate qualification, primarily a graduate certificate or diploma. The remaining nurses had other qualifications, primarily a hospital-based mental health certificate.

Table 12 Highest Mental Health Qualification

	Frequency	Percent
No qualification	26	34.2
EN mental health certificate	3	3.9
RN hospital certificate	14	18.4
Post basic nursing certificate	6	7.9
Graduate certificate	12	15.8
Graduate diploma	12	15.8
Masters degree	3	3.9
Total	76	100.0

One third of respondents indicated that they were currently receiving clinical supervision (Table 13).

Table 13 Nurse Currently in Receipt of Clinical Supervision

	Frequency	Percent
No	51	67.1
Yes	25	32.9
Total	76	100.0

6.2.2. Instrument Domains

Together with questions regarding individual nurse characteristics, the nurse survey included the MHPPQ and the NWI-PES. These instruments contributed 8 constructs to the model.

The domains (sub-scales) of the MHPPQ and NWI-PES were calculated using the description of the scales available in the literature (Lake, 2002; Lauder, et al., 2000). Additional information was provided regarding the MHPPQ by Dr W. Lauder (personal communication, 2005) and for the NWI-PES from Dr S. Clarke (personal communication, 2007).

Table 14 Practice Environment Scale of the Revised Nursing Work Index (NWI-PES)

	N	Mean (SD)	Median	Min	Max*
Collegial nurse-doctor relations	76	3.1 (0.62)	3.0	1.0	4.0
Nurse manager ability, leadership, & support of nurses	76	2.7 (0.75)	2.8	1.0	4.0
Staffing & resource adequacy	76	2.6 (0.62)	2.8	1.0	4.0
Nurse participation in hospital affairs	76	2.5 (0.49)	2.5	1.1	3.6
Nursing foundations for quality of care	76	2.6 (0.39)	2.6	1.7	3.4

*Possible range for all scales 1-4

The calculated means and medians for the subscales were above 2.5 (Table 14) and therefore in the positive range as described by Lake and Friese (2006). This indicated general agreement that these characteristics were present in the environment, although *Nurse Participation in Hospital Affairs* was borderline.

The scores were more widely dispersed than in other research using this instrument, possibly an artefact of the small sample (Burns & Grove, 2005). Most domains were distributed normally or displayed a mild negative skew, except for *Collegial Nurse-Doctor Relations* which was moderately skewed (Figure 6).

Figure 6 NWI-PES Domains – Histograms

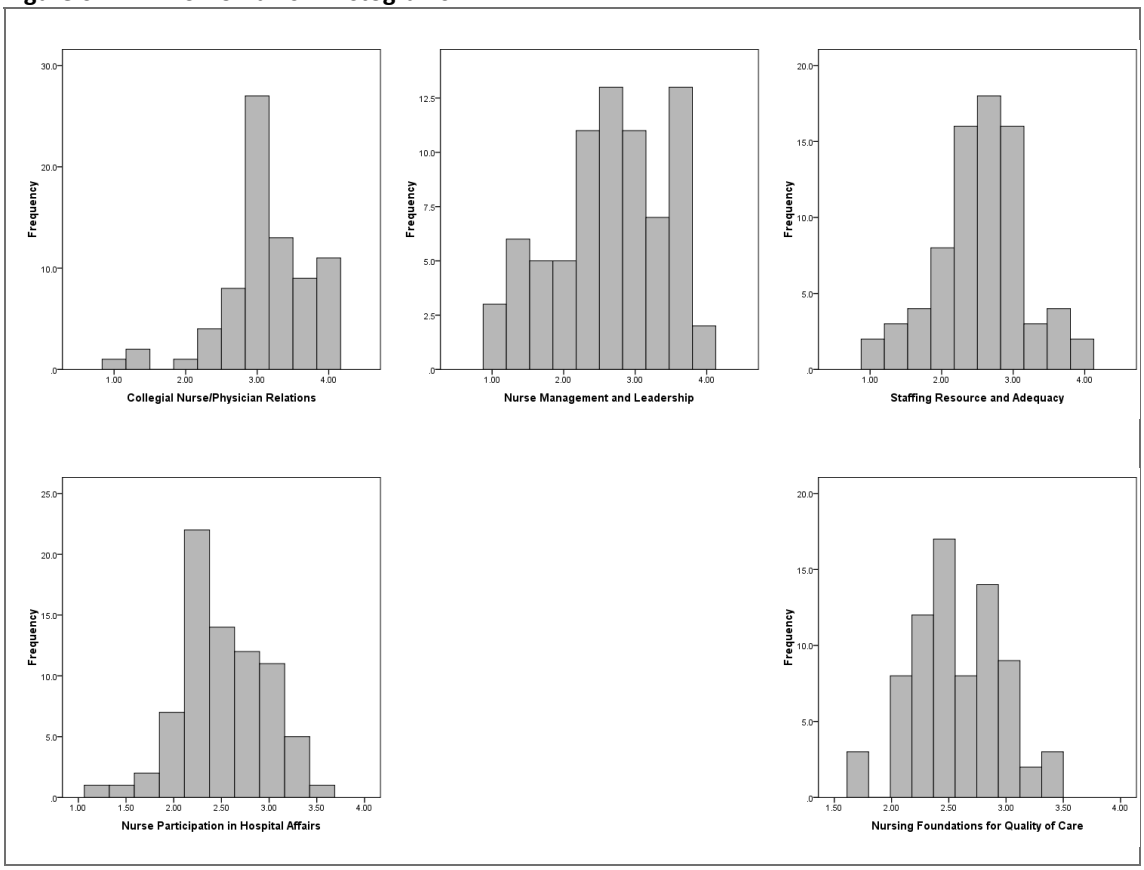


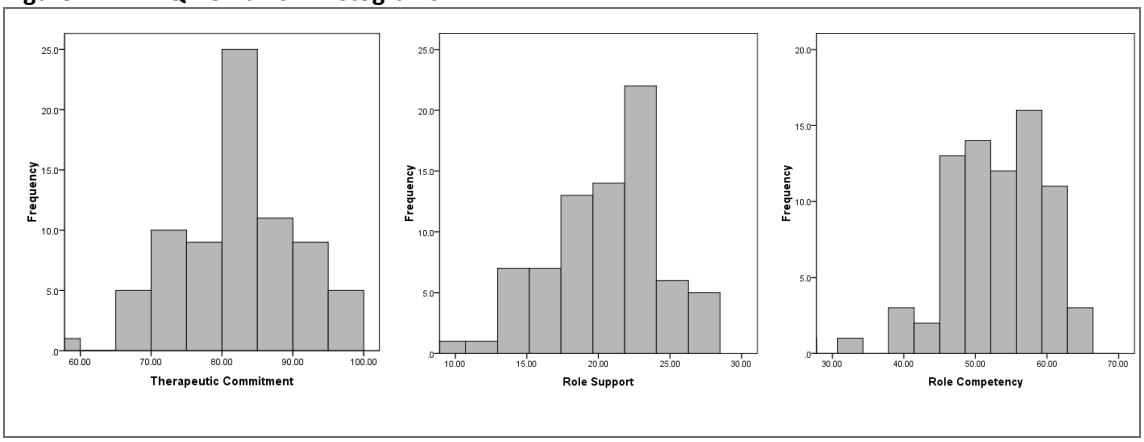
Table 15 Mental Health Problems Perception Questionnaire (MHPPQ)

	N	Mean (SD)	Median	Min	Max*
Therapeutic commitment	76	81.5 (9.07)	83.0	50.0	98.0
Role support	76	20.6 (3.97)	20.0	9.0	28.0
Role competency	76	52.5 (7.42)	53.0	25.0	63.0

* Possible range for Therapeutic Commitment 14-98; Role Support 4-28; Role Competency 9-63

The distribution of the calculated sub-scales was examined (Figure 7), as a highly skewed distribution of the dependent variable has been identified as a potential issue in PLS-PM (Qureshi & Compeau, 2009).

Figure 7 MHPPQ Domains – Histograms



The data displayed a slight negative skew for each domain, but none were highly distorted. Hsu, Chen, and Hsieh (2006) noted the minimal influence of moderately non-normal data on the findings of PLS-PM, so these data were considered appropriate for the planned analysis.

Elements of the nurse survey used in modelling included the sub-scales of the MHPPQ and the NWI-PES, together with the nurse's qualifications in mental health and their experience in the field. A number of characteristics of the ward were also collected.

6.2.3. Ward Characteristics

Wards ranged in size from 9 to 30 beds. Other characteristics captured on the *Unit Profile & Staffing* form included staffing and skill mix, patient admission, discharge and legal status and average length of stay.

The proportion of staff by category per day was calculated from ward profile data. Registered Nurses (RN) made up the majority of the workforce on most ward-days (Table 16), although with a minimum of 35% on one day. Enrolled Nurses (EN) made up less than a quarter of staff, with a mean of 10%. Only 2 wards used proportions of unregulated staff such as Assistants in Nursing (AIN) or Patient Care Assistants (PCA) over 10% per day. Those wards showed considerable variation in rostering of these staff each day up to a maximum of 56%.

Table 16 Ward Staffing – Proportion of Staff per Day – Skill mix

	N	Mean (SD)	Median	Min	Max
% RN	84	75.3 (18.08)	80.4	35.3	100.0
% EN	84	9.9 (6.76)	9.1	0.0	25.0
% Other (AIN/PCA)	84	14.7 (18.79)	5.9	0.0	56.3

As well as this variation, the proportion of RNs per day was distributed non-normally with a negative skew. The variable was retained in the analysis as PLS-PM is not as susceptible to the effects of non-normal data compared to other modelling approaches (Chin, 1998; Hsu, et al., 2006).

There was considerable variation in the proportion of both full time and part time staff. On average, more than half of staff per ward-day were employed full time, with a wide range of 26.7% to 81.8%. Casually employed staff made up an average of 11.4% of the workforce, and agency staff an average of 1.3%. However, on one ward-day a third of staff were casual, and another day showed 20% agency staffing.

Using staffing and patient numbers collected with the ward profile, the average number of staff per shift was calculated through division of total staffing numbers by 3. This figure is therefore not precise, and provides only an indication of average staffing per shift rather than a exact hours-worked figure calculated from detailed roster data. The number of patients on the ward for that day was then divided by the average staff members per shift to give the average number of patients per staff member per shift (Table 17). This variable is also imprecise, and serves only as an estimate of staffing (see Staffing, page 99). The average number of patients per staff per shift was 4.2, with a minimum of 0.8 up to 9.3.

Table 17 Ward Staffing – Staff Numbers & Patients per Staff Member per Shift

	N	Mean (SD)	Median	Min	Max
Average staff members per shift*	84	5.4 (1.39)	5.3	2.7	8.7
Patients per staff member per shift§	84	4.2 (1.71)	4.4	0.8	9.3

* Staffing numbers per day /3
§ Maximum patient numbers per day /Average number of staff per shift

There was considerable variation in these data. In addition, although the distribution was not highly skewed it was not normal, in parts displaying a fairly uniform distribution (Figure 8).

Patient turnover was calculated from the movement of patients on and off the ward per day (Table 18). Overall movements ranged from zero up to a maximum of 16 per day, with a mean of less than 4. The data were positively skewed with few movements per day.

Table 18 Ward Characteristics – Patient Movements

	N	Mean (SD)	Median	Min	Max
Patients into ward (admission/transfer)	84	1.8 (1.66)	1.0	0.0	7.0
Patients leaving ward (discharge/transfer)	84	2.0 (1.90)	1.0	0.0	9.0
Patient movements*	84	3.8 (3.36)	3.0	0.0	16.0

* Patients into ward + Patients leaving ward

The average length of stay (ALOS) for each ward was captured from routinely reported ward data over the three to 12 months prior to the sample. The mean ALOS was 7.3 days, ranging from 4.3 to 11.1.

On most ward-days, the minority of patients were voluntary (Mean=44.6%, SD=28.76), although with substantial variation and approximately 18 days with few or no voluntary patients on a ward (Figure 9). This distribution was explained by the different patient mix on one ward that reported no voluntary patients during the study period. The five other wards reported a range of 11.7% to 68.4% voluntary patients per ward-day.

Figure 8 Ward Staffing: Patients per Staff Member per Shift – Histogram

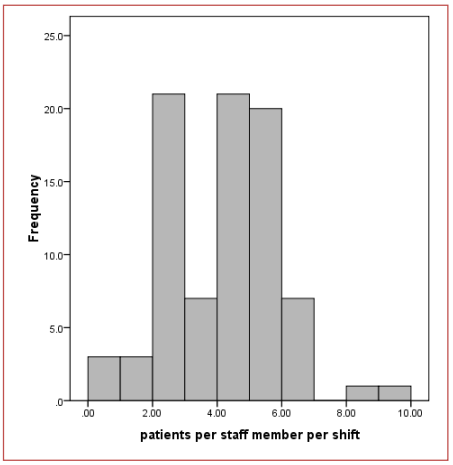
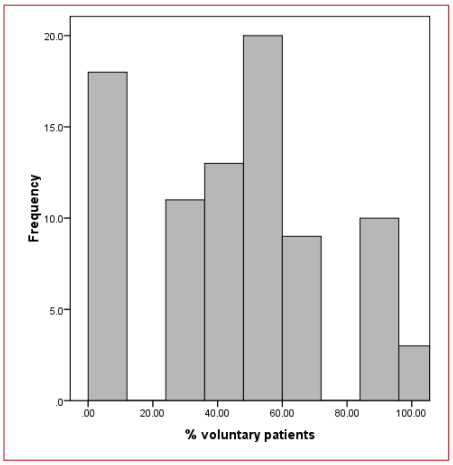


Figure 9 Patient Characteristics: % Voluntary Patients per Ward-Day – Histogram

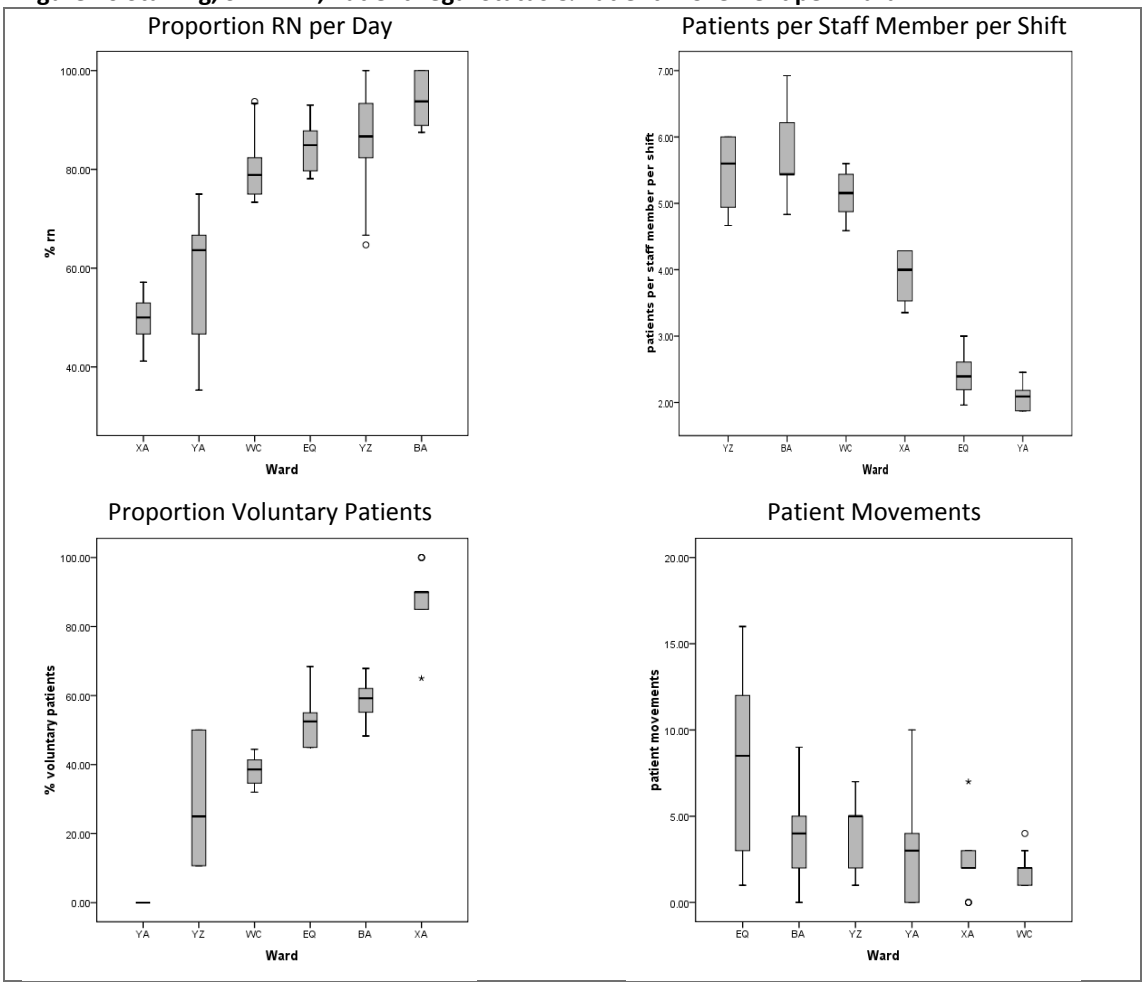


Two data items collected via the unit profile showed no variation across the sample. Responses to these items, *Clinical Leader* and *Secure/Observation Unit*, indicated that all wards

maintained a clinical leadership role, and that they considered themselves either a secure or observation unit. These variables were not included in analyses.

Staffing, skill mix, patient legal status and movement data were aggregated to the ward level for linking to nurse data and subsequent modelling. As noted previously, the number of wards in this study did not permit a meaningful statistical comparison by ward. An examination of aggregated data (Figure 10) showed that the wards tended to staff with similar skill mix and staffing ratios during the sample period. Similarly, patient characteristics clustered by ward. Therefore, some questionnaire responses by nurses may have been impacted by these factors, fixed for all staff on that ward.

Figure 10 Staffing, Skill Mix, Patient Legal Status & Patient Movement per Ward



6.3. Comparison of Sample & Population

The nursing demographic data collected by this study were compared to 2004 workforce data from the Australian Institute of Health and Welfare (Australian Institute of Health and

Welfare, 2006b, 2007). Although more recent data are available (for 2005), a poor response rate to some questions in that survey did not permit reporting at the level of 'Clinical Nurses Working in Adult Mental Health' (Australian Institute of Health and Welfare, 2008b). As the sample data were collected from clinical nurses, working in adult mental health, in New South Wales it was appropriate to compare to the closest matching population data.

The skill mix of the nurse sample was similar to that described in the Australian Institute of Health and Welfare (2006b) analysis, although with a slightly higher proportion of registered nurses (Table 19). Similarly, there was a higher proportion of nurses with specialist mental health qualifications compared to data reported by the Australian Institute of Health and Welfare (Australian Institute of Health and Welfare, 2008b).

Table 19 Clinical Nurses Working in Adult Mental Health – Skill mix

	AIWH (2006)	This Study
RN	87.8%	89.5%
EN	12.2%	10.5%*

* Includes one Trainee Enrolled Nurse

The proportion of males in the sample overall was similar to the population data (31.6% and 33.0% respectively), although a considerable difference was noted between the proportion of male ENs in the sample (37.5%) and in the AIHW data (23.4%). In regard to part-time staff, the sample had a lower proportion of RNs and overall, but a similar figure was found for part-time ENs (Table 20). This difference may be an artefact of the data collection method, where wards were not visited daily, thereby making it less likely that part-time nurses were as well informed about the study as full-time staff.

Table 20 Clinical Nurses Working in Adult Mental Health – Gender & Employment Status

	AIWH (2006)		This Study	
	% male	% part-time	% male	% part-time*
RN	34.3%	28.1%	30.9%	19.1%
EN	23.4%	35.1%	37.5%	37.5%
Overall	33.0%	29.0%	31.6%	21.1%

* Excludes casual staff

Two measures of the age of nurses are available in AIHW data: the average age of respondents, and the proportion of nurses over 55 years. The sample was found to be significantly different to the population on both of these measures (Table 21). The average age of the sample overall was 36.3 years, compared to 44.4 in the AIWH data. Similarly, only 3.9% of respondents were aged over 55 in the sample, while the AIHW analysis found 16.3% were in

that age group. Similar differences were found when data were compared for RN and EN categories.

Table 21 Clinical Nurses Working in Adult Mental Health – Age

	AIWH (2006)		This Study	
	Average age	% aged 55+	Average age	% aged 55+
RN	45.0	17.3%	36.9	4.4%
EN	40.4	8.7%	31.6	0.0%
Overall	44.4	16.3%	36.3	3.9%

The figure of 30% of nurses in receipt of clinical supervision (Table 13, page 111), is consistent with previous research in New South Wales, where nearly two-thirds of respondents indicated that they were not engaged in clinical supervision (White & Roche, 2006).

It was not possible to evaluate the ward sample in a similar way as population data were not available. However, variations in skill mix (Table 16, page 114) were consistent with previous general nursing research in Australia (Duffield, et al., 2009c; Duffield, et al., 2007). There were fewer movements per day reported than in general nursing research (Duffield, et al., 2009a; Duffield, et al., 2007).

In summary, nurse data were similar in several characteristics to population data, although this was a younger group with a slightly higher proportion of nurses with qualifications in mental health. Scores for the domains of the two instruments in use were generally above those reported for other studies, and most showed a mild negative skew. Ward characteristics such as skill mix, staffing, patient legal status and movement were more widely dispersed and non-normal. These data were also clustered by ward, although patient movements less so. Several transformations were made to the data prior to modelling.

6.4. Data Preparation for Modelling

In addition to those variables collected to describe the sample, several items were not included in the model testing procedure. These included experience and qualifications in nursing from the nurse survey and average length of stay from the ward profile.

Experience in nursing and in mental health were highly correlated ($r=0.79$, $p \leq 0.01$), and the number of years in mental health was considered more indicative of relevant experience for

inclusion in this model. In order to reduce multicollinearity, only this variable was included in the model. Nurse's qualifications in mental health was not highly correlated with qualifications in nursing (*rho*=0.250, p≤0.05), with many nurses indicating a bachelor's degree was their highest nursing qualification (51.3%, see also Table 11). Similar to consideration of experience, the level of qualification in mental health was regarded more appropriate for this model.

The average length of stay was not available for all wards for a similar period, with some wards reporting annual figures and others quarterly. It was decided to use the patient movement figure calculated from ward record data for the sample period, as this provided a consistent unit of measurement across all wards. An average figure per ward was calculated as described in Table 18, above.

As noted previously (see Analytical Procedure, page 104), consistent with usual practice when applying PLS-PM (Tenenhaus, et al., 2005), non-categorical variables were transformed into z-scores for modelling. In addition, in order to enhance the interpretability of model testing, it was necessary to transform some items so that the direction of indicators was consistent. For example, it was a contention of this study that reduced levels of patient movement on and off the ward would provide opportunity for nurses to engage therapeutically with patients. That is, a lower number of patient movements were considered more likely to relate to improved therapeutic commitment. In contrast, most other indicators that were believed to improve therapeutic commitment were measured in the opposite direction. Two variables were therefore inverted so that their scales were in the hypothesised positive direction (Table 22).

Table 22 Transformed Items for Path Modelling

Original Variable	→	New Variable	N	Mean (SD)	Median	Min	Max
Patients per staff member per shift	*Inverted*	Ward Staffing	84	-4.2 (1.71)	4.4	-9.3	-0.8
Patient movements	*Inverted*	Ward Patient turnover	84	-3.8 (3.36)	3.0	-16.0	0.0

Following transformation, the aggregated ward data were linked to nurse data to provide a single dataset for modelling.

6.5. Model Testing

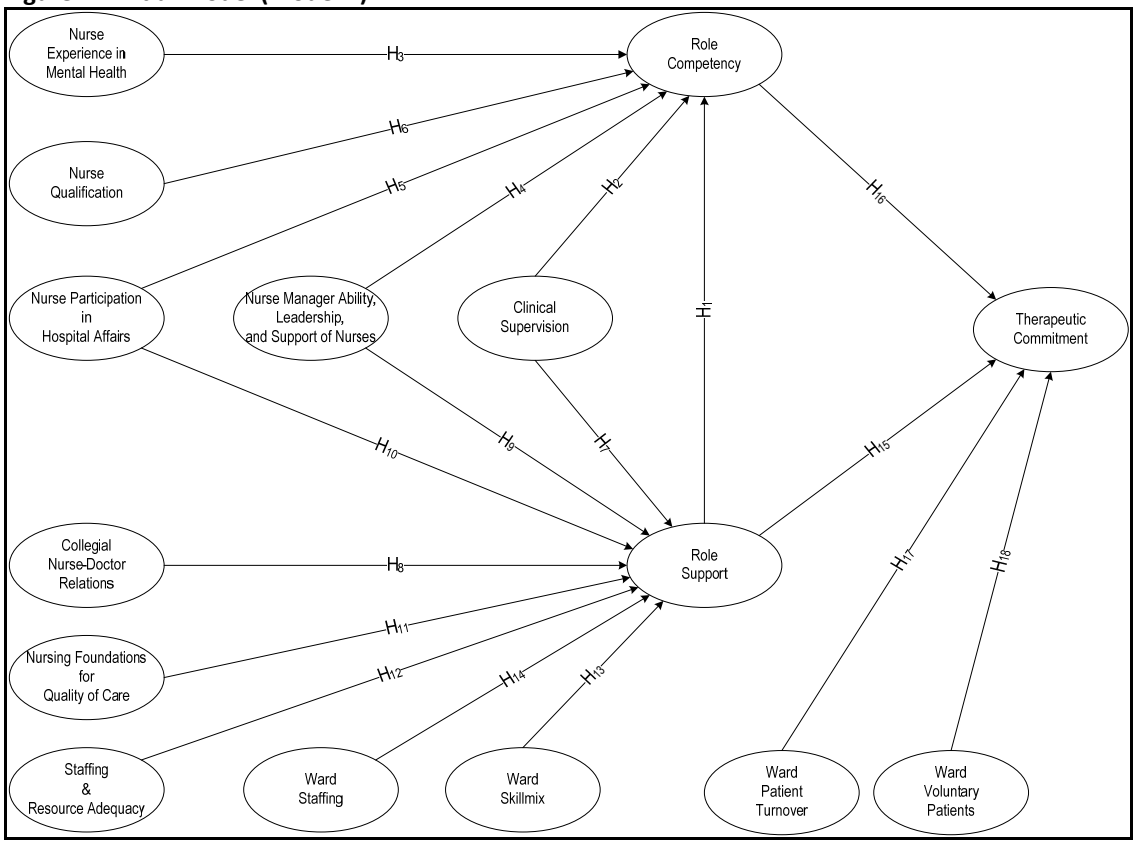
Partial least square path modelling is an iterative process that commences with an exploration of the reliability and validity of each variable in this model (Chin & Marcolin, 1995; Gefen & Straub, 2005). The large tables referenced during the testing process have been placed in Appendix E for readability. These aspects are reviewed with a view to model modification, followed by additional evaluations of the revised model. The initial and each revised model in this process has been named accordingly:

- Model 1 – Initial Model
- Model 1a – Revision of outer (measurement) component of initial model
- Model 2 – Modified Model
- Model 2a – Revision of outer (measurement) component of modified model
- Model 3 – Final Model

6.5.1. Assessment of Initial Outer Model

The initial model, displayed in Figure 11, was derived from a number of sources in the literature. The measurement, or outer, model was first assessed for convergent and discriminant validity, followed by modification and re-testing.

Figure 11 Initial Model (Model 1)



Convergent Validity

Convergent validity is the degree to which the reflective indicator can be shown to measure what it is purported to measure. This is evaluated using the correlation between the latent variable scores and the indicator variable scores, usually termed *factor loadings* (Chin & Marcolin, 1995; Tenenhaus, et al., 2005). Loadings of greater than 0.7 are usually considered to indicate a strong relationship between the indicator and latent variable (Chin & Marcolin, 1995; Tenenhaus, et al., 2005), and loadings greater than 0.8 may support the use of very small samples (Cassel, et al., 1999; Chin, et al., 2003). Burns and Grove (2005) cite the use of loadings as low as 0.3. However, in relation to PLS-PM, Chin (1998) suggests that loadings of 0.5 to 0.6 are sufficient, particularly if there are other indicator variables with stronger correlations.

In examining the factor loadings for items in the NWI-PES, the latent variables of *Collegial Nurse-Doctor Relations*, *Nurse Manager Ability, Leadership, and Support of Nurses*, and *Staffing and Resource Adequacy* all showed correlations above 0.7 for all indicator variables. The latent variables of *Nurse Participation in Hospital Affairs* and *Nursing Foundations for Quality of Care* were not as well supported, with most correlations below 0.7, and many less

than 0.5 (Table 37, page 189). Of the nine items in the domain Nursing *Foundations for Quality of Care*, five showed loadings of less than 0.5. These items were: *active staff development or continuing education programs for nurses; working with nurses who are clinically competent; an active quality assurance program; nursing care is based on a nursing, rather than a medical, model;* and *written, up-to-date nursing care plans for all patients.* The latent variable *Nurse Participation in Hospital Affairs* had low correlations with the items: *opportunity for staff nurses to participate in policy decisions; a chief nursing officer who is highly visible and accessible to staff;* and *administration that listens and responds to employee concerns*. In both cases these low loadings may be due to a number of factors. They may be an artefact of the small sample size (Marcoulides & Saunders, 2006) or a response peculiar to this sample. Further testing of the instrument with a larger and more diverse sample of nurses working in this area may clarify this.

For the MHPPQ, all the indicators for the latent variable *Role Support*, and most of the indicators for the constructs *Therapeutic Commitment* and *Role Competency*, were within the acceptable range (Table 38, page 190). However, one of the nine indicators for *Role Competency* had a factor loading below 0.5: *I feel that I have the right to ask a patient for any information that is relevant to their mental health problem.* The construct *Therapeutic Commitment* has 14 items, of which three were below the defined value: *I feel that I am able to work with patients with mental health problems as effectively as other patients who do not have mental health problems; I feel that there is nothing I can do to help patients with mental health problems;* and *I often feel uncomfortable when working with people with mental health problems.* As this instrument is in fairly early development, this may be a true indication of the loadings, but with the relatively high number of items for *Therapeutic Commitment*, it is more likely related to the small sample size (Marcoulides & Saunders, 2006). Similar to the NWI-PES, this instrument would benefit from further testing with a larger sample of nurses working in mental health.

Convergent validity of the constructs was also examined via the AVE. This figure should be greater than 0.5, indicating that the latent variable captures more than 50% of the variance, in relation to the amount of variance explained by measurement error (Fornell & Bookstein, 1982; Fornell & Larcker, 1981; Lings & Owen, 2007). As indicated in Table 23 (page 124), the constructs *Nursing Foundations for Quality of Care*, *Nurse Participation in Hospital Affairs* and *Therapeutic Commitment* did not meet this criteria.

Discriminant Validity

Discriminant validity examines whether measures of a latent variable are highly correlated with other latent variables, and therefore whether the measurement discriminates successfully between the theoretical constructs. This may be tested by examination of the cross-loadings of latent variables on indicator variables, as displayed in Table 39 and Table 40 (page 191) (Lohmoeller, 1988; Tenenhaus, et al., 2005). In most cases the latent variables correlate more highly with their own indicators than with any other indicators, and more highly with the relevant latent variable than with any other construct. The exceptions are for items *znfq1*, *znfq5*, *znha2*, *znha3*, *znha6*, *zrc7*, and *ztc10*, each of which correlated more highly with latent variables other than their designated construct. In the case of items *zrc7* (*I feel that I have the right to ask a patient for any information that is relevant to their mental health problem*) and *ztc10* (*I often feel uncomfortable when working with people with mental health problems*), both part of the MHPPQ, the discrepancy between the correlation with the designated construct and the most highly correlated one was small (0.398/0.403 for *zrc7*, and 0.327/0.349 for *ztc10*). However, the differences for the other items, all part of the NWI-PES, was much larger. Discriminant validity could not therefore be demonstrated through the examination of cross-loadings, suggesting it was necessarily to remove some indicators and re-examine the model (Tenenhaus, et al., 2005).

An additional method for evaluation of discriminant validity is the comparison of the inter-latent variable correlations with the square root of the average variance extracted (√AVE). Adequate discriminant validity is demonstrated if √AVE is greater than the correlation between the construct and any other latent variable in the model (Chin & Gopal, 1995; Chin, et al., 1996, 2003). As shown in Table 23, in most cases √AVE was larger than any of the correlations between the latent variables. There were 2 exceptions to this rule. First, the correlation between *Nursing Foundations for Quality of Care* and *Nurse Participation in Hospital Affairs* (0.663), which was considerably higher than √AVE for *Nursing Foundations for Quality of Care* (0.490). This corresponds to the cross-loadings examined previously, where several items for each construct loaded more heavily on the other. Also, the correlation between *Role Competency* and *Therapeutic Commitment* (0.736) was higher √AVE for *Therapeutic Commitment* (0.637). This was not as obvious in the cross-loadings, although it can be seen in Table 39 that many items with the highest correlations under *Therapeutic Commitment* had their second highest under the construct *Role Competency*. It is also consistent with the findings of Angus et al. (2001b), where these two constructs were highly

correlated. Reliability was further examined after modification of the measurement model (see, Reliability, page 126).

Table 23 Discriminant Validity: Comparison of Square Root AVE & Latent Variable Correlations (Model 1)

	AVE	Collegial Nurse-Doctor Relations	Nurse Manager Ability, Leadership, and Support of Nurses	Nurse Participation in Hospital Affairs	Nursing Foundations for Quality of Care	Staffing & Resource Adequacy	Role Competency	Role Support	Therapeutic Commitment
Collegial Nurse-Doctor Relations	0.766	*0.875*							
Nurse Manager Ability, Leadership, and Support of Nurses	0.621	0.381	*0.788*						
Nurse Participation in Hospital Affairs	0.306	0.379	0.461	*0.553*					
Nursing Foundations for Quality of Care	0.240	0.161	0.432	**0.663**	*0.490*				
Staffing & Resource Adequacy	0.624	0.184	0.302	0.349	0.621	*0.790*			
Role Competency	0.585	-0.106	-0.191	0.268	0.178	0.033	*0.765*		
Role Support	0.653	0.107	0.183	0.463	0.568	0.356	0.379	*0.808*	
Therapeutic Commitment	0.405	0.025	-0.144	0.199	0.152	-0.036	**0.736**	0.436	*0.637*

Correlations between latent variables > √AVE are bold
AVE < 0.5 are underlined
Following PLS-PM convention √AVE is presented in the diagonal and italicised

Following the procedure outlined by Tenenhaus et al. (2005), the combined results of the examination of convergent and discriminant validity suggested that the items with low loadings (below 0.5) should be removed from the model before proceeding with reliability analysis of the outer model. Therefore, for all reflective latent variables, indicators showing loadings of less than 0.5 were removed from the model. The original 55 indicators were

thereby reduced to 43, and the amended model (Model 1a) was re-evaluated for discriminant and convergent validity.

6.5.2. Revised Initial Outer Model

Convergent Validity

Factor loadings on the revised indicators for the NWI-PES are displayed in Table 41 (page 193), and those for the MHPPQ in Table 42 (page 194). Although the correlations of the revised indicators remain low in some instances, most approach or exceed 0.7. These values were considered acceptable, according to the criteria described earlier (Chin, 1998).

An additional analysis of convergent validity was undertaken with the revised outer model. This was the examination of the t-statistic of the indicators for statistical significance, calculated using the *Bootstrapping* procedure in *Smart PLS* (Ringle, et al., 2005). The level of significance *p* may be calculated from these statistics. The standard critical value of $p \leq 0.05$ was set (Gefen & Straub, 2005). As displayed in Table 41 and Table 42, all items were statistically significant at 0.05 or better.

Discriminant Validity

Examination of the revised cross-loadings between reflective latent variables and indicators showed that in all cases the items correlated more highly with their designated construct than with other constructs, and that each latent variable correlated more highly with the relevant indicators than other indicators (Table 43 & Table 44, page 196).

In addition to the examination of cross-loadings, a comparison of the correlations between the latent variables and the square root of the AVE was undertaken (Table 45, page 197). In most cases $\sqrt{AVE}$ was greater than the correlation coefficient. However, the construct *Therapeutic Commitment* did not meet the established figure of 0.5 (Fornell & Larcker, 1981), and the correlation between that latent variable and *Role Competency* was higher than $\sqrt{AVE}$, suggesting less than ideal discrimination between these two concepts (Tenenhaus, et al., 2005). As *Therapeutic Commitment* was the dependent variable of most interest in this model, it was retained.

As a result of this process of revision the data now better fit the model, but for this sample only. Analyses of reliability, formative latent variables, and the inner model, proceeded using the indicators as revised in the process above.

6.5.3. Reliability

In partial least squares path modelling the internal consistency of reflective latent variables is measured using two calculations: Cronbach's alpha (α), the commonly used measure of homogeneity for instruments, and the internal consistency measure developed by Werts, Linn and Joreskog (1974), described as *composite reliability* (Chin & Marcolin, 1995; Tenenhaus, et al., 2005). Chin (Chin, 1998; Chin & Gopal, 1995) suggests that the latter measure is a better estimate, and propose that Cronbach's α should be viewed as estimating the lower bound of reliability. Similar to the approach undertaken by Wong (2006), both measures were examined here.

As indicated in Table 24, the composite reliability for each of the latent variables measured with multiple reflective indicators is high. This internal consistency measure ranges from a low of 0.736 for *Nursing Foundations for Quality of Care*, to a high of 0.932 for *Role Competency*. Cronbach's α is also in the desired range for all latent variables except *Nursing Foundations for Quality of Care*. As Chin (1998) states, composite reliability generally tends to show a higher figure than Cronbach's α. Also, this construct has the lowest overall factor loadings with 3 of the 4 indicators below the 0.7 level (Table 41, page 193). Although the low Cronbach's α and factor loadings suggest this construct has lower reliability overall, it was retained for this stage of model analysis due to the acceptable level of composite reliability (Chin & Gopal, 1995).

The latent variable *Therapeutic Commitment* showed both high composite reliability (0.913) and Cronbach's α (0.895). This contrasts with the low AVE (0.489), as described earlier, and the high correlation between this construct and *Role Competency* (0.624). It is often recommended that latent variables with low AVE should be removed from the model (Chin, 1998; Marcoulides & Saunders, 2006; Wong, 2006). However, it is also acceptable to retain important variables in order to examine their properties in the context of the model (Falk & Tonkin, 2001; Gopal, Bostrom, & Chin, 1992; Tenenhaus, et al., 2005). In this case, *Therapeutic Commitment* was retained as it was the final dependent variable for the model and because of the high composite reliability and Cronbach's α scores.

Table 24 Reliability of Latent Variables with Reflective Indicators (Model 1a)

Latent Variable	Composite Reliability (p_c)	Cronbach's Alpha (α)
Collegial Nurse-Doctor Relations	0.907	0.848
Nurse Manager Ability, Leadership, and Support of Nurses	0.868	0.801
Nurse Participation in Hospital Affairs	0.805	0.702
Nursing Foundations for Quality of Care	0.736	0.526
Staffing & Resource Adequacy	0.869	0.797
Role Competency	0.932	0.914
Role Support	0.880	0.813
Therapeutic Commitment	0.913	0.895

With the revision of the reflective latent variable indicators as described above, the reliability and validity of this component of the outer model has been established. The remaining latent variables were all formative in nature. The procedure used to assess the reliability and validity of these constructs usually entails the examination of content validity and the statistical significance, relative size and direction (or sign) of weights (Chin, 1998; Tenenhaus, et al., 2005; Wong, 2006). In the model under study however, all the formative latent variables had only a single indicator, thereby making the examination of content validity redundant. Also, with only one indicator per construct a comparison of weights for relative size or direction could not be undertaken. Weights and loadings were identical at 1 for all indicators, and statistical significance could not be calculated. The formative latent variables were all therefore retained unmodified.

6.5.4. Assessment of Initial Inner Model

The initial inner model was examined using 3 methods: the test of predictive relevance (Q^2); the percentage variance explained (R^2) of the dependent latent variables; and the significance and relative size of the path coefficients (Chin, 1998; Chin & Gopal, 1995; Eom, Wen, & Ashill, 2006; Falk & Tonkin, 2001; Gefen & Straub, 2005; Tenenhaus, et al., 2005; Wong, 2006).

Stone-Geisser Q^2 Test

The predictive power of the initial model was evaluated using the Q^2 or Stone-Geisser test (Sellin, 1995; Tenenhaus, et al., 2005). This is a measure of the degree to which the observed values are reproduced by the model, through the division of the data into *G* groups, and the omission of single groups from the analysis. The omitted group is estimated using the parameter estimates in the model, and the procedure repeated until all permutations are

examined. This procedure is referred to as blindfolding, and the number of groups as the omission distance (Ringle, et al., 2005; Tenenhaus, et al., 2005). The Q^2 value may only be calculated for reflective latent variables and may be positive or negative. The higher the value the greater the predictive relevance of the model. If the value is less than zero, it would indicate that random prediction is greater than model prediction and the model would therefore lack any predictive relevance (Chin & Gopal, 1995). Also, in contrast to other estimated values such as R^2, the Q^2 value may increase when unstable predictor variables are removed (Sellin, 1995).

There are two types of Q^2 value: a cross-validated communality and a cross-validated redundancy (Chin, et al., 2003). The former predicts the values of the omitted indicator variables via the estimate of the latent variable. It therefore provides an estimate of the overall quality of the measurement or outer model for each reflective latent variable. Cross-validated redundancy is the indirect prediction of the omitted data points of indicators of the dependent latent variables, by the constructs that are predictors of that latent variable. It is a measure of the predictive relevance of the model in regard to the dependent latent variables (Eom, et al., 2006; Sellin, 1995; Tenenhaus, et al., 2005).

Table 25 displays the results of the blindfolding procedure, using a single omission distance for this analysis of 10. All constructs obtained Q^2 values of greater than zero for cross-validated communality, supporting the previous analysis of the outer model. Similarly, the cross-validated redundancy values were all positive. Overall, the initial model had good predictive relevance. A modified model was re-examined using this method after modification based on analysis of path coefficients.

Table 25 Cross-Validated Communality & Redundancy (Model 1a)

	CV-Communality Q^2	CV-Redundancy Q^2
Collegial Nurse-Doctor Relations	0.460	
Nurse Manager Ability, Leadership, and Support of Nurses	0.368	
Nurse Participation in Hospital Affairs	0.181	
Nursing Foundations for Quality of Care	0.040	
Role Competency	0.523	0.179
Role Support	0.432	0.200
Staffing & Resource Adequacy	0.373	
Therapeutic Commitment	0.363	0.239

Omission distance = 10.

R^2 for Dependent Latent Variables

An estimate of the effect of all predictor constructs on the dependent latent variable is provided by the R^2 value. This is the total amount of variance in the dependent construct that is accounted for by the predictors (Falk & Tonkin, 2001). More than 35% of the variance of the latent variable *Role Competency* was predicted, over 40% of *Role Support*, and 56% of the final dependent latent variable *Therapeutic Commitment*. These figures indicate that all of the 3 dependent variables had R^2 figures of sufficient magnitude to consider that a large proportion of the variance is being predicted by the exogenous latent variables (Table 26). However, it must also be noted that most of the variance in the first two variables is explained by unknown factors.

Table 26 R^2 for Dependent Latent Variables (Model 1a)

Latent Variable	R^2
Role Competency	0.354
Role Support	0.417
Therapeutic Commitment	0.560

Structural Path Coefficients

Path coefficients indicate the percent of variance contributed by each predictor to the R^2 of the latent construct (Chin, 1998; Falk & Tonkin, 2001; Sellin, 1995). In PLS-PM, path coefficients are often termed beta (β) values, as they are equivalent to standardised coefficients calculated in multiple regression analysis (Andreou & Bontis, 2007; Falk & Tonkin, 2001; Tenenhaus, et al., 2005). These path coefficients are thereby directly comparable, with the sign of the coefficient indicating the direction of the relationship: positive or negative. In addition, the t-statistic may be calculated using the *bootstrapping* procedure in *SmartPLS* and

statistical significance thus examined (Ringle, et al., 2005). Initially, the size and statistical significance of the path coefficients were inspected.

There are a number of views of the minimum acceptable value of a path coefficient. Lohmoeller (1988) has suggested a value of 0.10, although Chin (1998) has pointed out that values this low represent a low contribution to the latent variable, and has suggested that path coefficients should be at least 0.20. As shown in Table 27, many paths in the specified model are both non-significant and below this value. With one exception, the statistically significant paths are also those that meet the criteria for adequate size. The exception is the path from *Role Support* to *Therapeutic Commitment*, where β is only 0.175. All statistically significant and meaningful path coefficients are positive, indicating the direction of the effect on the dependent variable.

Table 27 Path Coefficients & Statistical Significance (Model 1a)

	Role Competency	Role Support	Therapeutic Commitment
Clinical Supervision	0.127	0.206*	
Collegial Nurse-Doctor Relations		-0.021	
Experience	0.318**		
Nurse Manager Ability, Leadership, and Support of Nurses	-0.241	-0.030	
Nurse Participation in Hospital Affairs	0.225	0.067	
Nursing Foundations for Quality of Care		0.478**	
Patient Turnover			0.072
Qualification	0.105		
Role Competency			0.647**
Role Support	0.328**		0.175*
Staffing & Resource Adequacy		0.098	
Voluntary Patients			-0.066
Ward Skill Mix		-0.175	
Ward Staffing		0.088	

* Significant at $p \leq 0.05$
** Significant at $p \leq 0.01$

However, in addition to the examination of the size and statistical significance of the coefficient, a further calculation has been proposed by Falk and Tonkin (2001) that considers both the path coefficient and the correlation between the two constructs: the product of the path β and the correlation coefficient. They state that if this value is below 0.015 the path explains less than 1.5% of the total variance of the latent variable and should be removed from the model. Although 1.5% is a small percentage, models may have several exogenous variables that contribute similar amounts, together comprising a more meaningful figure. Also, a small

sample size may underestimate the contribution of each path (Hsu, et al., 2006). Applying this criterion, most paths are above the minimum acceptable level (Table 28).

Table 28 Path Contribution to R^2 (Path Coefficient × Correlation Coefficient, expressed as %) (Model 1a)

	Role Competency	Role Support	Therapeutic Commitment
Clinical Supervision	**1.76%**	**5.03%**	
Collegial Nurse-Doctor Relations		-0.23%	
Experience	**10.05%**		
Nurse Manager Ability, Leadership, and Support of Nurses	**4.82%**	-0.56%	
Nurse Participation in Hospital Affairs	**4.81%**	**2.88%**	
Nursing Foundations for Quality of Care		**27.67%**	
Patient Turnover			1.44%
Qualification	**1.59%**		
Role Competency			**46.79%**
Role Support	**12.33%**		**7.32%**
Staffing & Resource Adequacy		**3.49%**	
Voluntary Patients			0.43%
Ward Skill Mix		**3.43%**	
Ward Staffing		-0.06%	

Bold values are above the minimum acceptable value of 1.5%

It is important to note that the size and statistical significance of path coefficients, and the estimate of their contribution to R^2, may be influenced by small sample size, and that this factor is a possible explanation for the number of paths not meeting all the accepted criteria (Chin, 1998; Hsu, et al., 2006; Marcoulides & Saunders, 2006; Podsakoff, et al., 2003). Given that this is an acknowledged limitation of this study, and in order to retain paths that may meet criteria if the model were tested with a larger sample size, a conservative approach was taken to path removal. It was therefore decided to retain paths that meet *any* of the criteria: either statistical significance, size above 0.2, or a contribution to R^2 of greater than 1.5%.

In keeping with the overall analytic process, an iterative approach was taken to the assessment of the structural model. First, the size, statistical significance and contribution to R^2 of each β was compared to the aforementioned criteria. Paths that did not meet any of the criteria were removed, and the process repeated until all paths met at least one of the stated standards. The conclusion of this iterative approach was the suggestion that the paths listed in Table 29 could be removed from the model, as they were not statistically significant and contributed little to the percent of variance explained of the dependent latent variable.

Table 29 Small, Non-significant Paths with Low Contribution to R^2 (Model 1a)

Independent Latent Variable		Dependent Latent Variable
Clinical Supervision	→	Role Competency
Collegial Nurse-Doctor Relations	→	Role Support
Nurse Manager Ability, Leadership, and Support of Nurses	→	Role Support
Nurse Participation in Hospital Affairs	→	Role Support
Patient Turnover	→	Therapeutic Commitment
Qualification	→	Role Competency
Staffing & Resource Adequacy	→	Role Support
Voluntary Patients	→	Therapeutic Commitment
Ward Staffing	→	Role Support

These paths were then removed from the model. In the case of the variables *Collegial Nurse-Doctor Relations, Patient Turnover, Qualification, Staffing and Resource Adequacy, Voluntary Patients,* and *Ward Staffing,* removal of the indicated path left no path to another variable in the model. Consequently these latent variables were also removed. All remaining paths contributed more than 1.5% of the variance to R^2, and all except one were statistically significant (Table 30). The path between *Clinical Supervision* and *Role Support* was retained despite the non-significant path coefficient, as it explained 3.58% of the variance in the latter variable. This approach is consistent with other analyses where variables that contribute to the dependent variable were preserved in the model regardless of statistical significance (e.g. Falk & Tonkin, 2001).

Table 30 Path Coefficients, Statistical Significance and Contribution to R^2 (Model 2), ranked by $\%R^2$

	Role Competency		Role Support		Therapeutic Commitment	
	β	% R^2	β	% R^2	β	% R^2
Role Competency					0.656**	47.8%
Nursing Foundations for Quality of Care			0.543**	31.2%		
Role Support	0.328**	12.7%			0.189*	8.4%
Experience	0.317**	10.3%				
Nurse Participation in Hospital Affairs	0.360**	8.3%				
Nurse Manager Ability, Leadership, and Support of Nurses	-0.283*	6.3%				
Ward Skill Mix			-0.234**	4.8%		
Clinical Supervision			<u>0.162</u>	3.6%		

* Significant at $p \leq 0.05$
** Significant at $p \leq 0.01$
<u>Underlined</u> = Not significant

6.5.5. Assessment of the Modified Model

This analysis suggested the elimination of paths and associated latent variables. Following the procedures outlined previously, the validity and reliability of the modified model, now designated *Model 2*, was evaluated.

Convergent Validity

Convergent validity was evaluated by examination of the factor loadings. The minimum acceptable value of 0.5, as used previously, was applied (Chin & Marcolin, 1995; Tenenhaus, et al., 2005). Two items did not meet this criterion. The indicator *znha7 – Staff nurses are involved in the internal governance of the hospital* did not load highly on *Nurse Participation in Hospital Affairs*, and the item *zrc6 – I feel that my patients believe I have the right to ask them questions about mental health problems when necessary* did not load highly on *Role Competency*. All other factor loadings remained above 0.5 (Table 46, page 198).

Discriminant Validity

The discriminant validity of the modified model was tested by examination of the cross-loadings of latent variables on indicator variables (Lohmoeller, 1988; Tenenhaus, et al., 2005).

In most cases the correlation was as expected for each instrument. However, the item *znha7* correlated more highly with the construct *Nursing Foundations for Quality of Care* than with *Nurse Participation in Hospital Affairs*. The indicator *zrc6* did correlate with the expected construct *Role Competency*, but at an almost identical level to *Therapeutic Commitment* (Table 47, page 199).

A comparison of the inter-latent variable correlations with the √AVE was undertaken to further examine discriminant validity (Chin & Gopal, 1995; Chin, et al., 1996, 2003). In most cases √AVE was larger than any of the correlations between the latent constructs (Table 48, page 200). As noted in the initial model, the correlation between Role Competency and *Therapeutic Commitment* (0.729) remained higher than√AVE for *Therapeutic Commitment* (0.699). Discrimination between these two constructs was therefore not ideal, although as stated previously as *Therapeutic Commitment* was the dependent variable of most interest in this model, it was retained.

The stringent test of validity as described by Fornell and Larcker (1981) was also applied. The constructs *Nurse Participation in Hospital Affairs*, *Nursing Foundations for Quality of Care*, and *Therapeutic Commitment* did not meet the minimum value of 0.5 (Table 48).

This re-examination of convergent and discriminant validity suggested that the 2 items with low loadings (below 0.5: znha7 & zrc6) should be removed from the model (Tenenhaus, et al., 2005).The validity of this revised model (Model 2a) was then reviewed.

All indicators loaded on their respective constructs at levels greater than the minimum acceptable of 0.5, and most were over the more stringent level of 0.7 (Table 49, page 201). All were statistically significant. The AVE for the latent variables *Nursing Foundations for Quality of Care* and *Therapeutic Commitment* (Table 31, page 135) remained below the minimum acceptable value of 0.5 (Fornell & Larcker, 1981). However, as the other measures of convergent validity, factor loadings and statistical significance, were satisfactory these constructs were retained in the model.

Cross-loadings showed good discriminant validity (Table 50, page 202), with all indicators correlating more highly with their respective latent variables than with any other constructs.

The square root of AVE was larger than any of the correlations between the latent constructs (Table 31), except for the √AVE for *Therapeutic Commitment* (0.699), which was

again exceeded by the correlation between *Role Competency* and *Therapeutic Commitment* (0.712). As described in the examination of the initial model, the limited discrimination between the constructs *Role Competency* and *Therapeutic Commitment* can also be seen in the cross-loadings, where a number of indicators for each variable have their second highest correlation with the other. In the case of *ztc13 – When working with patients with mental health problems I receive adequate ongoing support from colleagues* and *zrc5 – I feel that I have the right to ask patients about their mental health status when necessary* the loadings approach parity. The link between these 2 constructs has been found in previous research (Angus, et al., 2001b), but as *Therapeutic Commitment* was the dependent variable of most interest, and with the consideration of the possible influence of a small sample, it was retained. Analyses of reliability and the inner model were undertaken.

Table 31 Discriminant Validity: Comparison of Square Root AVE & Latent Variable Correlations (Model 2a)

	AVE	Nurse Manager Ability, Leadership, and Support of Nurses	Nurse Participation in Hospital Affairs	Nursing Foundations for Quality of Care	Role Competency	Role Support	Therapeutic Commitment
Nurse Manager Ability, Leadership, and Support of Nurses	0.616	*0.785*					
Nurse Participation in Hospital Affairs	0.514	0.506	*0.717*				
Nursing Foundations for Quality of Care	<u>0.411</u>	0.363	0.549	*0.641*			
Role Competency	0.701	-0.238	0.225	0.171	*0.837*		
Role Support	0.659	0.154	0.348	0.575	0.373	*0.812*	
Therapeutic Commitment	<u>0.488</u>	-0.149	0.188	0.149	**0.712**	0.445	*0.699*

Correlations between latent variables > √AVE are **bold**
AVE < 0.5 are <u>underlined</u>
Following PLS-PM convention √AVE is presented in the diagonal and *italicised*

6.5.6. Reliability

As described previously (see Analytical Procedure, page 104), the reliability of reflective latent variables is assessed using Cronbach's alpha (α) and the composite reliability value (p_c) (Chin & Marcolin, 1995; Tenenhaus, et al., 2005; Werts, et al., 1974). The former measure was

considered the lower bound of reliability, and the composite reliability as the better estimate (Chin, 1998; Chin & Gopal, 1995).

All of the reflective latent variables displayed high composite reliability (Table 32). The minimum value was 0.735 for *Nursing Foundations for Quality of Care*, and the maximum 0.942 for *Role Competency*. Cronbach's α values were above acceptable levels except for *Nursing Foundations for Quality of Care* (0.526) and *Nurse Participation in Hospital Affairs* (0.677). These constructs also had variable factor loadings several indicators below the 0.7 level (Table 49).

As described earlier, the discriminant validity of *Therapeutic Commitment* was not ideal, with a high correlation between this construct and *Role Competency* (0.712). This construct also displayed low AVE (0.488), as did the variable *Nursing Foundations for Quality of Care* (0.411). However, both showed high composite reliability values, and acceptable lower bounds of reliability.

Although the low Cronbach's α suggest these constructs have lower levels of overall reliability, they were retained after consideration of their composite reliability value (Chin & Gopal, 1995), and in order to examine their contribution to the model (Falk & Tonkin, 2001; Gopal, et al., 1992; Tenenhaus, et al., 2005).

Table 32 Reliability of Latent Variables with Reflective Indicators (Model 2a)

	Composite Reliability (p_c)	Cronbach's Alpha (α)
Nurse Manager Ability, Leadership, and Support of Nurses	0.864	0.801
Nurse Participation in Hospital Affairs	0.799	0.677
Nursing Foundations for Quality of Care	0.735	0.526
Role Competency	0.942	0.926
Role Support	0.882	0.813
Therapeutic Commitment	0.912	0.895

Three formative latent variables remained in the model: *Clinical Supervision*, *Experience*, and *Ward Skill Mix*. As stated previously, these variables had only a single indicator so the usual techniques for assessing reliability and validity cannot be applied.

6.5.7. Inner Model

The modified inner model (Model 2a) was examined using the methods described previously. An assessment was made of the model's predictive relevance (Q^2); the relative size,

statistical significance and contribution of the path coefficients, and the value of the R^2 of each dependent construct (Chin, 1998; Chin & Gopal, 1995; Eom, et al., 2006; Falk & Tonkin, 2001; Gefen & Straub, 2005; Tenenhaus, et al., 2005; Wong, 2006).

Stone-Geisser Q^2 Test

The blindfolding procedure was used in SmartPLS (Ringle, et al., 2005) to obtain the necessary estimates to conduct this test. The quality of the outer model for each reflective latent variable was evaluated using the cross-validated communality Q^2, and the predictive relevance of the model through the cross-validated redundancy Q^2 (Sellin, 1995; Tenenhaus, et al., 2005). The single omission distance of 10 was adopted. All latent variables obtained cross-validated communality Q^2 values substantially greater than zero (Table 33). This suggests that the predictive power of the measurement model was adequate (Sellin, 1995). The cross-validated redundancy Q^2 values for the three dependent variables were also positive, suggesting that modified inner model had good predictive power.

Table 33 Cross-Validated Communality & Redundancy (Model 2a)

	CV-Communality Q^2	CV-Redundancy Q^2
Nurse Manager Ability, Leadership, and Support of Nurses	0.619	
Nurse Participation in Hospital Affairs	0.506	
Nursing Foundations for Quality of Care	0.408	
Role Competency	0.585	0.240
Role Support	0.457	0.233
Therapeutic Commitment	0.359	0.228

Omission distance = 10

It was also noted that the cross-validated redundancy figures for Role Competency and Role Support were larger than those for the initial model (see Table 25, page 129). At least for these constructs, the modified model has more relevance than the initial model.

R^2 for Dependent Latent Variables

The estimate of the amount of variance in the dependent construct that was accounted for by the predictors (R^2) was then assessed. Over 38% of the variance of the latent variable *Role Competency* was predicted, nearly 40% of *Role Support*, and nearly 55% of *Therapeutic Commitment*. With the exception of *Role Competency*, all figures were slightly below those found in the examination of the initial model (see Table 26, page 129). As Sellin (1995) notes, R^2 values may decrease when variables are removed from the equation, although the

remaining predictive variables account for a substantial proportion of the each construct's variance.

Table 34 R^2 for Dependent Latent Variables (Model 2a)

Latent Variable	R^2
Role Competency	0.383
Role Support	0.396
Therapeutic Commitment	0.544

Structural Path Coefficients

An assessment was made of the size, statistical significance, and contribution to R^2 of each of the path coefficients (Table 35). All paths were above the low value of 0.20 as recommended by Chin (1998), and all contributed greater than 1.5% to the variance of the latent variable (Falk & Tonkin, 2001). The path from *Clinical Supervision* to *Role Support* was not significant (p=0.08), although as it contributed 3.5% to that dependent construct it was retained.

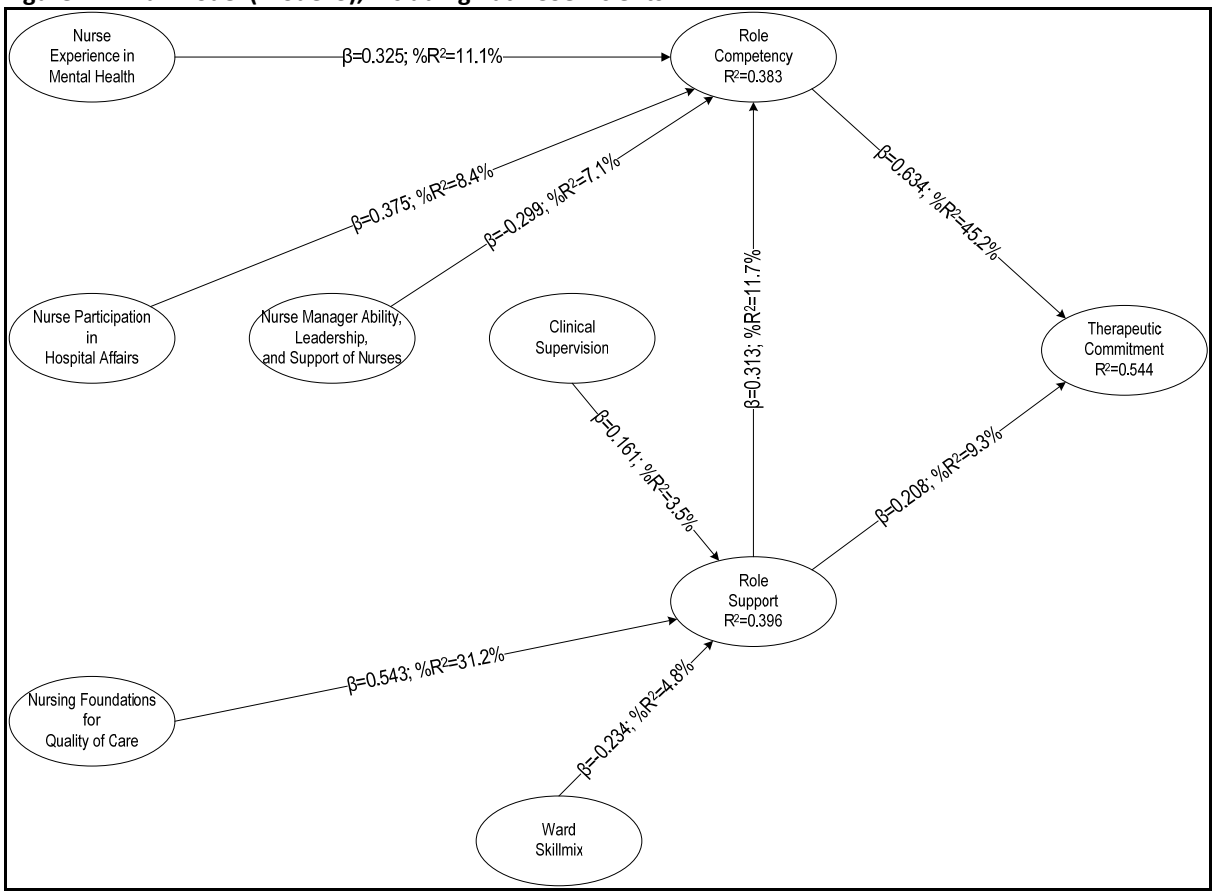
Table 35 Path Coefficients, Statistical Significance, and Contribution to R^2 (Model 2a & 3), ranked by $\%R^2$

	Role Competency		Role Support		Therapeutic Commitment	
	β	% R^2	β	% R^2	β	% R^2
Role Competency					0.634**	45.2%
Nursing Foundations for Quality of Care			0.543**	31.2%		
Role Support	0.313**	11.7%			0.208**	9.3%
Experience	0.325**	11.1%				
Nurse Participation in Hospital Affairs	0.375**	8.4%				
Nurse Manager Ability, Leadership, and Support of Nurses	-0.299*	7.1%				
Ward Skill Mix			-0.234**	4.8%		
Clinical Supervision			0.161	3.5%		

* Significant at $p \leq 0.05$
** Significant at $p \leq 0.01$
Underlined = Not significant

Following this assessment of the inner model no changes were made to paths or latent variables. The final model (Model 3) therefore appears identical to the modified model presented earlier, although with two changes to the measurement model as described. This model is presented in Figure 12, indicating the relative importance of each path.

Figure 12 Final Model (Model 3), including Path Coefficients.



6.6. Overview of Model Testing

Following the iterative procedure described above several paths were removed from the initial model. Each removed path represents an hypothesis that was not accepted in the analysis. Of the initial 18 paths, 9 were not retained (Table 51 & Table 52, Appendix F).

In the case of the constructs *Qualifications, Collegial Nurse-Doctor Relations, Staffing & Resource Adequacy, Ward Staffing, Patient Turnover, and Voluntary Patients*, the removal of the path (rejection of the hypothesis) also removed the relationship of that construct with other constructs in the model. These latent variables were consequently removed. The final model therefore contained nine of the original 15 constructs, and nine of the original 18 paths (Table 36). Each of these paths represent an hypothesis that was supported by the statistical analysis.

Table 36 Paths in the Final Model

Hypothesis Number		Path	
H1	Role Support	→	Role Competency
H3	Experience	→	Role Competency
H4	Nurse Manager Ability, Leadership, and Support of Nurses	→	Role Competency
H5	Nurse Participation in Hospital Affairs	→	Role Competency
H7	Clinical Supervision	→	Role Support
H11	Nursing Foundations for Quality of Care	→	Role Support
H13	Ward Skill Mix	→	Role Support
H15	Role Support	→	Therapeutic Commitment
H16	Role Competency	→	Therapeutic Commitment

An often-cited advantage of PLS-PM is that the individual and combined effects of independent variables on dependent variables can be assessed (Chin, 1998; Esposito-Vinzi, et al., 2008). This assessment may be undertaken using the path coefficients, their proportional influence, and the product of the correlation between latent variables and the path coefficients (Falk & Tonkin, 2001). The overall R^2 for each of the dependent variables provides an estimate of the variance predicted by the combination of explanatory variables, and the R^2 of the final latent variable therefore the amount of variance explained by the model as a whole (Chin, et al., 2003).

The initial model underwent considerable adjustment during the iterative process of analysis. These modifications resulted in a much smaller model than that originally proposed. Half of the hypothesised relationships between the constructs were rejected, and six of the constructs judged to be important factors in the therapeutic commitment of nurses working in mental health were found to be unsupported statistically. An examination of these rejected hypotheses and constructs, together with those remaining, assists in the interpretation of the final model.

6.6.1. Accepted Paths Supporting Hypotheses

Aside from the two paths described below, the nine paths remaining in the model supported the hypotheses described earlier. Four of the original six paths to role competency were retained, three of the eight paths to role support, and two of the four to therapeutic commitment:

- *H_1 That increased role support will be related to increased role competency*
- *H_3 That greater years of experience in mental health will be related to increased role competency*

- *H_5 That increased nurse participation in hospital affairs will be related to increased role competency*
- *H_7 That the presence of clinical supervision will be related to increased role support*
- *H_{11} That increased nursing foundations for quality of care will be related to increased role support*
- *H_{15} That increased role support will be related to increased therapeutic commitment*
- *H_{16} That increased role competency will be related to increased therapeutic commitment*

Paths to Role Competency

Role competency, the perception that a nurse is legitimately working in the mental health field and has the relevant skills and knowledge, was hypothesised to be influenced by the nurse's experience and qualifications, by their involvement in hospital affairs, by nursing leadership, the specialist support they receive, and by clinical supervision. The paths to this construct from clinical supervision and qualifications were removed during analysis (see Paths/Hypotheses Rejected, below), and the path from nursing leadership and support was in the opposite direction to that hypothesised. The predictive variables in the initial model accounted for 35.4% of the variance in this construct. Following the removal of paths during analysis this proportion increased to 38.3% in the final model, with a good predictive relevance of 0.240 (cross-validated redundancy Q^2). Three of the four retained paths supported the hypotheses stated earlier, while one path was accepted according to the criteria but in the direction opposite to that hypothesised.

In accordance with the MH-MAPP model, the first hypothesis was *That increased role support will be related to increased role competency* (H_1). The construct role support accounted for 11.7% of the total variance of role competency, the largest amount of the four predictor variables. This path was statistically significant although the β value was lower than that for two other predictors (see Table 35). In this case both the β coefficient (0.313) and the correlation (0.373) between these latent variables is relatively high, explaining the high proportion of variance. This finding is congruent with the correlations found in prior research (Angus, et al., 2001a; Lauder, et al., 2000). It supports the contention that access to sufficient support from specialist mental health workers is influential on the nurse's perception of legitimacy and adequacy in the role.

The hypothesis *That greater years of experience in mental health will be related to increased role competency* (H_3) was also accepted. This hypothesis was based on the

theoretical foundation underlying role competency: Bandura's (1977) concept of self-efficacy. The link between experience and role competency was made explicit in several developmental papers (Albery, et al., 2003; Hunot & Rosenbach, 1998; Lightfoot & Orford, 1986). It was believed that nurses with more experience would have had more opportunity to observe competent role models and to experience success following exposure to appropriate learning situations. In the case of this sample this belief was upheld.

The nurses' involvement in the hospital was also believed to provide more opportunity for success following effort and for observation of successful role models, both factors considered to be influences on self-efficacy (Bandura, 1994). It was further suggested that the involvement in hospital and nursing committees and career development (see Table 14) would enhance the nurse's legitimacy in the role. Thus the hypothesis *That increased nurse participation in hospital affairs will be related to increased role competency* (H_5). This construct contributed 8.4% to the explanation of the variance in role competency, with the highest path coefficient of 0.375. This indicates that nurses who participate in the hospital's policy and career development activities have higher levels of self-efficacy and perceive themselves to be both adequately prepared for the role and legitimate incumbents.

However, it must also be considered that nurses who display higher levels of role competency may be those who will involve themselves in the hospital, who take opportunities for advancement and career development, and who stay in the profession and in their chosen specialty area. It is important to remember that the direction in this model is based on a theoretical understanding and that statements suggesting causality are consequently based on that understanding rather than experiment.

Paths to Role Support

Of the eight paths in the initial model leading to role support, only three were retained. These three variables initially predicted 41.7% of the variance, which decreased to 39.6% following the removal of paths. The cross-validated redundancy Q^2 value of 0.233 showed good predictive relevance (Tenenhaus, et al., 2005). One of the retained paths was in the direction opposite to that expected, and one was not statistically significant, although the latter contributed an acceptable proportion to the total variance explained (Table 35).

The supposition *That the presence of clinical supervision will be related to increased role support* (H_7) was upheld. This hypothesis was founded in the definition of role support as

access to sufficient support from specialist mental health staff. As clinical supervision involves consultation with more experienced staff in the field, it was believed to be an obvious influence on the support perceived by nurses. The construct contributed 3.5% to the explained variance of role support, but the path was not found to be statistically significant.

It may be possible to explain the low contribution to R^2 as an artefact of the method of measurement of clinical supervision. It was measured by self-reported presence or absence. No measurement was made of the nature or frequency of supervision. More detailed measurement of the aspects of clinical supervision may have led to a different finding.

The latent variable *Nursing Foundations for Quality of Care* (Foundations), was measured by the NWI-PES. It was believed to influence role support as it assessed nurses' perception of aspects of support such as the existence of a nursing philosophy in the organisation, support from clinically competent colleagues, and high standards of nursing care (Table 14). Specifically, the hypothesis was *That increased nursing foundations for quality of care will be related to increased role support* (H_{11}). This was upheld with a statistically significant β of 0.543, and a very high contribution to R^2 of 31.2%. These aspects of the work environment are therefore strong predictors of the nurse's perception or support in their role.

Paths to Therapeutic Commitment

There were four paths leading to therapeutic commitment in the original model. Predictive relevance was good with an initial cross-validated redundancy Q^2 value of 0.239,and an R^2 of 0.560. Both of these values decreased when two paths were removed during analysis. The remaining two accounted for the total R^2 of 0.544, and a Q^2 of 0.228. Both remaining paths were derived from the MH-MAPP model. The first, *That increased role support will be related to increased therapeutic commitment* (H_{15}) was affirmed by a path coefficient of 0.208 and contributed 9.3% of the variance in the dependent variable. The other path to therapeutic commitment had a β of 0.634 and contributed the majority of the R^2 at 45.2%. The hypothesis, *That increased role competency will be related to increased therapeutic commitment* (H_{16}) was therefore upheld.

Both of these findings are consistent with the MH-MAPP model, and with previous research using the MHPPQ instrument. The core model was therefore confirmed by these findings, together with many of the aspects of the work environment believed to relate to the components thereof.

6.6.2. Accepted Paths in Direction Contrary to Hypotheses

Two path coefficients were found to be both statistically significant and to contribute an acceptable proportion of variance, but were in a direction opposite to that hypothesised in the model. The path from nursing leadership and support of nurses to role competency was negative, and contributed 7.1% of the R^2 of the latter variable (0.383). This sign is contrary to the expected direction as stated in the hypothesis *That increased nurse manager ability, leadership, and support of nurses will be related to increased role competency* (H_4). Falk and Tonkin (2001) note that unexpected or contrary findings may be the result of the suppressor effect; an effect that may occur in models with correlated variables. In this case, the constructs derived from the NWI-PES were positively correlated (see Table 23, page 124), an indicator that this effect may be present. However, the signs of both the correlation and path between leadership and role competency were consistent (i.e. in the same direction), suggesting that this was not an artefact but a genuine finding with these data (Falk & Tonkin, 2001).

Also of note, and contrary to findings in medical-surgical nursing research, was the negative path between skill mix and role support. The hypothesis *That an increased proportion of registered nurses on the ward will be related to increased role support* (H_{13}) was based on prior research that had found significant positive relationships between the proportion of hours worked by registered nurses and patient or nurse outcomes (Kane, et al., 2007; Lankshear, et al., 2005). However, although an association between the variables was upheld, it was in the opposite direction to that expected. That is, as the proportion of registered nurses increased, role support decreased. The path was statistically significant and contributed 4.8% of the total R^2 for Role Support (0.396).

6.6.3. Paths/Hypotheses Rejected

Nine paths in the initial model were not statistically significant, and were found to contribute little to the R^2 for the latent variable. Two of the these paths related to role competency, five to role support, and two to therapeutic commitment.

Role Competency

The level of mental health qualification held by the nurse, and their involvement in clinical supervision, were hypothesised to have a positive influence on the nurse's perceived role competency. The suggestion was that the possession of the relevant skills and knowledge would be influenced by both factors.

The level of qualification is self-explanatory and based on the assumption that higher levels link to the perception of greater skills and knowledge. This is embodied in the MH-MAPP model, and explicitly stated in the development of similar models (Albery, et al., 2003; Hunot & Rosenbach, 1998; Lauder, et al., 2000; Lightfoot & Orford, 1986). However, this construct was not found to be significant in the model.

Clinical supervision as described by Proctor and others (Bowles & Young, 1999; Cutcliffe & Proctor, 1998; Proctor, 1986; Winstanley & White, 2003), includes an educational component and this could be expected to increase the nurse's self-efficacy in mental health through knowledge development. Further, clinical supervision may assist the individual in interpreting their personal reactions to stressful nursing situations (Bowles & Young, 1999), and provide opportunity for realistic appraisal and appropriate persuasion. The finding that participation in clinical supervision was not positively related to role competency was therefore unexpected.

It is possible that in this study the measurement of clinical supervision was of insufficient detail to establish the link to role competency. For example, measurement of the frequency of supervision or the length of time receiving supervision would have altered the variable from a binary (presence/absence) to a continuous (or at least ordinal) level of measurement. This may have provided more variability and potentially altered the findings for the hypothesis. In particular, greater length of participation in clinical supervision has been associated with the reported benefits using Proctor's model (Bowles & Young, 1999; Davey, et al., 2006).

In the iterative path-removal process, both paths initially contributed above the minimum value of 1.5% of the R^2 value for role competency (Table 28, page 131). However, neither factor was statistically significant and on removal of other paths the contribution of these variables fell below the minimum contribution criterion.

Role Support

Of the eight paths in the initial model that linked to role support, five were removed. As stated previously, the removal of these non-significant and low-contributing paths reduced the amount of variance in role support that was explained by the predictor variables by 2.1%. However, the cross-validated redundancy Q^2 measure increased from 0.200 to 0.233. As noted by Sellin (1995), the effect of the removal of unstable predictors in PLS-PM may be to decrease the R^2, but such removal may also increase the predictive relevance.

The first hypothesis removed was *That increased collegial nurse-doctor relations will be related to increased role support* (H_8). Positive relationships between nurses and doctors has been found in prior research to be a supportive factor as it encourages consultation and development of quality care (Lake, 2002; McClure & Hinshaw, 2002; McClure, et al., 1983). In Australia, this factor has been found to be associated with lower rates of threats of violence and improved nurse satisfaction with the profession on medical-surgical wards (Duffield, et al., 2007).

The rejection of this hypothesis may indicate that the factor is not relevant in mental health, although with the multidisciplinary nature of the work in this field it is difficult to sustain that suggestion. Alternatively, as the NWI-PES has not been widely tested in specific mental health settings it may be that the items are not sensitive to the environment. It is also possible that the term 'physicians' on the NWI-PES, deemed suitable for use in medical-surgical settings, is not appropriate for mental health as clinicians interpret the term to mean non-mental health doctors.

Leadership was considered to be an important aspect of role support. Hence the hypothesis *That increased nurse manager ability, leadership, and support of nurses will be related to increased role support* (H_9). This factor has been found to be significant in medical-surgical nursing and was believed to related to role support through direct access to experienced nurses for consultation, as well as the more general function of providing opportunities to nurses for individual support of and by others. Although the finding, that leadership is associated with *decreased* role support, may be an artefact of the novel use of the NWI-PES in this setting, it may also suggest a contrast between leadership in mental health and general nursing.

Nurse participation in hospital affairs measured the perceived value of nurses in the hospital context, through their involvement in internal committees, policy development and communication with senior nurses in the organisation (Lake, 2002). This construct was believed to relate to role support as it provided access to more experienced nurses, and the opportunity for advancement and career development. In the initial model this factor did contribute 2.88% of the variance of role support, although it was not statistically significant and in further iterations did the contribution to R^2 fall below the set level.

Staffing and resource adequacy was believed to influence role support by providing the opportunity for nurses to seek and receive consultation from senior nurses. In medical-surgical nursing studies in Australia this factor has been found to be a significant predictor of nurses' job satisfaction and ability to complete their work (Duffield, et al., 2009c; Duffield, et al., 2007). It was considered that in the mental health setting items such as 'Adequate support services...' and 'Enough time and opportunity to discuss patient care...' (Table 14) would relate to role support. However, although this factor did initially contribute 3.43% of the variance of the dependent construct, it was not significant and with the removal of other paths was found to contribute less than the minimum acceptable level of 1.5%.

Similar to staffing and resource adequacy, although measured more objectively through the ward roster, the staffing level of the ward was hypothesised to increase the perception of role support. This factor neither met the criterion for contribution to R^2, nor was it statistically significant. An explanation for rejection is not apparent as the hypothesis appears to be well supported, although it may be related to the small ward sample size.

As noted earlier, the small sample size may also be contributors to the removal of paths (Chin, 1998; Marcoulides & Saunders, 2006). In larger samples these paths may attain significance and contribute meaningfully to the variance of the dependent construct.

Therapeutic Commitment

Four paths were linked to therapeutic commitment in the initial model. Two of the original paths were derived from the MH-MAPP model, and two were based on the belief that sufficient opportunity to spend time with patients, and the nature of those patients would be direct influences on the nurses' willingness and ability to engage therapeutically. Both of the latter paths were removed from the model as they did not contribute sufficient values to R^2, and were non-significant.

The frequent movement of patients has been found to be a significant issue in medical-surgical nursing (Duffield, et al., 2009a; Unruh & Fottler, 2006). The ability to access patients readily, and to thereby have the opportunity to develop a therapeutic relationship, has been suggested as an issue for mental health nurses in Australia (Cleary & Edwards, 1999; Cleary, et al., 1999). The rejection of the hypothesis *That lower levels of patient turnover will be related to increased therapeutic commitment* (H_{17}) was an unexpected finding in this study.

The final hypothesis in the model, *That a higher proportion of voluntary patients on the ward will be positively related to therapeutic commitment* (H_{18}), was included as a measure of patient characteristics. It must be noted, as discussed previously, that this was not a well-established factor, and that it was chosen as a proxy measure of patient characteristics. It was not possible to measure more detailed patient features due to the resources available to the study, and because ethical concerns expressed regarding the identifiability of participants. This hypothesis was based on the belief that the characteristics of the patient would have a direct effect on the nurse's therapeutic commitment. That is, it was considered that a patient who did not wish to work therapeutically with the nurse may lead the nurse to experience lower levels of commitment. The rejection of this hypothesis could be the result of misspecification of the factor. Therefore, the capture of more substantive and direct patient characteristics should be considered in future development of this model.

6.7. Summary

In summary, the core model of therapeutic commitment proposed in this study was supported. The constructs of role competency, role support, foundations for quality, nurse experience, participation in hospital affairs, leadership, skill mix and clinical supervision were retained and contributed to the overall estimated R^2 of 0.544. The major contributing work environment factors in the model were the foundations for quality care, nurse experience and participation in hospital affairs.

Other concepts specified in the model were not supported statistically. The primary limitation of the study was the small sample size. Possible consequences include the underestimation of the strength and significance of the paths in the model, suggesting that future examination of the model with a larger sample may provide more information in regard to these constructs. Discussion of these results in the light of previous research in general nursing, mental health and other fields provides recommendations for future work and the support of nurses in their workplace.

7. Discussion

The purpose of this study was to examine the impact of individual nurse, patient and work environment factors on the ability of nurses to engage in therapeutic relationships in the inpatient mental health setting. The therapeutic relationship has been identified as the central focus of nursing work in this clinical area, is valued by consumers, and is a contributor to positive patient outcomes (see Chapter 2). There is currently little published quantitative research that examines factors that influence nurses' capacity to effectively engage in this relationship. This necessary precursor to the therapeutic relationship, referred to as therapeutic commitment, was the dependent variable in this study.

This research was undertaken in the context of increased requirements for mental health services worldwide, significant reform in the nature of this service delivery in Australia, increasing emphasis on multidisciplinary work and treatment approaches, and changes to the educational preparation of nurses to work in this field (see Chapter 1). These changes have been linked to low nurse job satisfaction, reduced professional status, consumer and carer reports of unfair and difficult access to services and issues of recruitment and retention. It was proposed that aspects of this work environment may influence the nurse's ability to engage therapeutically with patients.

The environmental factors believed to influence the nurse's therapeutic commitment were derived from the general and mental health nursing literature, and included nursing leadership, collegial relationships with doctors, participation in the hospital's affairs, the foundations of quality nursing care, clinical supervision, staffing, skill mix and patient characteristics (see Chapter 3). These factors, together with individual characteristics of the nurse such as experience and education (see Chapter 2), were added to a core framework first developed in alcohol counselling services that included the nurse's perception of support, adequacy and legitimacy in their role along with their therapeutic commitment (Lauder, et al., 2000; Shaw, et al., 1978; Chapter 4). This extended model (Figure 11, page 121) was tested using partial least squares path modelling (see Chapter 5), which permitted identification of the statistical significance, predictive strength and direction of the hypothesised relationships. Factors were removed from the model if they were not significant and did not substantially contribute to the dependent variables (see Chapter 6).

The sample of 76 nurses was similar to the population of clinical nurses working in adult mental health in New South Wales. It contained a similar proportion of males and registered nurses, and the percentage of part-time enrolled nurses was comparable. However, this sample of nurses was considerably younger across all categories, with a smaller proportion of part-time RNs, and a larger proportion of male ENs. It was also similar to previous research in the proportion of nurses currently in receipt of clinical supervision. It is possible to say therefore, that this sample is similar to the population in a number of respects, although an appropriately parsimonious approach to generalisability should be applied.

This Chapter first presents an evaluation of the findings in regard to therapeutic commitment and factors in the work environment with respect to previous research. It then proceeds to discuss the factors shown to influence this important aspect of the nurses' attitude. The implications for nursing in mental health settings and future research are identified and discussed.

7.1. Review of the Findings

The focus of this study was the testing of an hypothesised model. However, factors in the work environment and components of the core framework were measured using instruments that have been applied elsewhere, generally in other countries or in non-mental health settings. A comparison of the scores on each of the measured domains provides an understanding of these factors in Australian mental health. A particular point of difference was the higher scores in this sample on several of the domains of the NWI-PES and MHPPQ.

Previous research using the MHPPQ with nursing students (Lauder, et al., 2002) found an average therapeutic commitment of 67.1 (SD=10.2), role competency 34.3 (SD=7.5) and role support 19.1 (SD=3.6). Scores in the present study were substantially higher, particularly those for therapeutic commitment and role competency (see Table 15, page 112). It would be reasonable to suggest that nurses in the current study have chosen to work in mental health, that they would therefore feel that they have adequate skills and are legitimately in the role, and that they would consequently display more willingness and ability to engage in the therapeutic relationship. However, scores in both studies for the domain of role support were similar. That nurses actually working in the area perceive similar levels of support in their mental health role to student nurses suggests that there are considerable issues in relation to the support of the current workforce. This is consistent with reports and previous research in

Australia (Clinton, 2000; Senate Community Affairs References Committee, 2002). In the present study, a number of aspects of the work environment (discussed below) were found to be significantly associated with role support in the final model, supporting this contention.

The NWI-PES has been more widely used than the MHPPQ, including application to much larger international datasets. Analysis of data from general nurses has established that scores above 2.5 on each of the domains of this instrument may be classified as 'positive' (Lake & Friese, 2006). The mean scores in the present study were equal to or above this level (Table 14, page 111), indicating that nurses in mental health generally considered these aspects of the work environment to be positive. In addition to this finding, a comparison with prior research indicated that respondents perceived *Staffing and Resource Adequacy* to be considerable higher in the mental health setting than in Australian general nursing (Middleton, et al., 2008). Of particular note, in the current study the mean score for *Collegial Nurse-Doctor Relations* was higher than that reported in United States magnet hospitals (Lake & Friese, 2006). This is indicative of strong interdisciplinary relationships and may be a consequence of the nature of work in mental health settings, described as inherently multidisciplinary (Grigg, 2001; Rosen, 2001). All other domains scores were lower than magnet hospitals and were similar to other Australian research (Middleton, et al., 2008).

Given the links established by this study between elements of the environment and therapeutic commitment, it is encouraging that nurses reported a positive work environment. However, these scores were considerably higher than would be expected on the basis of previous Australian research, discussed in Chapter 1, that depicted a challenging work environment for mental health nurses. In the light of these reports, it must be considered that there may be additional factors unmeasured in the present study, or that the settings chosen were atypical in this regard. It is also possible that the classification of scores above 2.5 as positive is not appropriate in Australian mental health settings, although this statement could not be supported on the basis of the current study. Further research, replicating the work of Lake and Friese (2006) with a larger sample of nurses in mental health, would be required to validate the factors, and to determine a delineation of positive and negative domain scores in this clinical area.

Overall, nurses in this study perceived a more positive work environment and reported higher levels of therapeutic commitment and role competency than previous studies. However, they perceived levels of support that were relatively low, suggesting that this factor

remains an issue. The model testing procedure described in Chapter 6 identified the most important influences on the commitment of nurses to the therapeutic relationship and provided a basis for discussion and recommendations.

The Final Model

Therapeutic commitment was the final dependent variable in this study and is a measure of the necessary conditions for a nurse to establish and maintain a therapeutic relationship with a patient. The latter two elements in the MH-MAPP model, role competency and role support, were hypothesised to directly influence the nurse's therapeutic commitment. An association between role support and role competency was also proposed. Following assessment of the model, the three elements of the core MH-MAPP model were all found to be associated with each other as indicated by Lauder et al.(2000; 2002) and researchers in other fields (Albery, et al., 2003; Hunot & Rosenbach, 1998; Lightfoot & Orford, 1986). This provides support for the application of this model to nurses working in mental health and suggests that further research using the core framework is justified.

In addition to the ratification of the core framework, this study has established that many of the environmental factors are important influences on therapeutic commitment. The final model accounted for more than half of the variance in the data. Therefore, the overall argument of this study was upheld: that features of the nurse and work environment influence the ability and willingness of the nurse to engage therapeutically with patients in the inpatient mental health setting. It suggests that actions to improve the work environment of nurses in mental health will enhance their commitment to develop effective therapeutic relationships and, through this relationship, establish a more patient-centred approach and improve patient outcomes.

7.2. Influences on Therapeutic Commitment

The strongest influence on therapeutic commitment was the role competency of a nurse; their perceived legitimacy in the role and the adequacy of their skills. Role support, the support the nurse perceived from the organisation, influenced therapeutic commitment directly and was also the major contributor to role competency. The factors of experience, clinical supervision, foundations of quality care and participation in hospital affairs were in turn important influences on these core components. Together, these elements have a significant impact on the necessary conditions for an effective therapeutic relationship. These

factors may be modified through changes to practice and policy in order to improve therapeutic commitment and nurses engagement with patients. The influence of each of the contributing factors to therapeutic commitment is considered through its impact on the intermediary constructs of role competency and role support.

Role Competency

The influence of the nurse's role competency on their therapeutic commitment was substantial, accounting for approximately 45% of the variance. That nurses who perceived themselves to be legitimately in the role and as having adequate interpersonal skills also displayed high levels of therapeutic commitment is not surprising. It confirms the core framework as proposed by Lauder et al. (2000) and previous research that has tested the associations between the variables (Lauder, et al., 2002). Role competency was increased by the support nurses received in their role, their years of experience in mental health and their participation in hospital affairs. Nursing leadership was also a significant influence on role competency but, contrary to expectations, was negative.

Nurse Experience

The finding that experience was a strong influence on role competency is concordant with previous work that has found that nurses who are experienced in the clinical area have higher confidence and ability to control their emotions (Humpel & Caputi, 2001). More generally, supported experience and feedback has been found to assist the interpretation of events in a way that enhances learning and skill development (Bandura, 2001; Brown, et al., 2005). This suggests a possible interaction between support and experience, further endorsed by the finding in this study that these two factors were the most influential on the nurse's perception of legitimacy and adequacy in their role. That is, although, tautologically, it takes time to develop experience, the influence of this experience on the individual's role competency and therapeutic commitment can be enhanced through effective supportive mechanisms.

This finding also supports the conceptualisation of role competency as being strongly related to self-efficacy. Nurses who have the opportunity to observe role models, and have graded experience of success with positive support and encouragement, would be expected to display high levels of self-efficacy and of role competency (Lauder, et al., 2000; Lauder, et al., 2002). This has implications not only for the current workforce and transition to practice, but also for the nature of nursing education. Effective development of interpersonal skills using

graded exposure and experiential learning techniques has been found to improve the attitudes and confidence of students in mental health (Curtis, 2007). Although the mental health content of nursing courses in Australia ranks interpersonal skills highly and has increased in hours over the past decade (Mental Health Nurse Education Taskforce, 2008), the method and hours of delivery of this content will need ongoing evaluation.

Nurse Participation in Hospital Affairs

The nurses' participation in hospital affairs was also influential on role competency. This includes career development opportunities, involvement of clinical nurses in the governance of the hospital, and the responsiveness of administration to the needs of nurses in mental health. These factors have been found to be important in magnet hospitals in the United States (Armstrong & Laschinger, 2006; Armstrong, et al., 2009) and in general nursing studies in Australia (Duffield, et al., 2009c; Duffield, et al., 2007).

In mainstreamed services such as those involved in this study, it is feasible that opportunities for career development are less open to nurses in mental health when compared to those in general nursing. Submissions to the *Not for Service* and other inquiries (Mental Health Council of Australia, 2005; NSW Legislative Council Select Committee on Mental Health, 2002; Senate Community Affairs References Committee, 2002) are suggestive of this possibility, particularly the responsiveness of general administration to mental health staff, but it has not been explored in other research. In the light of these submissions, this implies a change is necessary in the culture of hospitals where mental health is mainstreamed and suggests that the implementation of policies and practices that facilitate involvement in governance from all departments is warranted. These actions could also serve to improve access for mental health staff to senior management, to improve the understanding of mental health service delivery amongst general hospitals and to thereby improve responsiveness to those concerns.

The hypothesised link from nurse participation in hospital affairs to role support was not found to be significant. This construct contains a number of items that would be considered indicative of support, such as the ability to access senior nursing colleagues and the responsiveness of the organisation. Further examination of this factor and its link to support is warranted.

Nurse Manager Ability, Leadership, and Support of Nurses

In the hypothesised model, nursing leadership was believed to enhance nurses' role competency and to provide support to nurses through influence on other aspects of the work environment, such as enhanced participation in the organisation and access to career and professional development (Laschinger & Leiter, 2006). However, no association between leadership and role support was found, suggesting that nurses were not receiving adequate support from their ward or hospital managers. In addition, a negative relationship was found between leadership and role competency. This unexpected finding was markedly different to studies in general nursing, where leadership has been linked to positive outcomes for nurses, such as higher job satisfaction (Aiken, et al., 2008; Laschinger & Leiter, 2006; Leiter & Laschinger, 2006) and fewer adverse events (Clarke, 2007).

The findings of the present study regarding leadership may indicate a different perception of leadership in nurses working in this area, or be a reflection of the nurses' view of hospital leadership. For example, similar to the previous point regarding participation in hospital affairs, there have been a number of issues with the mainstreaming of services and mental health components of general services being treated 'differently' (Mental Health Council of Australia, 2005). It may be, therefore, that this factor reflects the view of nurses in mental health that there is indeed strong leadership at the hospital level, but it is not mental health leadership. These findings require further clarification as leadership in mental health has been suggested to be a significant issue and in need of improvement (NSW Legislative Council Select Committee on Mental Health, 2002).

Role Support

The support provided to nurses in their role was the largest influence on their perceived role competency, as well as a direct influence on therapeutic commitment, in accordance with the MH-MAPP model (Lauder, et al., 2000). Role support is the perception of the nurse that they have sufficient support from their organisation and access to supportive colleagues. This construct is an explicit embodiment of the supportive aspects believed to influence role competency and therapeutic commitment. Role support in turn was increased by the nursing foundations for quality of care and the involvement of the nurse in clinical supervision. The skill mix of the ward was also influential, although the direction of the relationship was opposite to that expected (see Skill Mix, page 159).

Nursing Foundations for Quality of Care

The nursing foundations for quality of care include access to continued education, the provision of preceptors for new staff, and working with supportive colleagues (Lake, 2002). This factor was the highest contributor to role support and explained the greatest proportion of variance of all the work environment factors (31.2%). This construct has been found to be a significant influence on nurse outcomes in a number of general nursing studies, in particular in relation to reduced depersonalisation and increased job satisfaction (Tervo-Heikkinen, et al., 2008; Van Bogaert, et al., 2009). Although this concept has not been studied in mental health, some of its elements have been identified as important to nurse outcomes. For example, a number of studies have identified support in the form of preceptorship as a crucial component in the transition to practice of new nurses (Charleston & Happell, 2004; Hayman-White, et al., 2007; Rungapadiachy, et al., 2006). However, the availability of this support to new staff in mental health has been questioned (Australian Health Workforce Advisory Committee, 2003), as has the ability of nurses in this area to access continued education (White & Roche, 2006). Indeed, despite the implementation of incentive schemes to enhance access to postgraduate mental health education, relatively few nurses have availed themselves of the opportunity in NSW (NSW Labour Economics Office, 2008; Pagnini, 2005).

The support provided by these foundations to nurses in mental health, through access to education, preceptorship and supportive colleagues is therefore an important aspect of the work environment. Although steps have been taken to improve this support, in particular access to continued education, these other components of support should also be addressed.

Another indication of the presence of the foundations of quality nursing is continuity of care. Of all the foundations, this is perhaps the most obvious impediment to the establishment and maintenance of a therapeutic relationship. For example, it is possible to imagine how nurses who believe it unlikely they will be allocated the same patient from day to day would feel less supported in their role and therefore be unwilling to engage therapeutically. From a patient's perspective, frequent changes of nursing staff can disrupt the nurse-patient relationship (Bryant, et al., 2005) and continuity is considered important in the development of trust (Wierdsma, et al., 2009). In addition, lack of continuity may alter the nature of the relationship to a more custodial focus (Gijbels, 1995). This foundation of care may be most effectively addressed at the point where continuity is managed; the ward. This suggests a model of nursing care that respects the nurse's relationship with the patient and therefore an

understanding by managers of the effects of disrupted continuity on the relationship and therefore potentially on patient outcomes.

Clinical Supervision

In addition to these building blocks of quality, clinical supervision was found to have a small positive influence on role support. The magnitude of this influence is in contrast to previous work that found it to be a major supportive factor for nurses in mental health and other settings (Butterworth, et al., 1997; Hyrkas, 2005; Teasdale, et al., 2001; White, et al., 1998). It may be that the finding in this study is an artefact of the dichotomous measurement approach that did not discriminate between the components of clinical supervision and did not collect associated data such as the length of time in receipt of supervision or the characteristics of the supervisor. Research that has obtained more detail in regard to supervision has established links between the type, frequency and outcomes of the process. For example, in the United Kingdom, nurses receiving clinical supervision over a longer period reported increased benefits (Bowles & Young, 1999).

Clinical supervision was also hypothesised to have an effect both on role support and role competency, particularly through its educative component (Proctor, 1986). However, the factor had a positive effect on role support but not on role competency. Although it cannot be ascertained without more detailed information, this finding may be reflective of the nature of supervision received by respondents. That is, they may be in receipt of supervision that has an emphasis on support rather than education. It is also feasible that respondents only identified the supportive aspects of clinical supervision, or that there was little in the way of a formative component, as found by Davey et al. (2006). Further, more detailed examination of this link is warranted, in order to identify the various aspects that influence the nurse's role competency and role support.

Skill Mix

The proportion of registered nurses (RN) on the ward was hypothesised to be a positive influence on role support as it reduced disruption to nursing care and provided access to supportive colleagues. This factor has been consistently linked to positive patient and nurse outcomes in general nursing (Kane, et al., 2007) but not studied in mental health. Contrary to expectations this factor was found to be a negative influence on role support. This finding is not readily explained.

It is possible that the expected support from RN colleagues is not evident in this sample, or that it has an inverse effect of unknown aetiology, such as the effect noted by McCloskey and Diers (2005) in New Zealand where the combined effect of richer skill mix, lower staffing and disrupted work environments was linked to poorer patient outcomes. Alternatively, this finding may be a consequence of the small sample size, or of the clustering effect of skill mix within wards in this sample. It may also be that this factor should be reconceptualised for application in mental health. Alternative measurements such as nurse-physician ratio or psychologists per nurse have been applied in related settings, reflecting the multidisciplinary approach to care in this field (Halsteinli, et al., 2008; Hughes, et al., 2008). Indeed, a study in outpatient mental health care associated better patient outcomes with a greater proportion of nurses (Halsteinli, et al., 2008). In the light of this finding, and in consideration of the body of evidence regarding this factor in general nursing , the concept of skill mix in inpatient mental health requires further examination.

Role support was a contributor to therapeutic commitment, both directly and through role competency. This indicates that actions that improve support will act not only to improve nurses' perceived adequacy and legitimacy in the role, but more immediately on their capacity to engage therapeutically. In the present study, nurse's perception of role support was most strongly influenced by the foundations of quality nursing. Also, although clinical supervision was found to be less influential, it remains a supportive process for nurses and was a positive influence on perceived support. Together, these findings suggest that services should examine the support provided to clinical nurses, particularly the nursing foundations for quality of care and clinical supervision. This examination should be undertaken with a view to improving access and engagement in these supportive activities. Services therefore need to examine supportive aspects of the work environment in mental health such as continuity of care, improved access to preceptorship, continued education and clinical supervision.

Non-significant Factors

In addition to those factors examined above, nurse qualifications, nurse-doctor relationships, staffing, patient turnover and the proportion of voluntary patients were found to be of very low strength or not statistically significant. Although therefore not found to be influential in regard to therapeutic commitment, these elements were derived from previous research and bear further examination.

Nurse Qualifications

The qualifications of a nurse did not influence role competency as hypothesised. This may be an indication that postgraduate education is not imbuing students with sufficient or appropriate interpersonal skills, or at least that it is inconsistent in this regard. If this is the case it supports earlier suggestions that reform in undergraduate nursing education, specifically the dilution of mental health content and clinical experience, has left postgraduate education to start from a different baseline (Happell, 1998a; Hayman-White, et al., 2007) and therefore with a more difficult task in developing these skills. It may also be a consequence of course content that does not provide opportunity for supported experience aimed at developing strong interpersonal skills. Although without a detailed evaluation of the courses it is not possible to determine the validity of this claim.

Collegial Nurse – Doctor Relations

The hypothesised link from collegial nurse-doctor relationships to role support was removed from the model. Positive relationships between nurses and doctors have been found to be significant in international (Armstrong, et al., 2009; Budge, et al., 2003) and Australian general nursing research (Duffield, et al., 2007). In addition, this factor has been identified as an important aspect of the work environment in mental health settings (Cleary, et al., 2005; White & Roche, 2006). As described above, this construct was also found to score highly in the present study in comparison to magnet hospitals in the United States, indicating positive relationships. An initial consideration was that this finding was an artefact of the high mean score, the range and standard deviation were similar to that of other domains of the NWI-PES (Table 14, page 111), thereby making this unlikely. It may be speculated that the absence of the expected effect of this factor is a consequence of overall good relationships that are not perceived to influence support. Further study of the link between interdisciplinary relationships and support may provide illumination.

Staffing and Resource Adequacy

The two constructs that measured staffing and resource adequacy in the current study were also found to be insignificant. This contrasts with a considerable body of research in general nursing (Kane, et al., 2007; Lankshear, et al., 2005) that has found staffing to be important in nurse and patient outcomes. The staffing variable captured from the ward roster data was aggregated across the sample period for each ward. It is therefore possible that the removal of this factor in this study is an effect of the small ward sample. However, another

ward characteristic, skill mix, was retained, negating this possibility. In addition, similar to collegial relationships, the NWI-PES domain of *Staffing and Resource Adequacy* was reported more positively than in previous Australian research, indicating that nurses in this sample considered staffing to be adequate. In the light of this positive perception of staffing adequacy, the findings here may indicate that staffing is indeed adequate and that therefore, as suggested by the overall assessment of the present model, other individual and environmental factors are substantially more influential. Given the considerable body of research in general nursing that has found this factor to be important, further examination of staffing and its relationship to nurses and patients in mental health is justified.

Patient Turnover & Voluntary Patients

Finally, two factors believed to be direct influences on therapeutic commitment, the proportion of voluntary patients and the movement of patients on and off the ward, were not upheld. The latter finding is in contrast with the mental health literature that identified this as a potential impediment to the nurse-patient relationship (Cleary, 2004; Cleary & Edwards, 1999) and the general nursing studies that have noted an impact on workload (Rimar & Diers, 2006; Unruh & Fottler, 2006). This may be related to the overall low rate of patient turnover in this study, or to other factors such as a static level of therapeutic commitment towards patients who are admitted regularly. For example, nurses may develop a continuous relationship with patients who have regular admissions over time (Wierdsma, et al., 2009), or nurses may pre-judge patients who are admitted frequently (Forsyth, 2007). In both cases it could be suggested that the nurse's level of commitment to the relationship may not change. The potentially complex nature of this variable in regard to known patients needs to be considered in future research.

The proportion of voluntary patients on a ward was applied in this study as a proxy measure of acuity. It was believed that the patient's mental state, reflected in their legal status, may influence the nurse's capacity to engage. It may be speculated that this proxy measure is not linked to mental state, or simply that it does not influence therapeutic commitment. Further research is required to validate this factor, or to establish an alternative measure that reflects the influence of the patient on the ability and willingness of the nurse to engage therapeutically.

In summary, in this study, therapeutic commitment, the *necessary conditions* for an effective therapeutic relationship described by Rogers (1957) was influenced by many of the

environmental factors believed to do so. The nurse's feeling of legitimacy in the role of nurse and their perception of their own knowledge and skills relevant to mental health were the strongest positive influences on this factor, in addition to the support they received. These factors were increased by their access to continued education and preceptors, continuity of care, their involvement in hospital governance, their access to responsive nursing management, clinical supervision, and the nurse's years of experience in mental health. The proportion of RNs on the ward and nursing leadership unexpectedly acted as negative influences and a number of factors believed to be significant were not supported.

7.3. Limitations

This study has contributed significant new knowledge to the understanding of the influences of the work environment on the nurse's ability and willingness to engage in the therapeutic relationship. However, it has several limitations, including the size and nature of the sample, assumptions of model testing, some aspects of data collection and the lack of detailed patient characteristics.

The most apparent limitation was the sample size of 76 nurses and six wards. The underestimation of strength and significance is a known issue with small samples in PLS path modelling (Hsu, et al., 2006). In order to limit the underestimation of path coefficients in the case of small samples, the literature suggests that factor loadings should be above 0.8 (Cassel, et al., 1999). However in this study many loadings were lower than this figure. Although a conservative approach was taken in this regard, the removal of a number of factors and paths from the model may have been a consequence of this issue.

Similarly, it was not possible to adopt the procedure used to validate models in many studies employing path modelling, through splitting the sample and re-analysis (Maruyama, 1998). This approach essentially provides two samples on which to verify the analysis, and could be taken with a larger sample that was more representative of the population. In addition, it was not possible to examine possible interaction effects such as the combination of staffing and skill mix. The modelling of interaction effects with larger samples may provide further insight into the various relationships (Chin, et al., 2003).

Also related to sample size was the potential issue of a highly skewed distribution of the dependent variable (Qureshi & Compeau, 2009). However, in this study each of the three constructs of the MH-MAPP model were found to be normally distributed or only mildly

skewed. It should also be noted that much of the PLS-PM literature considers the process to be 'distribution free' (Chin, 1998; Esposito-Vinzi, et al., 2008).

In addition to overall size, the sample varied from population data in several ways. In particular there were fewer part time RNs and respondents were much younger than the NSW and Australian averages. Also, the mean years of experience of the sample was only 8.2 years (6 years median). Together these factors suggest a conservative approach be taken to a broad application of the findings, particularly in regard to the influence of experience.

The sample size, together with the dearth of previous research in the field, did not permit comparison of alternative models as undertaken in other PLS-PM research (for example Lings & Owen, 2007). The inclusion of additional constructs into the model, the substitution of those present with others, or the inclusion of additional paths, is dependent on the development of sufficient theory or research evidence to permit such alterations. This is not yet the case in mental health.

The nature of the sample, with data collected from the ward and individual nurses, was also an issue. The wards may have different organisational environments and cultures, leading to a clustering effect of the staffing, skill mix and patient variables. In similar studies of the nursing work environment, multilevel or hierarchical modelling has been used for analysis of similar data (Duffield, et al., 2007; Goldstein, 2003; O'Brien-Pallas, et al., 2004), permitting the separation of ward and individual effects. The multilevel approach was not possible in this study as the small number of wards did not provide sufficient statistical power and it was not possible to expand the sample within an appropriate timeframe and current resources.

A more general issue was identified in connection to the method of analysis. The model was extended from the core framework of three constructs to a more complex model with 15 latent variables and 18 paths, based on research from a variety of fields. This model suggested causal relationships although PLS-PM cannot confirm the exogenous elements as causative. In common with other path modelling procedures therefore, although it is plausible that the factors in the ward environment predict the outcomes measured, a concrete determination cannot be made from the statistical analysis.

In relation to the instruments used in this study, both showed sound psychometric properties overall. However, it was noted that some items correlated highly with domains other than that suggested in the literature, and factor loadings were low in some cases. In

addition, the terminology used in items of the NWI-PES may not be ideal in Australian mental health services. In particular there is potential for the term 'physician' to be interpreted as a non-mental health doctor. Also, during the model testing process, several factors relevant in general nursing were removed. This may be indicative of a different response to these factors in mental health, a consequence of the small sample size, or of additional unknown factors that influence nurses' therapeutic commitment. Additional testing with a larger sample may clarify these issues.

There was a potential for mono-method bias as nurse data were collected using only the nurse survey (Burns & Grove, 2005). However, ward data were collected using an alternative approach, alleviating this concern somewhat. Future studies may be able to measure these and other variables using a wider range of methods.

Finally, limited patient characteristics were included due to concerns over identifiability. The inclusion of variables such as diagnosis may have provided a more meaningful patient characteristic that influenced nurse attitudes.

In summary, several limitations of the study have been noted. Foremost of these is the small sample size. This may explain the non-significance of some relationships and the unexpected effects of leadership and skill mix (Marcoulides, Chin, & Saunders, 2009). In addition, ward numbers were insufficient to examine the clustering effect of data at this level. The sample size did not permit approaches such as testing alternative models or validating the current one through splitting the sample. Also, only one proxy measure of patient acuity was available to the study, later found to be non-significant. Finally, the sample was not similar in all respects to the NSW and Australian population of nurses in mental health and the findings should be generalised with this in mind.

7.4. Future Directions in Mental Health

Despite these limitations, this study has made a substantial contribution to knowledge in this relatively unstudied area. It has expanded the understanding of the influence of work environment on nursing work in mental health settings and raised issues that would benefit from further discussion. Importantly, it has established that the work environment impacts on nurses' ability and willingness to engage in the therapeutic relationship, the most critical aspect of the nurse's role in mental health and the mechanism by which positive patient outcomes can be achieved. The relative importance of the measured components of that

environment have been identified, including suggested avenues for future exploration. These findings, considered in the context of the Australian health system and other research, provide the basis for a number of suggestions in regard to future workplace support and development, continued education and research.

Support was identified as an important aspect of the work environment that influenced therapeutic commitment directly and through role competency. There are a number of aspects to that support, including professional development, preceptorship of new staff, continuity of care and clinical supervision. Nurses in mental health need improved access to continued education. Incentive programmes such as that implemented in NSW have had limited success in terms of the numbers of staff participating (Pagnini, 2005) and nurses continue to identify barriers to participation such as release from the workplace (White & Roche, 2006).This suggests that innovative approaches may need to be developed at the ward level to facilitate access and attendance, in addition to the financial support available in current programmes.

Improvements to preceptorship programmes will enhance support through providing new graduate nurses with access to experienced colleagues. In addition, consideration must be given to the training and support of preceptors. Australian research has indicated that nurses who have participated in such training reported they were more positive towards the role and therefore considered themselves more likely to provide it effectively (Charleston & Happell, 2004).

Another aspect of support is leadership. In the present study, this factor was not found to be a significant influence on role support and was a negative influence on role competency. Research elsewhere has established this factor as important in nurse and patient outcomes (Laschinger & Leiter, 2006; Leiter & Laschinger, 2006) and the issue has been raised in numerous Australian reports (Clinton, 2000; NSW Legislative Council Select Committee on Mental Health, 2002; NSW Mental Health Sentinel Events Review Committee, 2005). This suggests further research is required to establish the nature of this concept in mental health. In particular, research must be undertaken that seeks to determine if the unexpected findings of this study are a consequence of nurses' contrasting perceptions of management in mental health and general hospital settings.

In addition, in the light of these reports, consideration must be given to improving ward leadership in Australian mental health settings. This may be improved through a focused

approach intended to provide the ward manager with necessary skills to appropriately support staff. This approach, in combination with improved participation in hospital affairs, may also empower managers to address issues such as the facilitation of continuity and nursing models of care (Duffield, et al., 2009a; Duffield, et al., 2009b).

Health professionals of all disciplines have reported difficult relationships in mainstreamed mental health services (Mental Health Council of Australia, 2005), which supports early suggestions by mental health nurses (Clinton, 2000) that mental health services in general hospitals are undervalued. The suggestion that this is an issue for nurses in mental health was reflected in this study through the influence of the nurse's participation in hospital affairs on role competency. The active development of pathways that facilitate the involvement of nurses in the governance of general hospitals must be a priority. This would include the creation of career development opportunities and mechanisms that facilitate their uptake. In addition, given the lack of research in this regard, assessments should be made of the scope and nature of this problem. Effective and targeted approaches may then be developed and evaluated.

Improved engagement of mental health nurses in the governance of the hospital will also serve to improve the understanding of mental health service delivery and the model of care. However, programmes that provide mental health nurses with the opportunity to articulate their care approach and the emphasis on the therapeutic relationship may be developed to address this issue. This approach could be developed at the individual hospital level and would have the added benefit of developing relationships between mental health and general staff. For example, the establishment of multidisciplinary case reviews that involve nurses and other staff from a range of clinical departments would both enhance understanding across the hospital and potentially improve clinical management. Anecdotally, arrangements such as these are in place in some NSW hospitals, particularly between mental health and emergency departments (E. Chandler, personal communication, 2005). Formal evaluation of these programmes would add considerably to the understanding of the drivers and outcomes of participation in hospital affairs.

Clinical supervision, although not a strong influence on role support compared to other factors, was positive. Studies have indicated the value of this practice in regard to nurse's job satisfaction, burnout and stress (Hyrkas, 2005). Mental health services in NSW have indicated that all nurses have access to supervision but nurses report barriers to participation (White &

Roche, 2006). Similar to improved access to continued education, innovative programmes at a ward level should be developed to enable nurses to undertake this process.

However, clinical supervision is not only a supportive process (Proctor, 1986). The implementation of more accessible programmes should be accompanied by ongoing evaluation of the details and effects. For example, in the United Kingdom, research has identified issues in relation to the development of skills during supervision or that the normative aspect was considered more important by participants (Bowles & Young, 1999; Davey, et al., 2006). This evaluation should therefore explore the emphasis placed on these components and ultimately their relationship with patient outcomes.

Also in regard to clinical supervision, training and support programmes should be established for supervisors. This has been identified as an important aspect of effective supervision (Hyrkas, et al., 2006) and is similar to the improvements proposed to preceptorship programmes.

Although nursing qualifications were not found to be significantly related to a nurse's role competency and therapeutic commitment in this study, nurse experience was supported. It is not possible, or advisable, to recommend that wards employ only experienced nurses. However, positive experience is gained most effectively when supported by appropriate encouragement, realistic interpretation and access to role models (Bandura, 1994). These aspects may be addressed through workplace access to expert and experienced nurses via participation in clinical supervision, effective leadership and opportunities for professional and career development. Similarly, in order to develop appropriate mental health experience in undergraduate nursing courses, improved access to expert nurses in both clinical and academic environments could be established and evaluated. Indeed, this was intimated in the recommendations of the Mental Health Nurse Education Taskforce (Mental Health Nurse Education Taskforce, 2008).

Reports and research that have examined the preparation of nurses to work in mental health must also be considered. Notwithstanding the findings of the Mental Health Nurse Education Taskforce (Mental Health Nurse Education Taskforce, 2008) that notes an increase in content hours, research suggests that preparation still falls short of that necessary to fulfil the nurse's role and focus on the therapeutic relationship (McCann, et al., 2009; Wynaden, et al., 2000). This concern may be addressed through continued improvement of the mental

health content of undergraduate programmes, including, as has been proposed, more effective clinical learning experiences (Mental Health Nurse Education Taskforce, 2008). In addition, detailed assessments of the capacity of nursing graduates to engage in the therapeutic relationship should be undertaken. This will provide a basis on which to continue the improvement of pre-registration courses and to better integrate under- and post-graduate mental health subject content. Similar assessments of the capacities of those completing post-graduate mental health nursing courses should also be undertaken.

In the current study skill mix was a negative influence on role support, in contrast to substantial research evidence in other settings (Kane, et al., 2007; Lankshear, et al., 2005). Due to this weight of evidence, and the small sample size of this study, larger studies applying this factor would provide more information. However, it is also possible that skill mix, as articulated here, may not be relevant in a multidisciplinary field such as mental health, and alternative metrics such as psychologists per nurse or nurse-physician ratio used by Halsteinli et al. (2008) may be more appropriate.

Patient characteristics were not a significant influence on therapeutic commitment in this study. Research should be undertaken to establish meaningful and readily calculated patient characteristics that may influence the capacity of the nurse to engage in a therapeutic nurse-patient relationship. Most states in Australia now collect standardised outcome measures for all patients in contact with mental health services (Chipps, Raphael, & Coombs, 2002; Pirkis, et al., 2005). An opportunity exists to examine these data as a first step to establishing the calculation of variables that may confound the relationship.

In addition to the application of the findings of this study to the operation of inpatient mental health services, education and research, several observations may be made in regard to the techniques applied herein. The method used for model testing in the present study, partial least squares path modelling, provided a detailed and rigorous approach to the analysis of data from this small sample. This technique also provided clear findings in regard to the significance, strength and direction of the paths in the model. Application of this approach to future research in this area should be considered.

Both instruments used in this research displayed acceptable psychometric properties. The study validated the application of the NWI-PES in mental health. All domains of this instrument showed satisfactory validity and reliability measures in the context of PLS-PM. Although one

domain exhibited a lower than ideal Cronbach's α, this may be an effect of the small sample size in this study. Future research using the NWI-PES and a larger sample of nurses may provide confirmation of these findings. In addition, a replication of the work of Lake and Friese (2006) that established a delineation for domains to be considered positive, should be undertaken with a larger sample of nurses in mental health. That study could provide further validation of the domains of the NWI-PES and identify scores that would be considered positive in mental health.

The MHPPQ also showed desirable psychometrics. However, therapeutic commitment displayed a high correlation with role competency, suggesting that further testing and development of this instrument in this population is warranted.

Finally, given the statistical significance and strength of most constructs and relationships in the extended model, its application to a larger sample of nurses in mental health should be considered. This will enable further assessment of the instruments, permit the examination of the clustering effect of wards, and may clarify the unexpected findings for leadership and skill mix. In addition, this may permit a multilevel modelling approach and the opportunity to both validate the model and test alternatives.

7.5. Conclusion

This study has accentuated the importance of the work environment in mental health settings. It has established associations between a number of aspects of this work environment and the therapeutic commitment of nurses. The commitment of nurses in this clinical setting to engage in therapeutic relationships is fundamental to their role. In view of research in similar fields, this ability and willingness to engage therapeutically can have a significant effect on patient outcomes. Consumers have identified, anecdotally and in research, that they value sound therapeutic relationships with nurses. Improved therapeutic commitment will increase the ability of nurses to engage with patients and to maintain a patient-centred approach to care. With increasing requirements for mental health services, it is essential to ensure that the care provided to mental health patients is enhanced. Understanding the influences on this care, identified in this study, is a critical first step.

The findings of this study have primary application to the operation of mental health services in general hospitals, where many of the recommendations made above can be applied in order to increase nurses' commitment and thereby enhance therapeutic relationships. Of

note, the importance of support to this workforce is apparent. This relates particularly to structured mechanisms such as access to continued education and clinical supervision. In addition, the strong contribution of nurses' participation in policy making and career development indicates the importance of involving mental health staff in mainstream hospital governance. Together with the important influence of the individual's experience in the area this suggests that a combination of facilitated participation and support is a necessary component of improved relationships with patients.

In addition to its application to mental health organisations, this study notes the importance of improving nurses' preparation to work in this clinical area. As noted in previous studies and reports, and in consideration of the aforementioned increased requirements for mental health care, it is necessary to continue to improve the mental health content of under-graduate courses and to enhance clinical learning both in that context and in post-graduate and continued education.

As well as the application to current organisations and education, this study also provides a basis on which to build future research. This should occur in a number of ways, including the replication of this study with a larger sample of mental health nurses. This would facilitate the confirmation of the elements of the individual and work environment identified in this study. Also, on the basis of the present study, a number of factors that were identified in the broader literature require more detailed examination in mental health settings. For example, it is important to explore the nature and importance of mental health nursing leadership in mainstreamed services, to establish the importance of skill mix as the proportion of RNs or as some other measure and to investigate the influence of interdisciplinary relationships. In addition, studies to determine additional or alternative measures of the environment that are sensitive and appropriate in mental health settings are necessary. Finally, measures of patient outcomes that are readily obtained and linked to nursing work and the work environment are essential in order to effectively articulate the influence that nursing care in mental health has on patient outcomes.

In conclusion, this study is the first to link aspects of the work environment, patient and nurse to an established framework of therapeutic commitment in the inpatient mental health setting. The findings support many of the relationships between variables that have been established in general nursing research and have identified a number of areas in which mental health settings are evidently different. This provides a foundation on which to undertake

further work to improve the nursing work environment and to thereby improve patient outcomes.

8. Appendices

Appendix A: Ward Profile

Appendix B: Nurse Survey

Appendix C: Participant Information Sheet

Appendix D: Human Research Ethics Approval

Appendix E: Path Modelling Iterations

Appendix F: Paths in the Model

Appendix G: Latent Variable Indicators

8.1. Appendix A: Ward Profile

Mental Health Nursing Work Environment Study

UNIVERSITY OF TECHNOLOGY SYDNEY

Centre for Health Services Management
PO Box 123, Broadway NSW 2007

Unit Profile & Staffing

Unit Code:	Secure Unit:	Yes / No	ALOS (Days):	Beds:

Date	Patient Census #				Number of Staff												Clinical Leader
	Number Patients		Adm. or T/F IN	D/C or T/F OUT	# RNs				# ENs				# other (AIN/ PCAs)				
	Invol.	Vol.			Agn	Cas	PT	FT	Agn	Cas	PT	FT	Agn	Cas	PT	FT	
1																	Yes / No
2																	Yes / No
3																	Yes / No
4																	Yes / No
5																	Yes / No
6																	Yes / No
7																	Yes / No
8																	Yes / No
9																	Yes / No
10																	Yes / No
11																	Yes / No
12																	Yes / No
13																	Yes / No
14																	Yes / No

8.2. Appendix B: Nurse Survey

Mental Health Nursing Work Environment Study

UNIVERSITY OF TECHNOLOGY SYDNEY

Centre for Health Services Management
PO Box 123, Broadway NSW 2007

Nurse Survey

Unit Code:	Date:

This study seeks to explore in detail the relationship between characteristics of the work environment and aspects of the nurse's relationship with mental health patients.

There are three parts to this questionnaire:

1. The Nursing Work Index – Revised
2. The Mental Health Problems Perception Questionnaire
3. Information about your current position, experience in nursing, qualifications, clinical supervision, and demographics

Some other information is collected regarding staffing on your unit and characteristics of the ward environment.

All aspects of the study, including results, will be kept strictly confidential and only the researchers will have access to information. No personal identification will appear on any of the forms. A unique identifier (Unit Code) is used to link ward characteristics, such as nurse to patient ratios, to responses to this survey. This will enable comparisons to be made between different characteristics. No individual, unit or hospital will be identifiable in any publication or presentation that may be developed from this study.

Please take the time to read each question carefully and indicate your answer clearly. Also, please note that the response scale changes from page 5. It will take approximately 15 minutes to complete this survey.

Thank you for agreeing to participate.

Mental Health Nursing Work Environment Study

UNIVERSITY OF TECHNOLOGY SYDNEY

Centre for Health Services Management
PO Box 123, Broadway NSW 2007

Nursing Work Index – Revised

	For each item in this section, please indicate the extent to which you agree that the following items ARE PRESENT IN YOUR CURRENT JOB. Indicate your degree of agreement by circling the appropriate number.	**Strongly Agree**	**Somewhat Agree**	**Somewhat Disagree**	**Strongly Disagree**
A.1	Adequate support services allow me to spend time with my patients.	1	2	3	4
A.2	Doctors and nurses have good working relationships.	1	2	3	4
A.3	A good orientation program for newly employed nurses.	1	2	3	4
A.4	A supervisory staff that is supportive of the nurses.	1	2	3	4
A.5	A satisfactory salary.	1	2	3	4
A.6	Nursing controls its own practice	1	2	3	4
A.7	Active staff development or continuing education programs for nurses.	1	2	3	4
A.8	Career development/clinical ladder opportunity.	1	2	3	4
A.9	Opportunity for nurses to participate in policy decisions.	1	2	3	4
A.10	Support for new and innovative ideas about patient care.	1	2	3	4
A.11	Enough time and opportunity to discuss patient care problems with other nurses.	1	2	3	4
A.12	Enough registered nurses on staff to provide quality patient care.	1	2	3	4
A.13	A nurse manager or immediate supervisor who is a good manager and leader.	1	2	3	4
A.14	A senior nursing administrator who is highly visible and accessible to staff.	1	2	3	4
A.15	Flexible or modified work schedules/rosters are available.	1	2	3	4
A.16	Enough staff to get work done.	1	2	3	4
A.17	Freedom to make important patient care and work decisions.	1	2	3	4

Nurse Survey v1.0 2 of 8 20-Jun-05

Mental Health Nursing Work Environment Study

UNIVERSITY OF TECHNOLOGY SYDNEY

Centre for Health Services Management

PO Box 123, Broadway NSW 2007

Nursing Work Index – Revised

	For each item in this section, please indicate the extent to which you agree that the following items ARE PRESENT IN YOUR CURRENT JOB. Indicate your degree of agreement by circling the appropriate number.	**Strongly Agree**	**Somewhat Agree**	**Somewhat Disagree**	**Strongly Disagree**
A.18	Praise and recognition for a job well done.	1	2	3	4
A.19	The opportunity for nurses to consult with clinical nurse specialists or expert nurse clinicians/educators.	1	2	3	4
A.20	Good working relationships with other hospital departments or programmes.	1	2	3	4
A.21	Not being placed in a position of having to do things that are against my nursing judgement.	1	2	3	4
A.22	High standards of nursing care are expected by the administration.	1	2	3	4
A.23	A senior nursing administrator equal in power and authority to other top level hospital executives	1	2	3	4
A.24	A lot of team work between nurses and doctors.	1	2	3	4
A.25	Doctors give high quality medical care.	1	2	3	4
A.26	Opportunities for advancement.	1	2	3	4
A.27	Nursing staff are supported in pursuing degrees in nursing.	1	2	3	4
A.28	A clear philosophy of nursing that pervades the patient care environment.	1	2	3	4
A.29	Nurses actively participate in efforts to control costs.	1	2	3	4
A.30	Working with nurses who are clinically competent.	1	2	3	4
A.31	The nursing staff participate in selecting new equipment.	1	2	3	4
A.32	A nurse manager or supervisor who backs up the nursing staff in decision making, even if the conflict is with a doctor.	1	2	3	4
A.33	Administration that listens and responds to employee concerns.	1	2	3	4
A.34	An active quality assurance program.	1	2	3	4

Mental Health Nursing Work Environment Study

UNIVERSITY OF TECHNOLOGY SYDNEY

Centre for Health Services Management
PO Box 123, Broadway NSW 2007

Nursing Work Index – Revised

	For each item in this section, please indicate the extent to which you agree that the following items ARE PRESENT IN YOUR CURRENT JOB. Indicate your degree of agreement by circling the appropriate number.	**Strongly Agree**	**Somewhat Agree**	**Somewhat Disagree**	**Strongly Disagree**
A.35	Nurses are involved in the internal governance of the hospital (e.g., practice and policy committees).	1	2	3	4
A.36	Collaboration between nurses and doctors.	1	2	3	4
A.37	A preceptor program for newly hired RNs.	1	2	3	4
A.38	Nursing care is based on a nursing rather than a medical model.	1	2	3	4
A.39	Nurses have the opportunity to serve on hospital and nursing committees.	1	2	3	4
A.40	The contributions that nurses make to patient care are publicly acknowledged.	1	2	3	4
A.41	Nurse managers consult with staff on daily problems and procedures.	1	2	3	4
A.42	A work environment that is pleasant, attractive and comfortable.	1	2	3	4
A.43	Opportunity to work on a highly specialised patient care unit.	1	2	3	4
A.44	Written up-to-date nursing care plans for all patients.	1	2	3	4
A.45	Patient care assignments that foster continuity of care (i.e. the same nurse cares for the patient from one day to the next).	1	2	3	4
A.46	Nurses do not have to float from their designated unit.	1	2	3	4
A.47	Nurses actively participate in developing their own working schedule/roster.	1	2	3	4
A.48	Each patient care unit determines its own policies and procedures.	1	2	3	4
A.49	Working with experienced nurses who "know" the hospital.	1	2	3	4

Please note the response scale changes from the next page

Nurse Survey v1.0 4 of 8 20-Jun-05

Mental Health Nursing Work Environment Study

UNIVERSITY OF TECHNOLOGY SYDNEY

Mental Health Problems Perception Questionnaire

Centre for Health Services Management
PO Box 123, Broadway NSW 2007

For each item in this section, please indicate the extent to which you agree with the statement, by circling the appropriate number at right. *Please note the response scale changes for this section*		Strongly Disagree	Quite Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Quite Strongly Agree	Strongly Agree
B.1	I feel that I know enough about the factors which put people at risk of mental health problems to carry out my role when working with this client group.	1	2	3	4	5	6	7
B.2	I feel I know how to treat people with long-term mental health problems.	1	2	3	4	5	6	7
B.3	I feel that I can appropriately advise my patients about mental health problems.	1	2	3	4	5	6	7
B.4	I feel that I have a clear idea of my responsibilities in helping patients with mental health problems.	1	2	3	4	5	6	7
B.5	I feel that I have the right to ask patients about their mental health status when necessary.	1	2	3	4	5	6	7
B.6	I feel that my patients believe I have the right to ask them questions about mental health problems when necessary.	1	2	3	4	5	6	7
B.7	I feel that I have the right to ask a patient for any information that is relevant to their mental health problem.	1	2	3	4	5	6	7
B.8	If I felt the need when working with patients with mental health problems I could easily find someone with whom I could discuss any difficulties I might encounter.	1	2	3	4	5	6	7
B.9	If I felt the need when working with someone with mental health problems I could easily find somebody who would help me clarify my personal difficulties.	1	2	3	4	5	6	7

Mental Health Nursing Work Environment Study

UNIVERSITY OF TECHNOLOGY SYDNEY

Mental Health Problems Perception Questionnaire

Centre for Health Services Management
PO Box 123, Broadway NSW 2007

For each item in this section, please indicate the extent to which you agree with the statement, by circling the appropriate number at right. *Please note the response scale changes for this section*		Strongly Disagree	Quite Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Quite Strongly Agree	Strongly Agree
B.10	If I felt the need I could easily find someone who would be able to help me formulate the best approach to a patient with mental health problems.	1	2	3	4	5	6	7
B.11	I am interested in the nature of mental health problems and the treatment of them.	1	2	3	4	5	6	7
B.12	I feel that I am able to work with patients with mental health problems as effectively as other patients who do not have mental health problems.	1	2	3	4	5	6	7
B.13	I want to work with patients with mental health problems.	1	2	3	4	5	6	7
B.14	I have the skills to work with patients with mental health problems.	1	2	3	4	5	6	7
B.15	I feel that I can assess and identify the nursing problems of patients with mental health problems.	1	2	3	4	5	6	7
B.16	I feel that there is nothing I can do to help patients with mental health problems.	1	2	3	4	5	6	7
B.17	I feel that I have something to offer patients with mental health problems.	1	2	3	4	5	6	7
B.18	I feel that I have much to be proud of when working with patients with mental health problems.	1	2	3	4	5	6	7

Mental Health Nursing Work Environment Study

UNIVERSITY OF TECHNOLOGY SYDNEY

Mental Health Problems Perception Questionnaire

Centre for Health Services Management
PO Box 123, Broadway NSW 2007

For each item in this section, please indicate the extent to which you agree with the statement, by circling the appropriate number at right. *Please note the response scale changes for this section*		Strongly Disagree	Quite Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Quite Strongly Agree	Strongly Agree
B.19	I feel that I have a number of good qualities for work with patients with mental health problems.	1	2	3	4	5	6	7
B.20	In general one can get satisfaction from working with patients with mental health problems.	1	2	3	4	5	6	7
B.21	In general it is rewarding to work with patients with mental health problems.	1	2	3	4	5	6	7
B.22	I often feel uncomfortable when working with people with mental health problems.	1	2	3	4	5	6	7
B.23	In general I feel that I can understand patients with mental health problems.	1	2	3	4	5	6	7
B.24	On the whole I am satisfied with the way I work with patients with mental health problems.	1	2	3	4	5	6	7
B.25	When working with patients with mental health problems I receive adequate supervision from a more experienced person.	1	2	3	4	5	6	7
B.26	When working with patients with mental health problems I receive adequate ongoing support from colleagues.	1	2	3	4	5	6	7
B.27	Caring for people with mental health problems is an important part of a nurse's role.	1	2	3	4	5	6	7

(Lauder, Reynolds, Riley & Angus 2000, used with permission)

Mental Health Nursing Work Environment Study

UNIVERSITY OF TECHNOLOGY SYDNEY

Centre for Health Services Management
PO Box 123, Broadway NSW 2007

Nurse Survey

C.1	What is your **gender**?	❑ Female ❑ Male
C.2	What is your **age**?	_____years
C.3	What is your **employment status** at this hospital?	*(Tick One)* ❑ Full time ❑ Casual ❑ Part time ❑ Agency
C.4	How many years have you worked as a **nurse?**	_____years _____ months
C.5	How many years have you worked as a nurse in **mental health/psychiatry?**	_____years _____ months
C.6	What is your **current** position?	*(Tick One)* ❑ Assistant in Nursing (AIN) ❑ Trainee Enrolled Nurse (TEN) ❑ Enrolled Nurse ❑ Registered Nurse ❑ Clinical Nurse Specialist ❑ Clinical Nurse Consultant ❑ Clinical Nurse Educator ❑ Nurse Educator ❑ Nurse Practitioner ❑ Nursing Unit Manager ❑ Nurse Manager ❑ Senior Nurse Manager ❑ Other:_____
C.7	What is your **highest nursing** educational qualification?	*(Tick One)* ❑ No Qualification ❑ AIN Certificate ❑ EN Certificate ❑ RN Hospital Certificate ❑ RN Diploma ❑ RN Degree ❑ Post-Basic Certificate ❑ Graduate Certificate ❑ Graduate Diploma ❑ Master of Nursing ❑ PhD Nursing
C.8	What is your highest qualification in **mental health**?	*(Tick One)* ❑ No Qualification ❑ EN MH Certificate ❑ RN Hospital Certificate ❑ Post-Basic Nursing Cert. ❑ Graduate Certificate ❑ Graduate Diploma ❑ Master of Nursing ❑ PhD Nursing ❑ Non-Nursing Qualification: _____
C.9	Are you **currently** in receipt of Clinical Supervision?	❑ Yes ❑ No

Are there any questions you intended to go back to? If so, please do so now.

Thank you for participating in this study

8.3. Appendix C: Participant Information Sheet

Mental Health Nursing Work Environment Study

Information Sheet

UNIVERSITY OF TECHNOLOGY SYDNEY
Centre for Health Services Management
PO Box 123, Broadway NSW 2007

Dear Colleague,

You have been invited to participate in the **Mental Health Nursing Work Environment Study**, being conducted by Professor Christine Duffield and Michael Roche (Doctoral Candidate) of the Centre for Health Services Management at the University of Technology, Sydney.

The purpose of this study is to explore the relationship of dimensions of the work environment to mental health nurses' therapeutic relationship with patients. The study will examine factors such as staffing, unit type, patient turnover, nursing autonomy, relationships with other professions, and control over practice. Information will be collected both by researchers on your unit during the 14-day period of the study, and by the survey outlined below.

If you agree to participate in the study, it will involve completion of the Nurse Survey. It takes approximately 15 mins to complete. Your participation is entirely voluntary and, if you choose not to participate in the study, you may do so without any penalty or prejudice.

All aspects of the study, including results, will be kept strictly confidential and only the investigators will have access to information. No personal identification will appear on any of the forms but the forms will be coded with a unique unit identifier that will enable linkage of unit and survey data. Individual nurses or units will not be identified in any report or presentation about the study. **If you would like to ask any questions or discuss difficulties that arise during the research study please contact Michael Roche (9514 9835).**

If you find that completion of the questionnaire leads makes you uncomfortable in any way, please seek the assistance of a professional counsellor such as that provided by your organisation's Employee Assistance Program.

Yours sincerely,

Professor Christine Duffield

NOTE: This study has been approved by the University of Technology, Sydney Human Research Ethics Committee. If you have any complaints or reservations about any aspect of your participation in this research which you cannot resolve with the researcher, you may contact the Ethics Committee through the Research Ethics Officer, Ms Susanna Davis (ph. 02 - 9514 1279 Susanna.Davis@uts.edu.au). Any complaint you make will be treated in confidence and investigated fully and you will be informed of the outcome.

8.4. Appendix D: Human Research Ethics Approval

UNIVERSITY OF TECHNOLOGY SYDNEY

19 July 2005

Professor Christine Duffield
CB08.02.11B
Centre for Health Services Management
UNIVERSITY OF TECHNOLOGY, SYDNEY

Dear Christine,

UTS HREC REF NO 2005-0079 – DUFFIELD, Professor Christine, (for ROCHE, Mr Michael, PhD student) - "The relationship between the work environment and therapeutic commitment in mental health nurses"

At its meeting held on 12/07/2005, the UTS Human Research Ethics Committee considered the above application, and I am pleased to inform you that ethics clearance has been granted subject to provision of a copy of the doctoral assessment and the revision of the consent form to identify Mr Roche as a doctoral student at UTS.

Your clearance number is UTS HREC REF NO. 2005-079A

Please note that the ethical conduct of research is an on-going process. The *National Statement on Ethical Conduct in Research Involving Humans* requires us to obtain a report about the progress of the research, and in particular about any changes to the research which may have ethical implications. This report form must be completed at least annually, and at the end of the project (if it takes more than a year). The Ethics Secretariat will contact you when it is time to complete your first report.

I also refer you to the AVCC guidelines relating to the storage of data, which require that data be kept for a minimum of 5 years after publication of research. However, in NSW, longer retention requirements are required for research on human subjects with potential long-term effects, research with long-term environmental effects, or research considered of national or international significance, importance, or controversy. If the data from this research project falls into one of these categories, contact University Records for advice on long-term retention.

If you have any queries about your ethics clearance, or require any amendments to your research in the future, please do not hesitate to contact the Ethics Secretariat at the Research and Commercialisation Office, on 02 9514 9615.

Yours sincerely,

Professor Jane Stein-Parbury
Chairperson, UTS Human Research Ethics Committee

8.5. Appendix E: Path Modelling Iterations

Model 1

Table 37 Convergent Validity: Correlation of Indicators & Latent Variables, NWI-PES (Model 1)

	Collegial Nurse-Doctor Relations	Nurse Manager Ability, Leadership, and Support of Nurses	Nurse Participation in Hospital Affairs	Nursing Foundations for Quality of Care	Staffing & Resource Adequacy
zsra1					0.706
zsra2					0.802
zsra3					0.825
zsra4					0.822
znfq1				0.435	
znfq2				0.650	
znfq3				0.599	
znfq4				0.433	
znfq5				0.280	
znfq6				0.635	
znfq7				0.310	
znfq8				0.263	
znfq9				0.596	
znha1			0.737		
znha2			0.305		
znha3			0.062		
znha4			0.616		
znha5			0.761		
znha6			0.419		
znha7			0.526		
znha8			0.629		
znml1		0.808			
znml2		0.730			
znml3		0.767			
znml4		0.843			
znpr1	0.824				
znpr2	0.894				
znpr3	0.906				

Correlation coefficients below 0.5 are underlined

Table 38 Convergent Validity: Correlation of Indicators & Latent Variables, MHPPQ (Model 1)

	Role Competency	Role Support	Therapeutic Commitment
zrc1	0.834		
zrc2	0.896		
zrc3	0.878		
zrc4	0.817		
zrc5	0.627		
zrc6	0.536		
zrc7	0.398		
zrc8	0.864		
zrc9	0.860		
zrs1		0.905	
zrs2		0.849	
zrs3		0.836	
zrs4		0.610	
ztc1			0.604
ztc2			0.341
ztc3			0.635
ztc4			0.370
ztc5			0.714
ztc6			0.732
ztc7			0.774
ztc8			0.741
ztc9			0.796
ztc10			0.327
ztc11			0.666
ztc12			0.670
ztc13			0.641
ztc14			0.642

Correlation coefficients below 0.5 are underlined

Table 39 Discriminant Validity: Cross-loadings of Indicators & Reflective Latent Variables, NWI-PES (Model 1)

	Collegial Nurse-Doctor Relations	Nurse Manager Ability, Leadership, and Support of Nurses	Nurse Participation in Hospital Affairs	Nursing Foundations for Quality of Care	Staffing & Resource Adequacy	Role Competency	Role Support	Therapeutic Commitment
zsra1	0.044	0.239	0.353	0.546	**0.706**	0.141	0.280	0.038
zsra2	0.144	0.344	0.262	0.575	**0.802**	0.066	0.294	-0.016
zsra3	0.130	0.165	0.230	0.458	**0.825**	-0.057	0.271	-0.091
zsra4	0.261	0.194	0.253	0.373	**0.822**	-0.052	0.278	-0.046
znfq1	0.251	0.510	*0.521*	**0.435**	0.391	-0.096	0.111	-0.116
znfq2	-0.150	0.078	0.360	**0.650**	0.294	0.116	0.427	0.182
znfq3	0.191	0.466	0.414	**0.599**	0.406	0.204	0.358	0.194
znfq4	0.096	0.300	0.300	**0.433**	0.415	0.027	0.170	-0.061
znfq5	0.166	*0.387*	0.341	**0.280**	0.293	-0.206	0.012	-0.094
znfq6	0.105	0.453	0.592	**0.635**	0.277	0.044	0.303	-0.023
znfq7	0.101	0.275	0.223	**0.310**	0.170	0.093	0.164	0.146
znfq8	0.064	-0.259	-0.022	**0.263**	0.109	0.094	0.164	0.169
znfq9	0.190	0.094	0.320	**0.596**	0.483	0.113	0.380	0.012
znha1	0.373	0.513	**0.737**	0.463	0.233	0.211	0.245	0.102
znha2	0.245	*0.532*	**0.305**	0.275	0.236	-0.015	0.148	0.024
znha3	0.207	*0.600*	**0.062**	0.091	0.290	-0.249	-0.098	-0.169
znha4	0.312	0.221	**0.616**	0.409	0.325	0.133	0.346	0.211
znha5	0.280	0.441	**0.762**	0.399	0.192	0.218	0.305	0.157
znha6	0.111	*0.605*	**0.419**	0.382	0.310	0.033	0.136	0.014
znha7	0.158	0.272	**0.526**	0.484	0.312	0.007	0.271	-0.082
znha8	0.213	0.217	**0.629**	0.468	0.244	0.099	0.280	0.075
znml1	0.410	**0.808**	0.402	0.285	0.206	-0.194	0.158	-0.130
znml2	0.139	**0.730**	0.445	0.460	0.368	-0.053	0.168	-0.070
znml3	0.392	**0.767**	0.367	0.263	0.209	-0.099	0.101	0.007
znml4	0.248	**0.844**	0.282	0.377	0.211	-0.202	0.145	-0.197
znpr1	**0.824**	0.308	0.263	0.141	0.148	-0.030	0.097	-0.048
znpr2	**0.894**	0.317	0.332	0.123	0.163	-0.116	0.069	0.095
znpr3	**0.906**	0.365	0.393	0.152	0.170	-0.133	0.107	0.038

Items **bold and underlined** are not the highest correlates
Items *italicised and underlined* are the highest correlates, but for a different latent variable

Table 40 Discriminant Validity: Cross-loadings of Indicators & Reflective Latent Variables, MHPPQ (Model 1)

	Collegial Nurse-Doctor Relations	Nurse Manager Ability, Leadership, and Support of Nurses	Nurse Participation in Hospital Affairs	Nursing Foundations for Quality of Care	Staffing & Resource Adequacy	Role Competency	Role Support	Therapeutic Commitment
zrc1	-0.139	-0.173	0.252	0.153	0.088	**0.834**	0.316	0.594
zrc2	-0.070	-0.192	0.162	0.057	0.000	**0.896**	0.242	0.611
zrc3	-0.139	-0.322	0.172	0.083	-0.064	**0.878**	0.244	0.517
zrc4	-0.048	-0.211	0.240	0.193	0.065	**0.817**	0.317	0.629
zrc5	-0.149	0.160	0.320	0.209	-0.075	**0.627**	0.305	0.451
zrc6	-0.102	0.076	0.142	0.234	0.075	**0.536**	0.323	0.499
zrc7	-0.145	0.087	0.125	0.054	-0.182	**0.398**	0.188	*0.403*
zrc8	-0.034	-0.159	0.226	0.203	0.129	**0.864**	0.284	0.618
zrc9	0.001	-0.285	0.214	0.080	0.048	**0.860**	0.397	0.701
zrs1	0.157	0.170	0.396	0.530	0.374	0.288	**0.905**	0.390
zrs2	0.021	0.094	0.275	0.452	0.283	0.360	**0.849**	0.342
zrs3	0.012	0.027	0.269	0.480	0.256	0.426	**0.836**	0.470
zrs4	0.133	0.283	0.525	0.350	0.216	0.158	**0.610**	0.195
ztc1	-0.032	-0.008	0.154	0.159	-0.002	0.488	0.275	**0.604**
ztc2	-0.085	0.003	-0.264	-0.230	-0.096	0.252	-0.003	**0.341**
ztc3	0.017	-0.104	-0.007	-0.016	-0.043	0.419	0.133	**0.635**
ztc4	0.167	0.081	0.242	0.177	0.134	0.269	0.136	**0.370**
ztc5	-0.285	-0.175	0.079	0.227	-0.030	0.574	0.231	**0.714**
ztc6	0.059	-0.094	0.123	0.097	0.003	0.539	0.231	**0.732**
ztc7	0.127	-0.214	-0.064	-0.079	-0.099	0.430	0.094	**0.774**
ztc8	0.084	-0.074	0.152	0.125	-0.054	0.544	0.423	**0.741**
ztc9	0.183	-0.137	0.147	0.011	-0.042	0.480	0.387	**0.796**
ztc10	-0.063	-0.079	0.053	0.151	0.105	0.227	*0.349*	**0.327**
ztc11	-0.098	-0.261	0.041	-0.201	-0.292	0.619	0.121	**0.666**
ztc12	0.081	-0.069	0.291	0.231	0.013	0.625	0.306	**0.670**
ztc13	0.035	0.115	0.403	0.364	0.162	0.467	0.607	**0.642**
ztc14	-0.109	-0.240	-0.021	-0.037	-0.145	0.429	0.248	**0.642**

Items **bold and underlined** are not the highest correlates
Items *italicised and underlined* are the highest correlates, but for a different latent variable

Model 1a

Table 41 Convergent Validity: Correlation of Indicators & Latent Variables, NWI-PES (Model 1a)

	Collegial Nurse-Doctor Relations	Nurse Manager Ability, Leadership, and Support of Nurses	Nurse Participation in Hospital Affairs	Nursing Foundations for Quality of Care	Staffing & Resource Adequacy	t
zsra1					0.706	7.319**
zsra2					0.801	6.728**
zsra3					0.825	7.223**
zsra4					0.822	9.253**
znfq2				0.705		6.487**
znfq3				0.641		5.548**
znfq6				0.629		3.654**
znfq9				0.588		4.951**
znha1			0.747			4.855**
znha4			0.637			5.012**
znha5			0.769			5.324**
znha7			0.539			2.130*
znha8			0.658			3.256**
znml1		0.809				8.721**
znml2		0.730				5.398**
znml3		0.768				6.123**
znml4		0.842				7.029**
znpr1	0.822					2.926**
znpr2	0.894					4.753**
znpr3	0.907					5.154**

* Significant at $p \leq 0.05$
** Significant at $p \leq 0.01$

Table 42 Convergent Validity: Correlation of Indicators & Latent Variables, MHPPQ (Model 1a)

	Role Competency	Role Support	Therapeutic Commitment	t
zrc1	0.848			27.178**
zrc2	0.900			41.908**
zrc3	0.882			29.831**
zrc4	0.829			18.641**
zrc5	0.602			5.269**
zrc6	0.512			3.534**
zrc8	0.868			24.294**
zrc9	0.864			26.027**
zrs1		0.904		41.898**
zrs2		0.846		25.094**
zrs3		0.832		15.555**
zrs4		0.617		7.074**
ztc1			0.594	6.559**
ztc3			0.628	8.267**
ztc5			0.718	12.898**
ztc6			0.747	9.375**
ztc7			0.785	15.439**
ztc8			0.751	17.502**
ztc9			0.806	23.686**
ztc11			0.678	7.613**
ztc12			0.677	6.767**
ztc13			0.632	7.285**
ztc14			0.644	7.738**

* Significant at $p \leq 0.05$
** Significant at $p \leq 0.01$

Table 43 Discriminant Validity: Cross-loadings of Indicators & Reflective Latent Variables, NWI-PES (Model 1a)

	Collegial Nurse-Doctor Relations	Nurse Manager Ability, Leadership, and Support of Nurses	Nurse Participation in Hospital Affairs	Nursing Foundations for Quality of Care	Staffing & Resource Adequacy	Role Competency	Role Support	Therapeutic Commitment
zsra1	0.044	0.240	0.336	0.531	**0.706**	0.149	0.281	0.034
zsra2	0.144	0.345	0.298	0.547	**0.801**	0.068	0.293	-0.036
zsra3	0.130	0.165	0.259	0.398	**0.825**	-0.043	0.271	-0.105
zsra4	0.261	0.195	0.289	0.313	**0.822**	-0.033	0.279	-0.065
znfq2	-0.149	0.078	0.316	**0.705**	0.294	0.116	0.426	0.172
znfq3	0.191	0.466	0.402	**0.641**	0.406	0.206	0.359	0.186
znfq6	0.104	0.453	0.574	**0.629**	0.277	0.035	0.305	-0.026
znfq9	0.190	0.094	0.324	**0.588**	0.483	0.121	0.379	-0.001
znha1	0.373	0.513	**0.747**	0.464	0.233	0.210	0.247	0.103
znha4	0.313	0.222	**0.637**	0.374	0.325	0.136	0.350	0.209
znha5	0.280	0.441	**0.769**	0.421	0.192	0.210	0.308	0.144
znha7	0.158	0.273	**0.539**	0.463	0.312	0.011	0.273	-0.085
znha8	0.213	0.217	**0.658**	0.376	0.244	0.097	0.282	0.068
znml1	0.410	**0.809**	0.428	0.240	0.206	-0.205	0.160	-0.132
znml2	0.139	**0.730**	0.478	0.476	0.368	-0.059	0.170	-0.071
znml3	0.392	**0.769**	0.425	0.225	0.209	-0.104	0.104	-0.001
znml4	0.248	**0.842**	0.310	0.341	0.211	-0.209	0.147	-0.203
znpr1	**0.822**	0.308	0.254	0.113	0.148	-0.026	0.097	-0.048
znpr2	**0.894**	0.318	0.385	0.083	0.163	-0.108	0.070	0.085
znpr3	**0.907**	0.366	0.432	0.101	0.170	-0.127	0.109	0.035

Table 44 Discriminant Validity: Cross-loadings of Indicators & Reflective Latent Variables, MHPPQ (Model 1a)

	Collegial Nurse-Doctor Relations	Nurse Manager Ability, Leadership, and Support of Nurses	Nurse Participation in Hospital Affairs	Nursing Foundations for Quality of Care	Staffing & Resource Adequacy	Role Competency	Role Support	Therapeutic Commitment
zrc1	-0.139	-0.172	0.209	0.176	0.088	**0.848**	0.316	0.593
zrc2	-0.070	-0.192	0.118	0.075	0.000	**0.900**	0.240	0.614
zrc3	-0.140	-0.322	0.096	0.125	-0.064	**0.882**	0.242	0.518
zrc4	-0.049	-0.211	0.159	0.200	0.065	**0.829**	0.315	0.622
zrc5	-0.148	0.160	0.293	0.205	-0.075	**0.602**	0.305	0.447
zrc6	-0.102	0.077	0.162	0.229	0.076	**0.512**	0.324	0.490
zrc8	-0.034	-0.159	0.199	0.169	0.129	**0.868**	0.284	0.613
zrc9	0.000	-0.285	0.177	0.096	0.048	**0.865**	0.395	0.693
zrs1	0.157	0.170	0.379	0.523	0.374	0.287	**0.904**	0.368
zrs2	0.020	0.093	0.220	0.466	0.283	0.353	**0.846**	0.333
zrs3	0.011	0.027	0.218	0.481	0.256	0.428	**0.832**	0.456
zrs4	0.134	0.283	0.533	0.379	0.216	0.155	**0.617**	0.190
ztc1	-0.032	-0.007	0.151	0.111	-0.002	0.475	0.273	**0.594**
ztc3	0.017	-0.103	-0.001	-0.080	-0.043	0.407	0.131	**0.628**
ztc5	-0.285	-0.175	0.026	0.246	-0.030	0.567	0.229	**0.718**
ztc6	0.059	-0.093	0.096	0.086	0.003	0.533	0.230	**0.747**
ztc7	0.127	-0.214	-0.050	-0.087	-0.099	0.429	0.093	**0.785**
ztc8	0.084	-0.075	0.092	0.150	-0.054	0.542	0.421	**0.751**
ztc9	0.183	-0.137	0.111	0.012	-0.042	0.473	0.386	**0.806**
ztc11	-0.098	-0.260	0.016	-0.153	-0.292	0.604	0.122	**0.678**
ztc12	0.082	-0.069	0.263	0.217	0.013	0.620	0.306	**0.677**
ztc13	0.035	0.115	0.385	0.403	0.162	0.467	0.610	**0.632**
ztc14	-0.109	-0.240	-0.048	-0.034	-0.145	0.422	0.246	**0.644**

Table 45 Discriminant Validity: Comparison of Square Root AVE & Latent Variable Correlations (Model 1a)

	AVE	Collegial Nurse-Doctor Relations	Nurse Manager Ability, Leadership, and Support of Nurses	Nurse Participation in Hospital Affairs	Nursing Foundations for Quality of Care	Staffing & Resource Adequacy	Role Competency	Role Support	Therapeutic Commitment
Collegial Nurse-Doctor Relations	0.766	*0.875*							
Nurse Manager Ability, Leadership, and Support of Nurses	0.622	0.381	*0.788*						
Nurse Participation in Hospital Affairs	0.455	0.409	0.503	*0.675*					
Nursing Foundations for Quality of Care	0.412	0.115	0.396	0.610	*0.642*				
Staffing & Resource Adequacy	0.624	0.184	0.302	0.375	0.570	*0.790*			
Role Competency	0.640	-0.099	-0.200	0.214	0.190	0.046	*0.800*		
Role Support	0.652	0.108	0.185	0.432	0.579	0.357	0.376	*0.807*	
Therapeutic Commitment	0.489	0.022	-0.148	0.155	0.140	-0.054	0.724	0.419	*0.700*

AVE < 0.5 are underlined
Following PLS-PM convention √AVE is presented in the diagonal and italicised

Model 2

Table 46 Convergent Validity: Correlation of Indicators & Latent Variables, NWI-PES & MHPPQ (Model 2)

	Nursing Foundations for Quality of Care	Nurse Participation in Hospital Affairs	Nurse Manager Ability, Leadership, and Support of Nurses	Role Competency	Role Support	Therapeutic Commitment
znfq2	0.711					
znfq3	0.629					
znfq6	0.619					
znfq9	0.601					
znha1		0.858				
znha4		0.552				
znha5		0.860				
znha7		0.333				
znha8		0.528				
znml1			0.827			
znml2			0.669			
znml3			0.771			
znml4			0.851			
zrc1				0.847		
zrc2				0.903		
zrc3				0.887		
zrc4				0.837		
zrc5				0.580		
zrc6				0.495		
zrc8				0.870		
zrc9				0.871		
zrs1					0.902	
zrs2					0.876	
zrs3					0.877	
zrs4					0.536	
ztc1						0.597
ztc3						0.624
ztc5						0.712
ztc6						0.743
ztc7						0.759
ztc8						0.746
ztc9						0.799
ztc11						0.679
ztc12						0.688
ztc13						0.649
ztc14						0.664

Correlation coefficients below 0.5 are underlined

Table 47 Discriminant Validity: Cross-loadings of Indicators & Reflective Latent Variables, NWI-PES & MHPPQ (Model 2)

	Nurse Manager Ability, Leadership, and Support of Nurses	Nurse Participation in Hospital Affairs	Nursing Foundations for Quality of Care	Role Competency	Role Support	Therapeutic Commitment
znfq2	0.066	0.251	**0.711**	0.116	0.431	0.179
znfq3	0.446	0.435	**0.629**	0.200	0.341	0.185
znfq6	0.437	0.585	**0.619**	0.028	0.288	-0.007
znfq9	0.080	0.244	**0.601**	0.122	0.389	0.003
znha1	0.501	**0.858**	0.455	0.207	0.222	0.119
znha4	0.221	**0.552**	0.374	0.136	0.311	0.209
znha5	0.416	**0.860**	0.411	0.202	0.278	0.157
znha7	0.256	***0.333***	*0.467*	0.007	0.258	-0.087
znha8	0.209	**0.528**	0.379	0.090	0.259	0.070
znml1	**0.827**	0.393	0.233	-0.215	0.146	-0.138
znml2	**0.669**	0.489	0.468	-0.071	0.145	-0.065
znml3	**0.771**	0.440	0.214	-0.113	0.066	0.002
znml4	**0.851**	0.369	0.333	-0.216	0.129	-0.194
zrc1	-0.191	0.200	0.177	**0.847**	0.320	0.594
zrc2	-0.197	0.140	0.075	**0.903**	0.257	0.618
zrc3	-0.332	0.134	0.125	**0.887**	0.263	0.530
zrc4	-0.214	0.202	0.200	**0.837**	0.339	0.630
zrc5	0.141	0.309	0.200	**0.580**	0.300	0.455
zrc6	0.067	0.183	0.225	**0.495**	0.324	0.494
zrc8	-0.167	0.214	0.170	**0.870**	0.295	0.619
zrc9	-0.290	0.186	0.098	**0.871**	0.412	0.701
zrs1	0.158	0.344	0.524	0.283	**0.902**	0.377
zrs2	0.098	0.190	0.470	0.353	**0.876**	0.346
zrs3	0.029	0.194	0.485	0.428	**0.877**	0.466
zrs4	0.277	0.506	0.375	0.148	**0.536**	0.207
ztc1	-0.013	0.096	0.113	0.472	0.289	**0.597**
ztc3	-0.112	-0.035	-0.078	0.402	0.149	**0.624**
ztc5	-0.191	0.041	0.245	0.563	0.252	**0.712**
ztc6	-0.096	0.109	0.088	0.530	0.238	**0.743**
ztc7	-0.217	-0.052	-0.085	0.427	0.103	**0.759**
ztc8	-0.084	0.145	0.146	0.545	0.434	**0.746**
ztc9	-0.136	0.137	0.010	0.475	0.398	**0.799**
ztc11	-0.259	0.059	-0.153	0.601	0.124	**0.679**
ztc12	-0.064	0.299	0.216	0.618	0.315	**0.688**
ztc13	0.105	0.401	0.401	0.465	0.579	**0.649**
ztc14	-0.255	0.003	-0.033	0.422	0.258	**0.664**

Items ***bold and underlined*** are not the highest correlates
Items *italicised and underlined* are the highest correlates, but for a different latent variable

Table 48 Discriminant Validity: Comparison of Square Root AVE & Latent Variable Correlations (Model 2)

	AVE	Nurse Manager Ability, Leadership, and Support of Nurses	Nurse Participation in Hospital Affairs	Nursing Foundations for Quality of Care	Role Competency	Role Support	Therapeutic Commitment
Nurse Manager Ability, Leadership, and Support of Nurses	0.613	*0.783*	0	0	0	0	0
Nurse Participation in Hospital Affairs	0.434	0.501	*0.659*	0	0	0	0
Nursing Foundations for Quality of Care	0.411	0.362	0.557	*0.641*	0	0	0
Role Competency	0.640	-0.223	0.232	0.186	*0.800*	0	0
Role Support	0.659	0.155	0.356	0.575	0.388	*0.812*	0
Therapeutic Commitment	0.488	-0.153	0.190	0.150	**0.729**	0.444	*0.699*

Correlations between latent variables > √AVE are **bold**
AVE < 0.5 are underlined
Following PLS-PM convention √AVE is presented in the diagonal and *italicised*

Model 2a

Table 49 Convergent Validity: Correlation of Indicators & Latent Variables, NWI-PES & MHPPQ (Model 2a)

	Nursing Foundations for Quality of Care	Nurse Participation in Hospital Affairs	Nurse Manager Ability, Leadership, and Support of Nurses	Role Competency	Role Support	Therapeutic Commitment	t-value
znfq2	0.711						6.328**
znfq3	0.629						4.678**
znfq6	0.618						4.561**
znfq9	0.601						5.984**
znha1		0.872					5.446**
znha4		0.523					2.164**
znha5		0.871					5.361**
znha8		0.515					1.990*
znml1			0.826				6.218**
znml2			0.676				3.298**
znml3			0.781				4.267**
znml4			0.844				9.092**
zrc1				0.857			30.128**
zrc2				0.912			43.824**
zrc3				0.903			41.364**
zrc4				0.843			20.484**
zrc5				0.555			4.315**
zrc8				0.861			25.106**
zrc9				0.875			29.078**
zrs1					0.902		38.499**
zrs2					0.876		33.690**
zrs3					0.878		29.639**
zrs4					0.534		4.862**
ztc1						0.596	7.449**
ztc3						0.622	9.498**
ztc5						0.711	7.456**
ztc6						0.741	7.955**
ztc7						0.759	9.280**
ztc8						0.749	8.425**
ztc9						0.802	13.785**
ztc11						0.677	9.250**
ztc12						0.685	14.255**
ztc13						0.649	16.224**
ztc14						0.666	17.662**

* Significant at $p \leq 0.05$
** Significant at $p \leq 0.01$

Table 50 Discriminant Validity: Cross-loadings of Indicators & Reflective Latent Variables, NWI-PES & MHPPQ (Model 2a)

	Nursing Foundations for Quality of Care	Nurse Participation in Hospital Affairs	Nurse Manager Ability, Leadership, and Support of Nurses	Role Competency	Role Support	Therapeutic Commitment
znfq2	**0.711**	0.243	0.063	0.117	0.431	0.180
znfq3	**0.629**	0.437	0.449	0.179	0.341	0.185
znfq6	**0.618**	0.584	0.441	0.014	0.288	-0.007
znfq9	**0.601**	0.233	0.082	0.113	0.389	0.002
znha1	0.455	**0.872**	0.503	0.206	0.222	0.119
znha4	0.374	**0.523**	0.225	0.117	0.310	0.208
znha5	0.410	**0.871**	0.421	0.198	0.277	0.158
znha8	0.379	**0.515**	0.212	0.085	0.259	0.068
znml1	0.233	0.386	**0.826**	-0.231	0.145	-0.139
znml2	0.468	0.492	**0.676**	-0.085	0.145	-0.065
znml3	0.214	0.439	**0.781**	-0.134	0.066	0.002
znml4	0.333	0.377	**0.844**	-0.225	0.129	-0.193
zrc1	0.177	0.200	-0.186	**0.857**	0.320	0.593
zrc2	0.075	0.141	-0.195	**0.912**	0.257	0.618
zrc3	0.125	0.140	-0.331	**0.903**	0.263	0.531
zrc4	0.200	0.202	-0.212	**0.843**	0.339	0.630
zrc5	0.200	0.313	0.144	**0.555**	0.300	0.455
zrc8	0.170	0.215	-0.165	**0.861**	0.295	0.618
zrc9	0.098	0.183	-0.288	**0.875**	0.412	0.701
zrs1	0.524	0.337	0.159	0.278	**0.902**	0.379
zrs2	0.470	0.185	0.094	0.340	**0.876**	0.346
zrs3	0.485	0.190	0.027	0.414	**0.878**	0.466
zrs4	0.375	0.496	0.281	0.127	**0.534**	0.206
ztc1	0.113	0.086	-0.010	0.456	0.289	**0.596**
ztc3	-0.078	-0.040	-0.105	0.386	0.149	**0.622**
ztc5	0.245	0.041	-0.189	0.541	0.252	**0.711**
ztc6	0.088	0.106	-0.094	0.506	0.238	**0.741**
ztc7	-0.085	-0.057	-0.213	0.415	0.103	**0.759**
ztc8	0.146	0.150	-0.083	0.555	0.434	**0.749**
ztc9	0.010	0.137	-0.133	0.479	0.399	**0.802**
ztc11	-0.153	0.061	-0.255	0.585	0.124	**0.677**
ztc12	0.216	0.298	-0.060	0.594	0.315	**0.685**
ztc13	0.401	0.395	0.110	0.447	0.578	**0.649**
ztc14	-0.033	0.010	-0.251	0.424	0.258	**0.666**

8.6. Appendix F: Paths in the Model

Table 51 Paths & Hypotheses in the Initial Model

Hypothesis Number	Path		
H1	Role Support	→	Role Competency
H2	Clinical Supervision	→	Role Competency
H3	Experience	→	Role Competency
H4	Nurse Manager Ability, Leadership, and Support of Nurses	→	Role Competency
H5	Nurse Participation in Hospital Affairs	→	Role Competency
H6	Qualification	→	Role Competency
H7	Clinical Supervision	→	Role Support
H8	Collegial Nurse-Doctor Relations	→	Role Support
H9	Nurse Manager Ability, Leadership, and Support of Nurses	→	Role Support
H10	Nurse Participation in Hospital Affairs	→	Role Support
H11	Nursing Foundations for Quality of Care	→	Role Support
H12	Staffing & Resource Adequacy	→	Role Support
H13	Ward Skill mix	→	Role Support
H14	Ward Staffing	→	Role Support
H15	Role Support	→	Therapeutic Commitment
H16	Role Competency	→	Therapeutic Commitment
H17	Patient Turnover	→	Therapeutic Commitment
H18	Voluntary Patients	→	Therapeutic Commitment

Table 52 Paths Removed from the Initial Model

Hypothesis Number	Path		
H2	Clinical Supervision	→	Role Competency
H6	Qualification	→	Role Competency
H8	Collegial Nurse-Doctor Relations	→	Role Support
H9	Nurse Manager Ability, Leadership, and Support of Nurses	→	Role Support
H10	Nurse Participation in Hospital Affairs	→	Role Support
H12	Staffing & Resource Adequacy	→	Role Support
H14	Ward Staffing	→	Role Support
H17	Patient Turnover	→	Therapeutic Commitment
H18	Voluntary Patients	→	Therapeutic Commitment

8.7. Appendix G: Latent Variable Indicators

Figure 13 Reflective Indicators: MHPPQ – Role Support

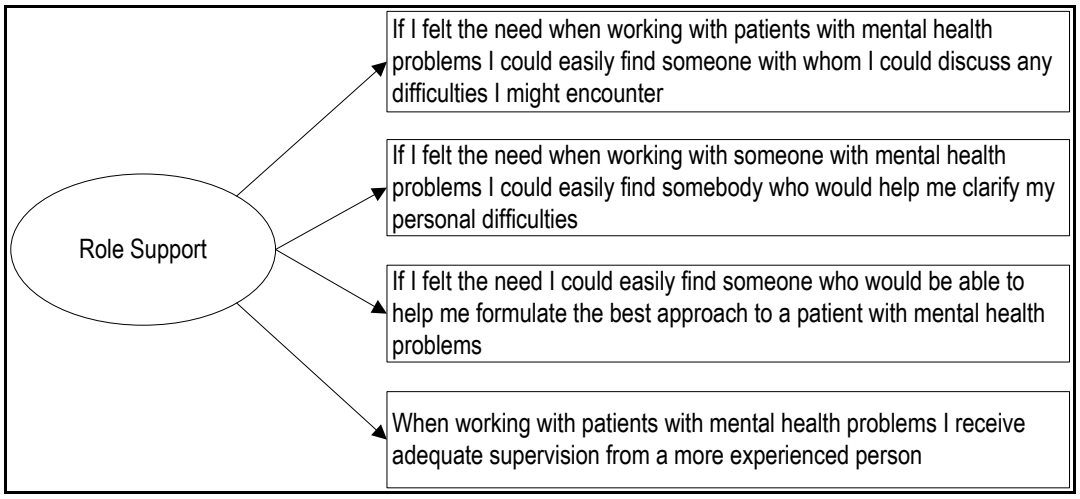


Figure 14 Reflective Indicators: MHPPQ – Role Competency

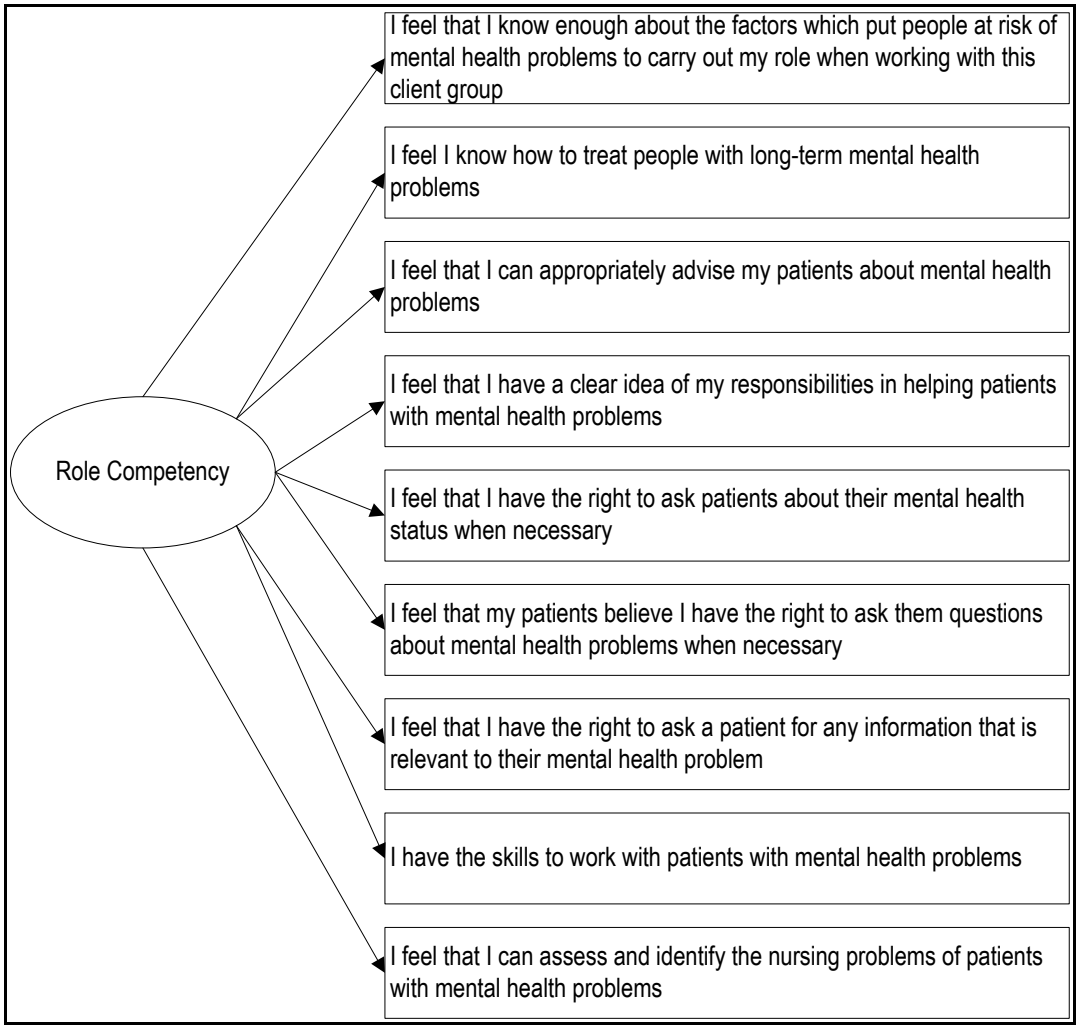


Figure 15 Reflective Indicators: MHPPQ – Therapeutic Commitment

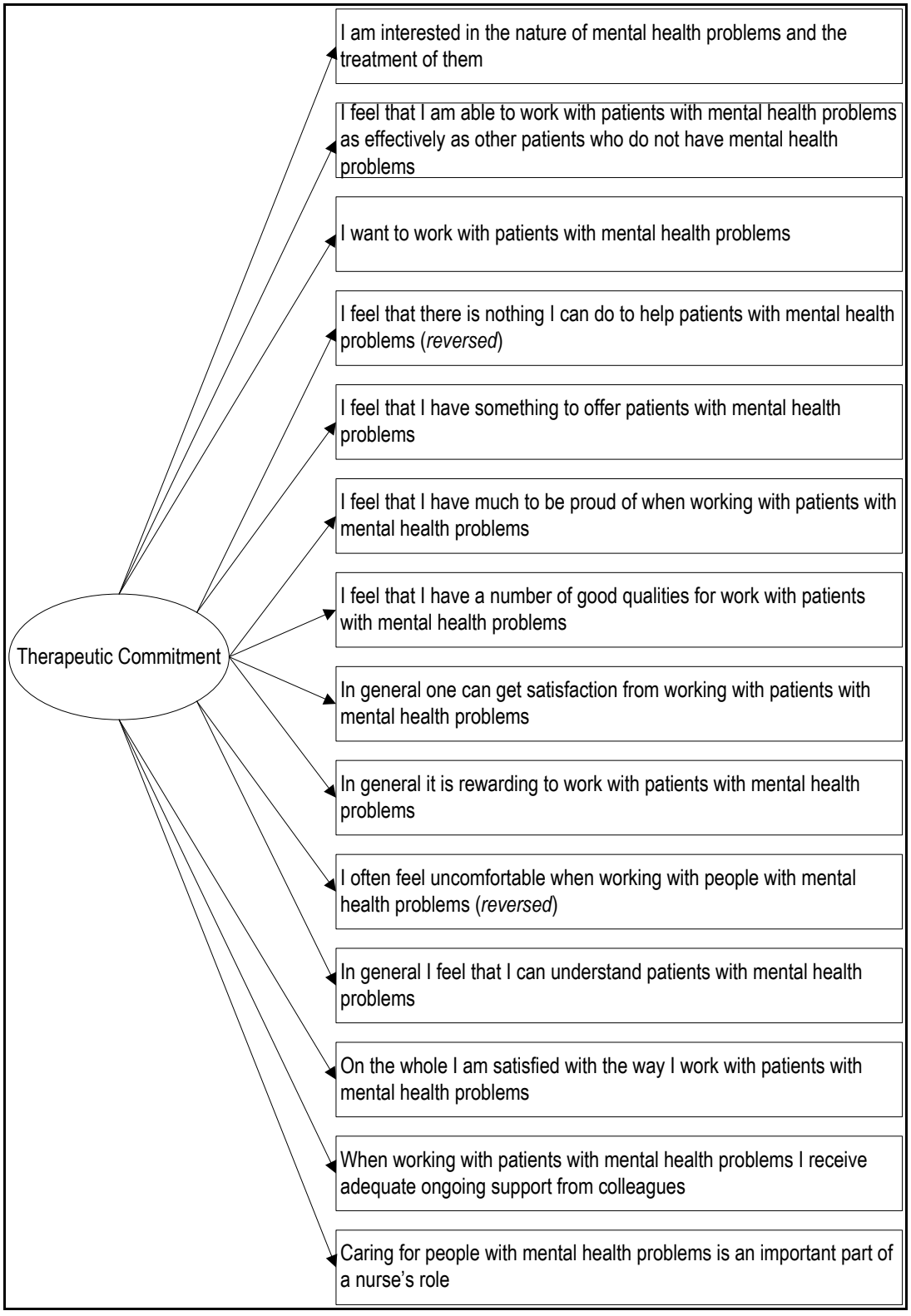


Figure 16 Reflective Indicators: NWI-PES – Nurse Manager Ability, Leadership and Support of Nurses

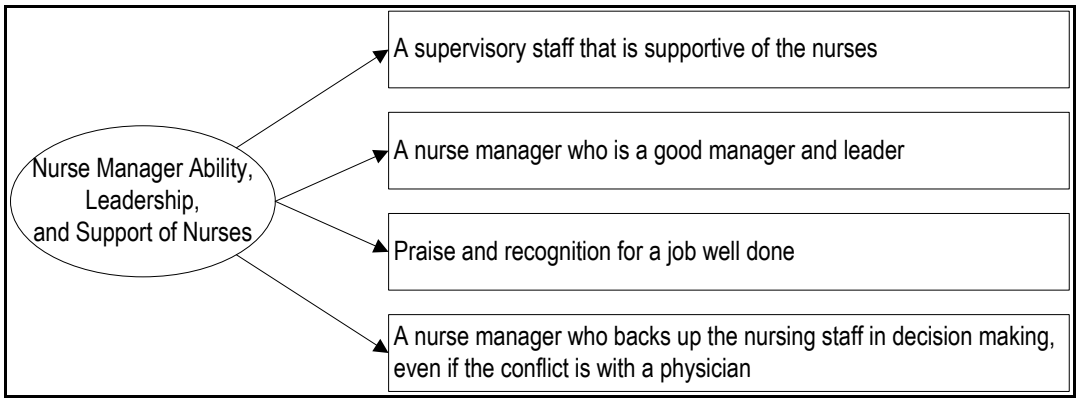


Figure 17 Reflective Indicators: NWI-PES – Nurse Participation in Hospital Affairs

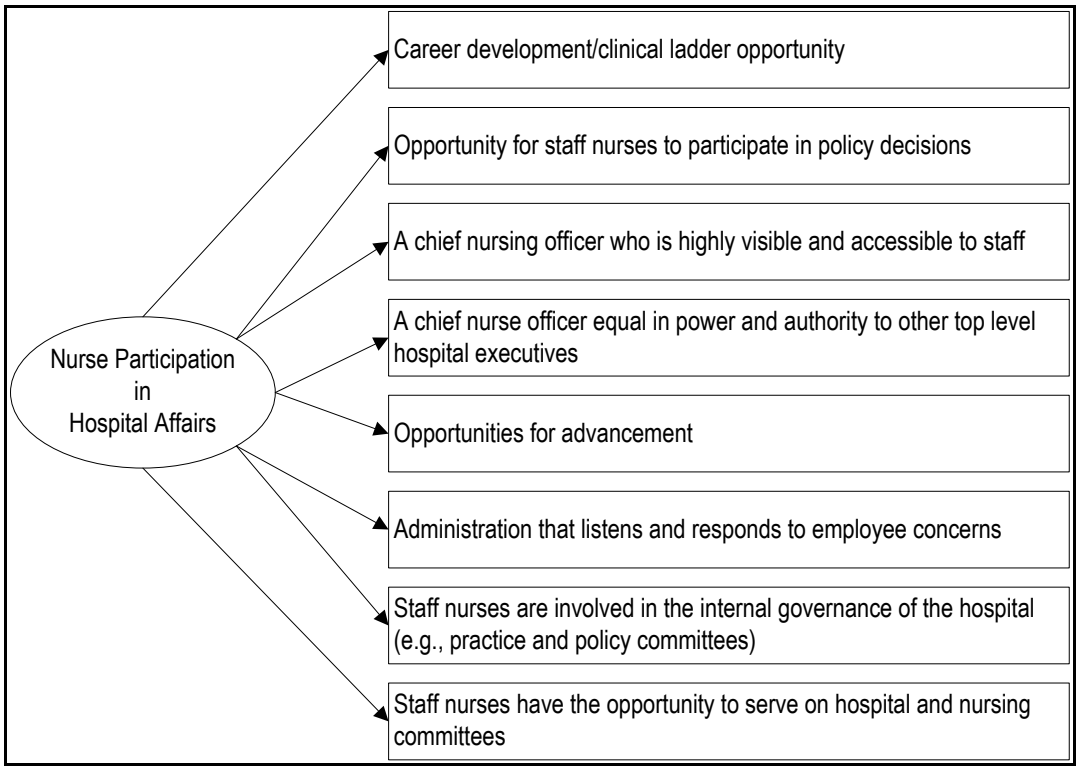


Figure 18 Reflective Indicators: NWI-PES – Collegial Nurse-Doctor Relations

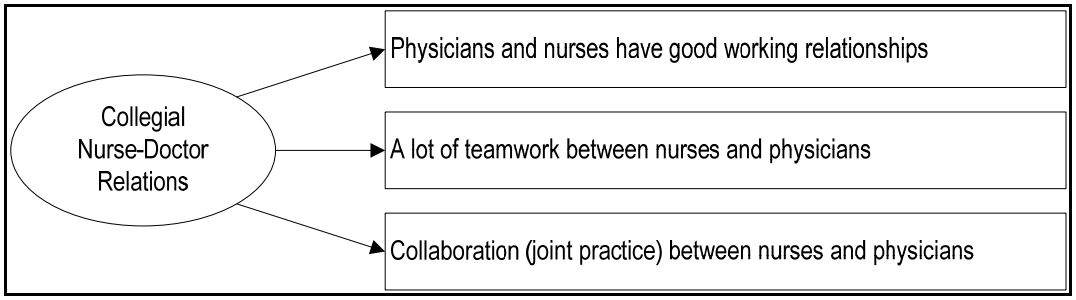


Figure 19 Reflective Indicators: NWI-PES – Staffing & Resource Adequacy

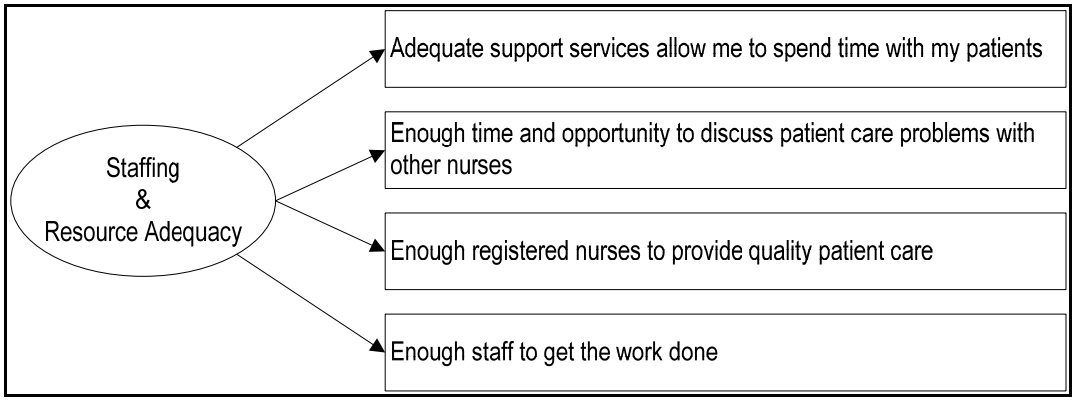


Figure 20 Reflective Indicators: NWI-PES – Nursing Foundations for Quality of Care

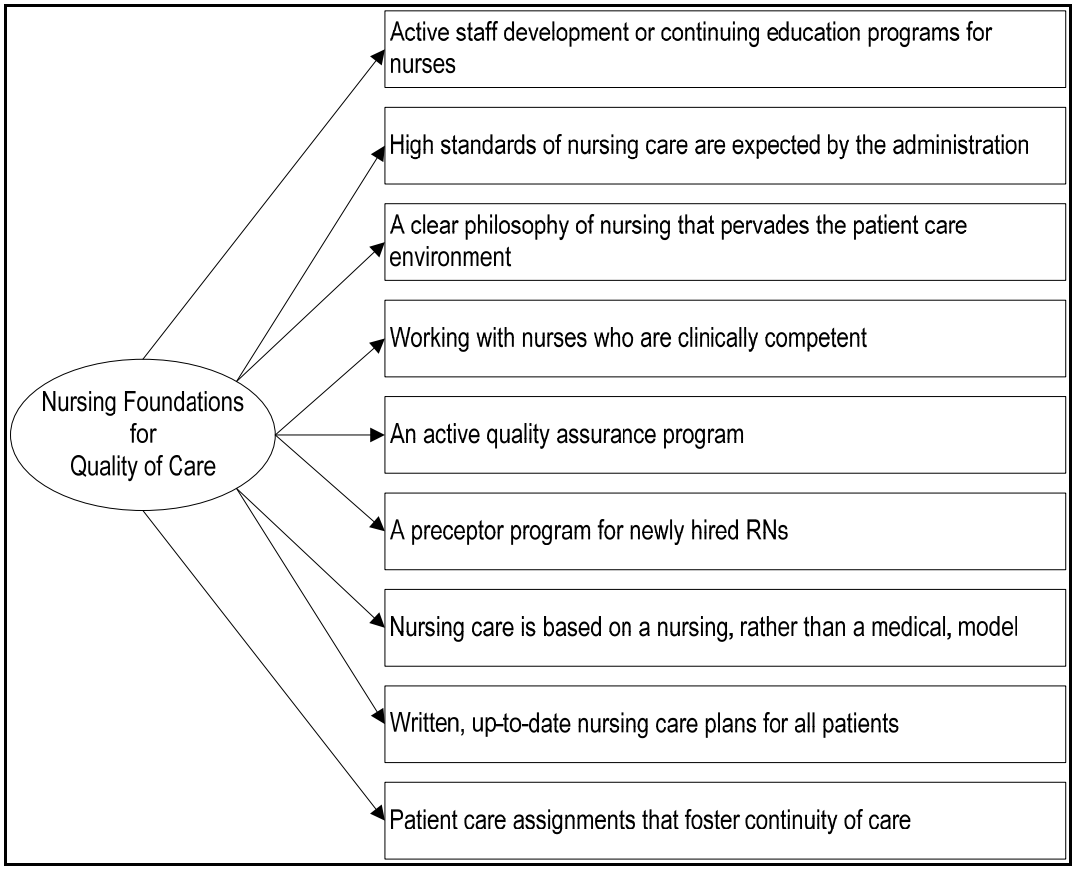
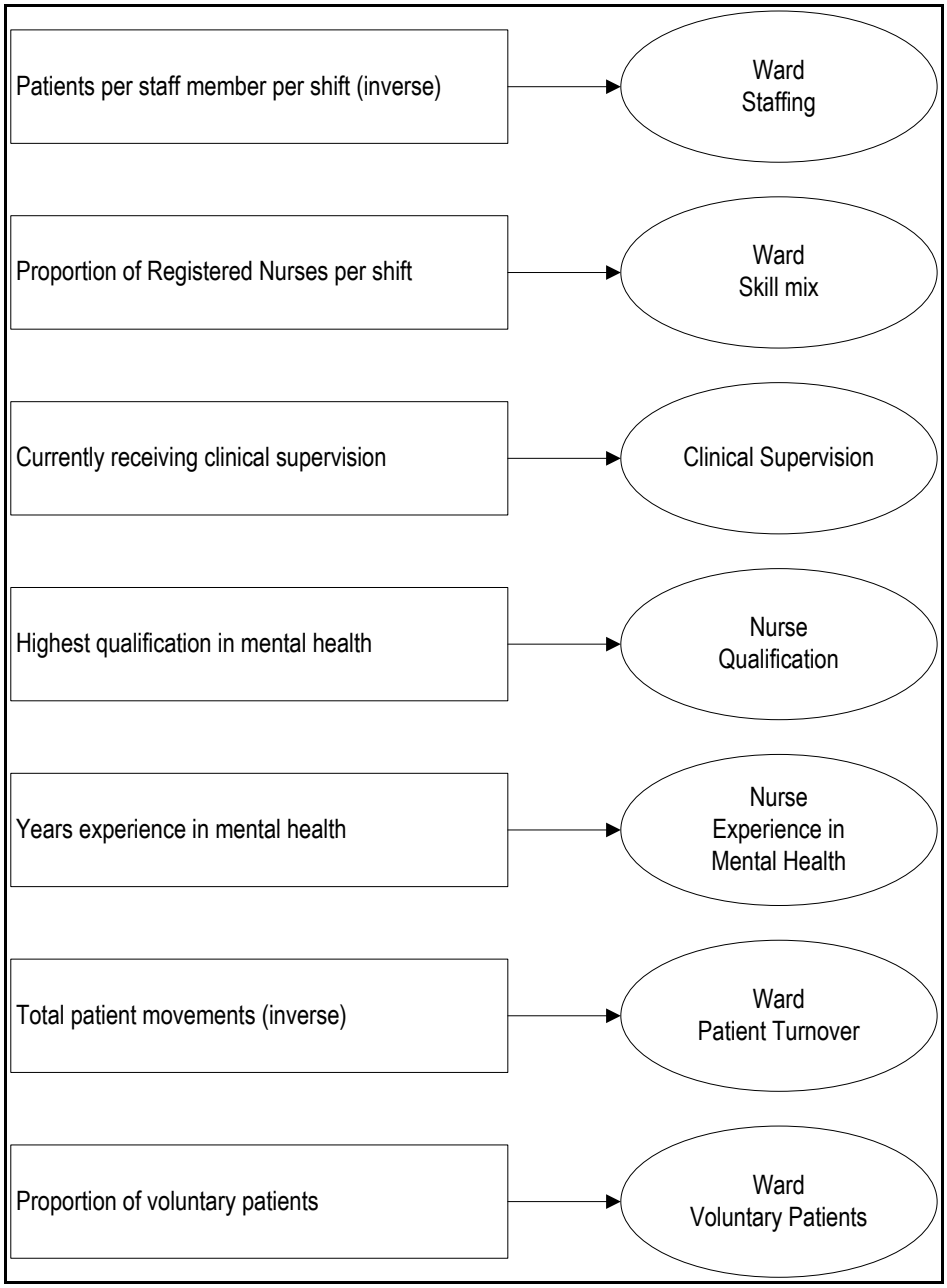


Figure 21 Formative Indicators



9. References

Adams, A., & Bond, S. (2003a). Staffing in acute hospital wards: Part 1. The relationship between number of nurses and ward organizational environment. *Journal of Nursing Management, 11*(2), 287-292.

Adams, A., & Bond, S. (2003b). Staffing in acute hospital wards: Part 2. Relationships between grade mix, staff stability and features of ward organizational environment. *Journal of Nursing Management, 11*(2), 293-298.

Aiken, L. H., Clarke, S. P., & Sloane, D. M. (2002a). Hospital staffing, organization, and quality of care: Cross-national findings. *International Journal for Quality in Health Care, 14*(1), 5-14.

Aiken, L. H., Clarke, S. P., Sloane, D. M., Lake, E. T., & Cheney, T. (2008). Effects of hospital care environment on patient mortality and nurse outcomes. *Journal of Nursing Administration, 38*(5), 223-229.

Aiken, L. H., Clarke, S. P., Sloane, D. M., & Sochalski, J. (2001a). Cause for concern: Nurses' reports of hospital care in five countries. *LDI Issue Brief, 6*(8), 1-4.

Aiken, L. H., Clarke, S. P., Sloane, D. M., Sochalski, J., & Silber, J. H. (2002b). Hospital nurse staffing and patient mortality, nurse burnout, and job dissatisfaction. *Journal of the American Medical Association, 288*(16), 1987-1993.

Aiken, L. H., Clarke, S. P., Sloane, D. M., Sochalski, J. A., Busse, R., Clarke, H., et al. (2001b). Nurses' reports on hospital care in five countries: The ways in which nurses' work is structured have left nurses among the least satisfied workers, and the problem is getting worse. *Health Affairs, 20*(3), 43-53.

Aiken, L. H., & Patrician, P. A. (2000). Measuring organizational traits of hospitals: The Revised Nursing Work Index. *Nursing Research, 49*(3), 146-153.

Aiken, L. H., & Sloane, D. M. (1997). Effects of specialization and client differentiation of the status of nurses: The case of AIDS. *Journal of Health and Social Behavior, 38*(3), 203-222.

Aiken, L. H., Sloane, D. M., & Sochalski, J. (1998). Hospital organisation and outcomes. *Quality in Health Care, 7*(2), 222-226.

Aiken, L. H., Smith, H. L., & Lake, E. T. (1994). Lower Medicare mortality among a set of hospitals known for good nursing care. *Medical Care, 32*(8), 771-787.

Aiken, L. H., Sochalski, J., & Anderson, G. F. (1996). Downsizing the hospital nursing workforce. *Health Affairs, 15*(4), 88-92.

Aiken, L. H., Sochalski, J., & Lake, E. T. (1997). Studying outcomes of organizational change in health services. *Medical Care, 35*(11), NS6-NS18.

Airey, N., & Marriott, J. (2003). Measuring therapeutic attitudes in the prison environment: Development of the Prison Attitude to Drugs scale. *Addiction, 98*(2), 179-184.

Albery, I. P., Heuston, J., Ward, J., Groves, P., Durand, M. A., Gossop, M., et al. (2003). Measuring therapeutic attitude among drug workers. *Addictive Behaviors, 28*(5), 995-1005.

Alexander, J. A., Lichtenstein, R., Jinnett, K., Wells, R., Zazzali, J., & Liu, D. (2005). Cross-functional team processes and patient functional improvement. *Health Services Research, 40*(5), 1335-1355.

Allvin, M., & Aronsson, G. (2003). The future of work environment reforms: Does the concept of work environment apply within the new economy? *International Journal of Health Services, 33*(1), 99-112.

Altschul, A. T. (1972). *Patient-Nurse Interaction*. Edinburgh: Churchill Livingstone.

Alwan, N. A., Johnstone, P., & Zolese, G. (2008). Length of hospitalisation for people with severe mental illness (Vol. 1): Cochrane Database of Systematic Reviews.

Anderson, P., Kaner, E., Wutzke, S., Funk, M., Heather, N., Wensing, M., et al. (2004). Attitudes and managing alcohol problems in general practice: An interaction analysis based on findings from a WHO collaborative study. *Alcohol and Alcoholism, 39*(4), 351-356.

Anderson, P., Kaner, E., Wutzke, S., Wensing, M., Grol, R., Heather, N., et al. (2003). Attitudes and management of alcohol problems in general practice: Descriptive analysis based on findings of a World Health Organisation international collaborative survey. *Alcohol and Alcoholism, 38*(6), 597-601.

Andreou, A., & Bontis, N. (2007). A model for resource allocation using operational knowledge assets. *The Learning Organization, 14*(4), 345-374.

Angus, N. J., Lauder, W., & Reynolds, W. (2001a). Further testing of the Mental Health Problems Perception Questionnaire. *Journal of Advanced Nursing, 33*(5), 638-643.

Angus, N. J., Lauder, W., & Reynolds, W. (2001b). Psychometric development of the Mental Health Problems Perception Questionnaire. *Journal of Psychiatric and Mental Health Nursing, 8*(5), 471-472.

Armstrong, F. (2000). Dope 'em up and ship 'em out: Issues in mental health care. *Australian Nursing Journal, 8*(5), 26.

Armstrong, K., & Laschinger, H. K. S. (2006). Structural empowerment, magnet hospital characteristics, and patient safety culture: Making the link. *Journal of Nursing Care Quality, 21*(2), 124-134.

Armstrong, K., Laschinger, H. K. S., & Wong, C. (2009). Workplace empowerment and magnet hospital characteristics as predictors of patient safety climate. *Journal of Nursing Care Quality, 24*(1), 55-62.

Arnold, S., Deans, C., & Munday, J. (2004). University and service sector collaboration for undergraduate psychiatric nursing education. *International Journal of Mental Health Nursing, 13*(1), 61-66.

Aronson, K. R. (2005). Job satisfaction of nurses who work in private psychiatric hospitals. *Psychiatric Services, 56*(1), 102-104.

Aronson, K. R., Laurenceau, J.-P., Sieveking, N., & Bellet, W. (2005). Job satisfaction as a function of job level. *Administration and Policy in Mental Health, 32*(3), 285-291.

Arvidsson, B., Lofgren, H., & Fridlund, B. (2001). Psychiatric nurses' conceptions of how a group supervision programme in nursing care influences their professional competence: A 4-year follow-up study. *Journal of Nursing Management, 9*(3), 161-171.

Australian & New Zealand College of Mental Health Nurses. (1995). *Standards of Practice for Mental Health Nursing in Australia*. Greenacres, South Australia: ANZCMHN.

Australian & New Zealand College of Mental Health Nurses. (1996a). *Constitution*. Adelaide: ANZCMHN.

Australian & New Zealand College of Mental Health Nurses. (1996b). *Position Paper: Mental Health Nursing Education*. Greenacres, SA: ANZCMHN.

Australian & New Zealand College of Mental Health Nurses. (1996c). *Position Paper: Regulatory practices for mental health nurses*. Canberra: ANZCMHN.

Australian & New Zealand College of Mental Health Nurses. (2004). *Position statement: Mental Health Nursing Education*. Greenacres, South Australia: ANZCMHN.

Australian Broadcasting Corporation. (2008). Up the Line to Goodna 3: Patient rights and staff fights. *All in the Mind* Retrieved 26 July, 2008, from http://www.abc.net.au/rn/allinthemind/stories/2008/2313560.htm

Australian Bureau of Statistics. (2006). *National Health Survey: Summary of results, 2004–05* (No. ABS cat. no. 4364.0). Canberra: ABS.

Australian Health Ministers. (1992). *National Mental Health Plan*. Canberra: Australian Government Publishing Service.

Australian Health Ministers. (1998). *Second National Mental Health Plan*. Canberra: Mental Health Branch, Commonwealth Department of Health and Family Services.

Australian Health Ministers. (2003). *National Mental Health Plan 2003–2008*. Canberra: Australian Government.

Australian Health Workforce Advisory Committee. (2003). *Australian Mental Health Nurse Supply, Recruitment and Retention* (No. 2003.2). Sydney: AHWAC.

Australian Health Workforce Advisory Committee. (2004). *The Australian Nursing Workforce - An Overview of Workforce Planning 2001-2004* (No. 2004.2). Sydney: AHWAC.

Australian Institute of Health and Welfare. (2004a). *Australia's Health 2004* (No. AUS 44). Canberra: AIHW.

Australian Institute of Health and Welfare. (2004b). *Mental Health Services in Australia 2001-02* (No. HSE 31). Canberra: AIHW.

Australian Institute of Health and Welfare. (2005). *Mental Health Services in Australia 2002-03*. Canberra: AIHW.

Australian Institute of Health and Welfare. (2006a). *Australia's Health 2006* (No. AUS 73). Canberra: AIHW.

Australian Institute of Health and Welfare. (2006b). *Nursing and Midwifery Labour Force 2004* (No. HWL 38). Canberra: AIHW.

Australian Institute of Health and Welfare. (2007). Nursing and Midwifery Labour Force 2004: Additional material. Retrieved 17/6/2008, from AIHW: http://www.aihw.gov.au/publications/index.cfm/title/10380

Australian Institute of Health and Welfare. (2008a). *Mental Health Services in Australia 2005-06* (No. HSE 56). Canberra: AIHW.

Australian Institute of Health and Welfare. (2008b). *Nursing and Midwifery Labour Force 2005* (No. HWL 40). Canberra: AIHW.

Australian Institute of Health and Welfare. (2009). AR-DRG Data Cubes. Retrieved 5th February 2009, from AIHW: http://www.aihw.gov.au/hospitals/datacubes/datacube_ardrg.cfm

Australian Mental Health Workforce Advisory Committee. (2008a). Mental Health Workforce: Supply of Mental Health Nurses. Retrieved 6 March, 2009, from http://www.nhwt.gov.au/documents/Mental%20Health%20Workforce%20Activities/MHWAC%20Supply%20of%20Mental%20Health%20Nurses.pdf

Australian Mental Health Workforce Advisory Committee. (2008b). Mental Health Workforce: Supply of Psychiatrists. Retrieved 6 March, 2009, from http://www.nhwt.gov.au/documents/Mental%20Health%20Workforce%20Activities/MHWAC%20Supply%20of%20psychiatrists.pdf

Australian Mental Health Workforce Advisory Committee. (2008c). Mental Health Workforce: Supply of Psychologists. Retrieved 6 March, 2009, from http://www.nhwt.gov.au/documents/Mental%20Health%20Workforce%20Activities/MHWAC%20Supply%20of%20psychologists.pdf

Bakker, A. B., Demerouti, E., & Verbeke, W. (2004). Using the job demands-resources model to predict burnout and performance. *Human Resource Management, 43*(1), 83-104.

Bale, R., Catty, J., Watt, H., Greenwood, N., & Burns, T. (2006). Measures of the therapeutic relationship in severe psychotic illness: A comparison of two scales. *International Journal of Social Psychiatry, 52*(3), 256-266.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioural change. *Psychological Review, 84*(1), 191-215.

Bandura, A. (1988). Organizational application of social cognitive theory. *Australian Journal of Management, 13*(2), 275-302.

Bandura, A. (1994). Self-efficacy. In V. S. Ramachaudran (Ed.), *Encyclopedia of human behavior* (Vol. 4, pp. 71-81). New York: Academic Press.

Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology, 52*(1), 1-26.

Bandura, A., & Locke, E. A. (2003). Negative Self-efficacy and goal effects revisited. *Journal of Applied Psychology, 88*(1), 87-99.

Barker, P. J. (1990). The conceptual basis of mental health nursing. *Nurse Education Today, 10*(5), 339-348.

Barker, P. J. (2003). The Tidal Model: Psychiatric colonization, recovery and the paradigm shift in mental health care. *International Journal of Mental Health Nursing, 12*(2), 96-103.

Barker, P. J., & Buchanan-Barker, P. (2008). Mental health in an age of celebrity: The courage to care. *Medical Humanities, 34*(2), 110-114.

Barker, P. J., Jackson, S., & Stevenson, C. (1999a). The need for psychiatric nursing: Towards a multidimensional theory of caring. *Nursing Inquiry, 6*(1), 103-111.

Barker, P. J., Jackson, S., & Stevenson, C. (1999b). What are psychiatric nurses needed for? Developing a theory of essential nursing practice. *Journal of Psychiatric and Mental Health Nursing, 6*(2), 273-282.

Barker, P. J., & Walker, L. (2000). Nurses' perceptions of multidisciplinary teamwork in acute psychiatric settings. *Journal of Psychiatric and Mental Health Nursing, 7*(6), 539-546.

Bee, P., Playle, J., Lovell, K., Barnes, P., Gray, R., & Keeley, P. (2008). Service user views and expectations of UK-registered mental health nurses: A systematic review of empirical research. *International Journal of Nursing Studies, 45*(3), 442-457.

Begg, S. J., Vos, E. T., Barker, B., Stevenson, C. E., Stanley, L., & Lopez, A. (2007). *The burden of disease and injury in Australia 2003* (No. PHE 82). Canberra: AIHW.

Bell, A., Horsfall, J., & Goodin, W. (1998). The Mental Health Nursing Clinical Confidence Scale: A tool for measuring undergraduate learning on mental health clinical placements. *Australian and New Zealand Journal of Mental Health Nursing, 7*(4), 184-190.

Benner, P. (1984). *From Novice to Expert: Excellence and power in clinical nursing practice*. Menlo Park, California: Addison-Wesley.

Berg, A., & Hallberg, I. R. (1999). Effects of systematic clinical supervision on psychiatric nurses' sense of coherence, creativity, work-related strain, job satisfaction and view of the effects from clinical supervision: A pre-post test design. *Journal of Psychiatric and Mental Health Nursing, 6*(5), 371-381.

Berg, A., Welander Hanson, U., & Hallberg, I. (1994). Nurses' creativity, tedium and burnout during 1 year of individually planned nursing care: Comparison between a ward for severely demented patients and a similar control ward. *Journal of Advanced Nursing, 20*(6), 742-749.

Bernardo, A. C., & Forchuk, C. (2001). Factors associated with readmission to psychiatric facility. *Psychiatric Services, 52*(8), 1100-1102.

Beutler, L. E., & Harwood, T. M. (2002). What is and can be attributed to the therapeutic relationship? *Journal of Contemporary Psychotherapy, 32*(1), 25-33.

Birch, S., O'Brien-Pallas, L. L., Alksnis, C., Tomblin-Murphy, G., & Thomson, D. (2003). Beyond demographic change in human resources planning: An extended framework and application to nursing. *Journal of Health Services Research & Policy, 8*(4), 225-229.

Bjørngaard, J. H., Ruud, T., & Friis, S. (2007). The impact of mental illness on patient satisfaction with the therapeutic relationship. *Social Psychiatry and Psychiatric Epidemiology, 42*(10), 803-809.

Bland, A. R., & Rossen, E. K. (2005). Clinical supervision of nurses working with patients with borderline personality disorder. *Issues in Mental Health Nursing, 26*(5), 507-517.

Bland, J. M., & Altman, D. G. (1996). Statistics notes: Measurement error and correlation coefficients. *British Medical Journal, 313*(7048), 41-42.

Blegen, M. A. (1993). Nurses' job satisfaction: A meta-analysis of related variables. *Nursing Research, 42*(1), 36-41.

Blegen, M. A., & Vaughn, T. (1998). A multisite study of nurse staffing and patient occurrences. *Nursing Economic$, 16*(4), 196-203.

Botella, L., Corbella, S., Belles, L., Pacheco, M., Gomez, A. M., Herrero, O., et al. (2008). Predictors of therapeutic outcome and process. *Psychotherapy Research, 18*(5), 535-542.

Bowers, L., Allan, T., Simpson, A., Jones, J., Van Der Merwe, M., & Jeffery, D. (2009). Identifying key factors associated with aggression on acute inpatient psychiatric wards. *Issues in Mental Health Nursing, 30*(4), 260-271.

Bowers, L., Allan, T., Simpson, A., Nijman, H., & Warren, J. (2007). Adverse incidents, patient flow and nursing workforce variables on acute psychiatric wards: The Tompkins acute ward study. *International Journal of Social Psychiatry, 53*(1), 75-84.

Bowles, N., & Young, C. (1999). An evaluative study of clinical supervision based on Proctor's three function interactive model. *Journal of Advanced Nursing, 30*(4), 958-964.

Bradshaw, T., Butterworth, T., & Mairs, H. (2007). Does structured clinical supervision during psychosocial intervention education enhance outcome for mental health nurses and the service users they work with? *Journal of Psychiatric and Mental Health Nursing, 14*(1), 4-12.

Brennan, G., Flood, C., & Bowers, L. (2006). Constraints and blocks to change and improvement on acute psychiatric wards - lessons from the City Nurses project. *Journal of Psychiatric and Mental Health Nursing, 13*(5), 475-482.

Brown, S. P., Jones, E., & Leigh, T. W. (2005). The attentuating effect of role overload on relationships linking self-efficacy and goal level to work performance. *Journal of Applied Psychology, 90*(5), 972-979.

Brunero, S., Smith, J., Bates, E., & Fairbrother, G. (2008). Health professionals attitudes towards suicide prevention initiatives. *Journal of Psychiatric and Mental Health Nursing, 15*(6), 588-594.

Brunt, D., & Rask, M. (2007). Ward atmosphere: The scarlet pimpernel of psychiatric settings? *Issues in Mental Health Nursing, 28*(6), 639-655.

Bryant, W., Craik, C., & McKay, E. (2005). Perspectives of day and accommodation services for people with enduring mental illness. *Journal of Mental Health, 14*(2), 109-120.

Buchan, J. (1994). Lessons from America? US magnet hospitals and their implications for UK nursing. *Journal of Advanced Nursing, 19*(2), 373-384.

Buchan, J., & Dal Poz, M. R. (2002). Skill mix in the health care workforce: Reviewing the evidence. *Bulletin of the World Health Organization, 80*(7), 575-580.

Budge, C., Carryer, L., & Wood, S. (2003). Health correlates of autonomy, control and professional relationships in the nursing work environment. *Journal of Advanced Nursing, 42*(3), 260-268.

Burgess, P., Pirkis, J., Morton, J., & Croke, E. (2000). Lessons from a comprehensive clinical audit of users of psychiatric services who committed suicide. *Psychiatric Services, 51*(12), 1555-1560.

Burnard, P. (2002). *Learning Human Skills* (4th ed.). London: Butterworth-Heinemann.

Burns, N., & Grove, S. K. (2005). *The Practice of Nursing Research: Conduct, Critique and Utlization* (5th ed.). St Louis: Elsevier.

Butterworth, T., Carson, J., & White, E. (1997). *It is good to talk. An evaluation of clinical supervision and mentorship in England and Scotland*. Manchester: University of Manchester.

Byrne, B. M. (2001). *Structural Equation Modeling with AMOS*. Mahwah, New Jersey: Lawrence Erlbaum Associates.

Cartwright, A. K. J. (1980). The attitudes of helping agents towards the alcoholic client: The influence of experience, support, training, and self-esteem. *British Journal of Addiction, 75*(4), 413-431.

Cartwright, A. K. J. (1981). Are different therapeutic perspectives important in the treatment of alcoholism? *British Journal of Addiction, 76*(4), 347-361.

Cassel, C. M., & Hackl, P. (2000). On measurement of intangible assets: A study of robustness of partial least squares. *Total Quality Management, 11*(7), S897-S907.

Cassel, C. M., Hackl, P., & Westlund, A. H. (1999). PLS for estimating latent variable quality structures: Finite sample robustness properties. *Journal of Applied Statistics, 26*(4), 435-446.

Cavouras, C. A. (2002). Nurse staffing levels in American hospitals: A 2001 report. *Journal of Emergency Nursing, 28*(1), 40-43.

Chaboyer, W., McMurray, A., & Patterson, E. (1998). Unlicensed assistive personnel in the critical care unit: What is their role? *International Journal of Nursing Practice, 4*(4), 240-246.

Chagnon, M., Audette, L. M., Lebrun, L., & Tilquin, C. (1978). A patient classification system by level of nursing care requirements. *Nursing Research, 27*(2), 107-113.

Chambers, M. (1998). Interpersonal mental health nursing: Research issues and challenges. *Journal of Psychiatric and Mental Health Nursing, 5*(3), 203-211.

Chang, Y.-K., & Mark, B. A. (2009). Antecedents of severe and nonsevere medication errors. *Journal of Nursing Scholarship, 41*(1), 70-78.

Charleston, R., & Happell, B. (2004). Evaluating the impact of a preceptorship course on mental health nursing practice. *International Journal of Mental Health Nursing, 13*(3), 191-197.

Chiang, H.-Y., & Lin, S.-Y. (2009). Psychometric testing of the Chinese version of nursing practice environment scale. *Journal of Clinical Nursing, 18*(6), 919-929.

Chin, W. W. (1998). Issues and opinion on structural equation modeling. *MIS Quarterly, 22*(1), 7-16.

Chin, W. W., & Gopal, A. (1995). Adoption intention in GSS: Relative importance of beliefs. *The DATA BASE for Advances in Information Systems, 26*(2-3), 42-64.

Chin, W. W., & Marcolin, B. L. (1995). *The holistic approach to construct validation in research: Examples of the interplay between theory and measurement.* Paper presented at the Administrative Sciences Association of Canada - 23rd Conference - IS Proceedings, Windsor, Ontario.

Chin, W. W., Marcolin, B. L., & Newsted, P. R. (1996). *A partial least squares latent variable modeling approach for measuring interaction effects: Results from a Monte Carlo simulation study and voice mail emotion/adoption study*. Paper presented at the Seventeenth International Conference on Information Systems.

Chin, W. W., Marcolin, B. L., & Newsted, P. R. (2003). A partial least squares latent variable modeling approach for measuring interaction effects: Results from a Monte Carlo simulation study and an electronic mail emotion/adoption study. *Information Systems Research, 14*(2), 189-217.

Chipps, J., Raphael, B., & Coombs, T. (2002). The mental health outcomes and assessment tools training project: Creating the foundation for improved quality of care. *New South Wales Public Health Bulletin, 13*(11-12), 237-238.

Cho, S., Ketefian, S., Barkauskas, V. H., & Smith, D. G. (2003). The effects of nurse staffing on adverse events, morbidity, mortality, and medical costs. *Nursing Research, 52*(2), 71-79.

Clarke, C., Parker, E., & Gould, T. (2005). Rural generalist nurses' perceptions of the effectiveness of their therapeutic interventions for patients with a mental illness. *Australian Journal of Rural Health, 13*(4), 205-213.

Clarke, S. P. (2007). Hospital work environments, nurse characteristics, and sharps injuries. *American Journal of Infection Control, 35*(5), 302-309.

Clarke, S. P., & Aiken, L. H. (2003). Failure to rescue. *American Journal of Nursing, 103*(1), 42-47.

Clarke, S. P., Rockett, J. L., Sloane, D. M., & Aiken, L. H. (2002). Organizational climate, staffing, and safety equipment as predictors of needlestick injuries and near-misses in hospital nurses. *American Journal of Infection Control, 30*(4), 207-216.

Cleary, M. (2003a). The challenges of mental health care reform for contemporary mental health nursing practice: Delivery of nursing care. *International Journal of Mental Health Nursing, 12*(3), 213-223.

Cleary, M. (2003b). The challenges of mental health care reform for contemporary mental health nursing practice: Relationships, power and control. *International Journal of Mental Health Nursing, 12*(2), 139-148.

Cleary, M. (2004). The realities of mental health nursing in acute inpatient environments. *International Journal of Mental Health Nursing, 13*(1), 53-61.

Cleary, M., & Edwards, C. (1999). Something always comes up: Nurse-patient interaction in an acute psychiatric setting. *Journal of Psychiatric and Mental Health Nursing, 6*(6), 469-477.

Cleary, M., Edwards, C., & Meehan, M. (1999). Factors influencing nurse–patient interaction in the acute psychiatric setting: An exploratory investigation. *Australian and New Zealand Journal of Mental Health Nursing, 8*(3), 109-116.

Cleary, M., Horsfall, J., & Hunt, G. E. (2003). Consumer feedback on nursing care and discharge planning. *Journal of Advanced Nursing, 42*(3), 269-277.

Cleary, M., Walter, G., & Hunt, G. E. (2005). The experience and views of mental health nurses regarding nursing care delivery in an integrated, inpatient setting. *International Journal of Mental Health Nursing, 14*(2), 72-77.

Cliff, N. (1983). Some cautions concerning the application of causal modelling methods. *Multivariate Behavioral Research, 18*(115-126).

Clinton, M. (2000). *ANZCMHN Final Report: Scoping Study of the Australian Mental Health Nursing Workforce 1999.* Canberra: Australian Health Ministers' Advisory Council National Working

Group on Mental Health, Mental Health Branch, Commonwealth Department of Health and Aged Care.

Clinton, M., & Hazelton, M. (2000a). Scoping practice issues in the Australian mental health nursing workforce. *Australian and New Zealand Journal of Mental Health Nursing, 9*(3), 100-109.

Clinton, M., & Hazelton, M. (2000b). Scoping the prospects of Australian mental health nursing. *Australian and New Zealand Journal of Mental Health Nursing, 9*(4), 159-165.

Coleman, J. C., & Paul, G. L. (2001). Relationship between staffing ratios and effectiveness of inpatient psychiatric units. *Psychiatric Services, 52*(10), 1374-1379.

Coleman, M., & Jenkins, E. (1998). Developments in mental health nursing: A critical voice. *Journal of Psychiatric and Mental Health Nursing, 5*(5), 355-359.

College of Nurses of Ontario. (2006). *Practice standard: Therapeutic nurse-client relationship, revised 2006* (No. 41033). Toronto: College of Nurses of Ontario.

Coney, S. (1996). Auckland: Relentless unraveling of New Zealand's health-care system. *Lancet, 347*(1733), 1825-1826.

Cottrell, S. (2001). Occupational stress and job satisfaction in mental health nursing: Focused interventions through evidence-based assessment. *Journal of Psychiatric and Mental Health Nursing, 8*(2), 157-164.

Council of Australian Governments. (2006). *National Action Plan on Mental Health 2006 – 2011*. Canberra: COAG.

Cowman, S., Farrelly, M., & Gilheany, P. (2001). An examination of the role and function of psychiatric nurses in clinical practice in Ireland. *Journal of Advanced Nursing, 34*(6), 745-753.

Crawford, P., Brown, B., & Majomi, P. (2008). Professional identify in community mental health nursing: A thematic analysis. *International Journal of Nursing Studies, 45*(7), 1055-1063.

Crawford, P., Carr, J., Knight, A., Chambers, K., & Nolan, P. (2001). The value of community mental health nurses based in primary care teams: Switching the light on in a cellar. *Journal of Psychiatric and Mental Health Nursing, 8*(3), 213-220.

Crowe, M. (2004). The place of the unconscious in mental health nursing. *International Journal of Mental Health Nursing, 13*(1), 2-9.

Cummings, G. G., Hayduk, L., & Estabrooks, C. A. (2006). Is the Nursing Work Index measuring up? Moving beyond estimating reliability to testing validity. *Nursing Research, 55*(2), 82-93.

Curran, J., & Brooker, C. (2007). Systematic review of interventions delivered by UK mental health nurses. *International Journal of Nursing Studies, 44*(3), 479-509.

Curtis, J. (2007). Working together: A joint initiative between academics and clinicians to prepare undergraduate nursing students to work in mental health settings. *International Journal of Mental Health Nursing, 16*(4), 285-293.

Cutcliffe, J. R., & Proctor, B. (1998). An alternative training approach to clinical supervision: 2. *British Journal of Nursing, 7*(6), 344-350.

Dall, T. M., Chen, Y. J., Seifert, R. F., Maddox, P. G., & Hogan, P. F. (2009). The economic value of professional nursing. *Medical Care, 47*(1), 97-104.

Dallender, J., Nolan, P., Soares, J., Thomsen, S., & Arnetz, B. (1999). A comparative study of the perceptions of British mental health nurses and psychiatrists of their work environment. *Journal of Advanced Nursing, 29*(1), 36-43.

Davey, B., Desousa, C., Robinson, S., & Murrells, T. (2006). The policy–practice divide. Who has clinical supervision in nursing? *Journal of Research in Nursing, 11*(3), 237-248.

Day, G., Minichiello, V., & Madison, J. (2007). Nursing morale: Predictive variables among a sample of registered nurses in Australia. *Journal of Nursing Management, 15*(3), 274-284.

Deacon, M. (2003). Caring for people in the 'virtual ward': The practical ramifications for acute nursing work. *Journal of Psychiatric and Mental Health Nursing, 10*(4), 465–471.

Department of Education Science & Training. (2002). *National Review of Nursing Education 2002: Our Duty of Care*. Canberra: Department of Education Science & Training.

Department of Health and Ageing. (2005). *National Mental Health Report 2005: Summary of Ten Years of Reform in Australia's Mental Health Services under the National Mental Health Strategy 1993-2003* (No. Ninth Report). Canberra: Commonwealth of Australia.

Department of Health and Ageing. (2007). *National Mental Health Report 2007: Summary of Twelve Years of Reform in Australia's Mental Health Services under the National Mental Health Strategy 1993-2005*. Canberra: Commonwealth of Australia.

Department of Health and Ageing. (2009a). Casemix Classifications. Retrieved 15 July, 2009, from http://www.health.gov.au/internet/main/publishing.nsf/Content/Classificationshub.htm

Department of Health and Ageing. (2009b). *National Mental Health Policy 2008*. Canberra: Commonwealth of Australia.

Department of Health, U. K. (2006). *From Values to Action: The Chief Nursing Officer's Review of Mental Health Nursing* (No. 6140). London: DH Care Services Directorate.

Diers, D. K. (1999). Casemix and nursing. *Australian Health Review, 2*(22), 56-68.

Donat, D. C. (2002). Impact of staffing on seclusion/restraint reliance. *Psychiatric Rehabilitation Journal, 25*(4), 413-417.

Duffield, C. M., Diers, D. K., Aisbett, C., & Roche, M. A. (2009a). Churn: Patient turnover and casemix. *Nursing Economic$, 27*(3), 185-191.

Duffield, C. M., & O'Brien-Pallas, L. L. (2002). The Nursing Workforce in Canada and Australia: Two sides of the same coin. *Australian Health Review, 25*(2), 136-144.

Duffield, C. M., Roche, M. A., & Merrick, E. T. (2006). Methods of measuring nursing workload in Australia. *Collegian, 13*(1), 16-22.

Duffield, C. M., Roche, M. A., O'Brien-Pallas, L. L., Catling-Paull, C., & King, M. T. (2009b). Staff satisfaction and retention and the role of the Nursing Unit Manager. *Collegian, 16*(1), 11-17.

Duffield, C. M., Roche, M. A., O'Brien-Pallas, L. L., Diers, D. K., Aisbett, C., Aisbett, K., et al. (2009c). Nursing workload and staffing: Impact on patients and staff. Retrieved 15th June, 2009, from http://www.chsm.uts.edu.au/

Duffield, C. M., Roche, M. A., O'Brien-Pallas, L. L., Diers, D. K., Aisbett, C., King, M. T., et al. (2007). Glueing it together: Nurses, their work environment and patient safety. Retrieved 25th February, 2009, from http://www.health.nsw.gov.au/pubs/2007/pdf/nwr_report.pdf

Edwards, D., & Burnard, P. (2003). A systematic review of stress and stress management interventions for mental health nurses. *Journal of Advanced Nursing, 42*(2), 169-200.

Elsom, S. (2001). The mental health nurse. In G. Meadows & B. Singh (Eds.), *Mental Health in Australia: Collaborative Community Practice*. Melbourne: Oxford University Press.

Elsom, S., Happell, B., & Manias, E. (2007). Exploring the expanded practice roles of community mental health nurses. *Issues in Mental Health Nursing, 28*(4), 413-429.

Eom, S. B., Wen, H. J., & Ashill, N. (2006). The determinants of students' perceived learning outcomes and satisfaction in university online education: An empirical investigation. *Decision Sciences Journal of Innovative Education, 4*(2), 215-235.

Esposito-Vinzi, V., Trinchera, L., Squillacciotti, S., & Tenenhaus, M. (2008). REBUS-PLS: A response-based procedure for detecting unit segments in PLS path modelling. *Applied Stochastic Models in Business and Industry, 24*(5), 422-441.

Estabrooks, C. A., Midodzi, W. K., Cummings, G. G., Ricker, K. L., & Giovannetti, P. (2005). The impact of hospital nursing characteristics on 30-day mortality. *Nursing Research, 54*(2), 74-84.

Estabrooks, C. A., Tourangeau, A. E., Humphrey, C. K., Hesketh, K. L., Giovannetti, P., Thomson, D., et al. (2002). Measuring the hospital practice environment: A Canadian context. Revised Nursing Work Index (NWI-R). *Research in Nursing & Health, 25*(4), 256-268.

ExcelCare. (2004). ExcelCare Windows. Retrieved 11th June, 2004, from http://www.excelcare.com/holder/Steped%20Inserts-111172.pdf

Falk, R. F., & Tonkin, P. (2001). Soft modelling the predictors of drug treatment use. *Social Research Update, 1*(32), 1-4

Farrell, G. A., & Carr, J. (1996). Who cares for the mentally ill? Theory and practice hours with a 'mental illness' focus in nursing curricula in Australian universities. *Australian and New Zealand Journal of Mental Health Nursing, 5*(2), 77-83.

Forchuk, C. (1991). Peplau's theory: Concepts and their relations. *Nursing Science Quarterly, 4*(2), 54-60.

Forchuk, C. (1996). Workload measurement and psychiatric mental health nursing: Mathematical and philosophical difficulties. *Canadian Journal of Nursing Administration, 9*(3), 67-81.

Forchuk, C., & Brown, B. (1989). Establishing a nurse-client relationship. *Journal of Psychosocial Nursing and Mental Health Services, 27*(1), 30-34.

Forchuk, C., Martin, M.-L., Chan, Y. L., & Jensen, E. (2005). Therapeutic relationships: From psychiatric hospital to community. *Journal of Psychiatric and Mental Health Nursing, 12*(5), 556-564.

Forchuk, C., & Reynolds, W. (2001). Clients' reflections on relationships with nurses: Comparisons from Canada and Scotland. *Journal of Psychiatric and Mental Health Nursing, 8*(1), 45-51.

Forero, R., Chen, J., Rissel, C., & Bauman, A. (2002). New statistical methods: Their role in health promotion research and evaluation practice - part 2. *Health Promotion Journal of Australia, 13*(3), 242-246.

Fornell, C., & Bookstein, F. L. (1982). Two structural equation models: LISREL and PLS applied to consumer exit-voice theory. *Journal of Marketing Research, 19*(4), 440-452.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39-50.

Forsyth, A. (2007). The effects of diagnosis and non-compliance attributions on therapeutic alliance processes in adult acute psychiatric settings. *Journal of Psychiatric and Mental Health Nursing, 14*(1), 33-40.

Fourie, W. J., McDonald, S., Connor, J., & Bartlett, S. (2005). The role of the registered nurse in an acute mental health inpatient setting in New Zealand: Perceptions versus reality. *International Journal of Mental Health Nursing, 14*(2), 134-141.

Friese, C. R., Lake, E. T., Aiken, L. H., Silber, J. H., & Sochalski, J. (2008). Hospital nurse practice environments and outcomes for surgical oncology patients. *Health Services Research, 43*(4), 1145-1163.

Garrosa, E., Moreno-Jiménez, B., Liang, Y., & González, J. L. (2008). The relationship between socio-demographic variables, job stressors, burnout, and hardy personality in nurses: An exploratory study. *International Journal of Nursing Studies, 45*(3), 418-427.

Garson, G. D. (2008). Statnotes: Topics in Multivariate Analysis. Retrieved 4 Feb, 2008, from http://www2.chass.ncsu.edu/garson/pa765/statnote.htm

Gaskin, C. J., Elsom, S., & Happell, B. (2007). Interventions for reducing the use of seclusion in psychiatric facilities: Review of the literature. *British Journal of Psychiatry, 191*(4), 298-303.

Gefen, D., & Straub, D. W. (2005). A practical guide to factorial validity using PLS-Graph: Tutorial and annotated example. *Communications of the Association for Information Systems, 16*(1), 91-109.

Gijbels, H. (1995). Mental health nursing skills in an acute admission environment: Perceptions of mental health nurses and other mental health professionals. *Journal of Advanced Nursing, 21*(3), 460-465.

Goldstein, H. (2003). *Multilevel Statistical Models* (2nd ed.). New York: John Wiley & Sons.

Gopal, A., Bostrom, R. P., & Chin, W. W. (1992). Applying adaptive structuring theory to investigate the process of group support systems use. *Journal of Management Information Systems, 9*(3), 45-69.

Gorman, D. M., & Cartwright, A. K. J. (1991). Implications of using the composite and short versions of the Alcohol and Alcohol Problems Perception Questionnaire (AAPPQ). *British Journal of Addiction, 86*(3), 327-334.

Gournay, K. (2003a). Drug treatments for schizophrenia: Why they offer the only hope for patients. [Article]. *Mental Health Practice, 6*(6), 16-21.

Gournay, K. (2003b). Schizophrenia and NICE: Another view. *Mental Health Nursing, 23*(4), 16-19.

Grigg, M. (2001). The role of the psychiatric nurse. *Australasian Psychiatry, 9*(2), 143-145.

Gunnarsdóttir, S., Clarke, S. P., Rafferty, A. M., & Nutbeam, D. (2007). Front-line management, staffing and nurse-doctor relationships as predictors of nurse and patient outcomes. A survey of Icelandic hospital nurses. *International Journal of Nursing Studies, 15*(1), 1-9.

Halsteinli, V., Karterud, S., & Pedersen, G. (2008). When costs count: The impact of staff size, skill mix and treatment intensity on patient outcome for psychotherapeutic day treatment programmes. *Health Policy, 86*(2), 255-265.

Hancox, K., Lynch, L., Happell, B., & Biondo, S. (2004). An evaluation of an educational program for clinical supervision. *International Journal of Mental Health Nursing, 13*(3), 198-203.

Hanrahan, N., & Aiken, L. H. (2008). Psychiatric nurse reports on the quality of psychiatric care in general hospitals. *Quality Management in Health Care, 17*(3), 210-217.

Hansen, C., Carryer, J., & Budge, C. (2007). Public health nurses' views on their position within a changing health system. *Nursing Praxis in New Zealand, 23*(2), 14-26.

Hansen, H. E., Woods, C. Q., Boyle, D. K., Bott, M. J., & Taunton, R. L. (1995). Nurse manager personal traits and leadership characteristics. *Nursing Administration Quarterly, 19*(4), 23-35.

Hansmann, K.-M., & Ringle, C. M. (2004). *SmartPLS Manual*. Hamburg: Universitat Hamburg.

Happell, B. (1998a). Comprehensive nursing education: Mission incomplete? *The Australian Electronic Journal of Nursing Education, 4*(1), n. p. Retrieved from http://www.scu.edu.au/schools/nhcp/aejne/archive/vol4-1/bhappellvol4_1.html

Happell, B. (1998b). The implications of legislative change on the future of psychiatric nursing in Victoria. *Australian and New Zealand Journal of Psychiatry, 32*(2), 229-234.

Happell, B. (2008a). Determining the effectiveness of mental health services from a consumer perspective: Part 2: Barriers to recovery and principles for evaluation. *International Journal of Mental Health Nursing, 17*(2), 123-130.

Happell, B. (2008b). The importance of clinical experience for mental health nursing Part 1: Undergraduate nursing students' attitudes, preparedness and satisfaction. *International Journal of Mental Health Nursing, 17*(5), 326-332.

Happell, B. (2009). Appreciating history: The Australian experience of direct-entry mental health nursing education in universities. *International Journal of Mental Health Nursing, 18*(1), 35-41.

Happell, B., Martin, T., & Pinikahana, J. (2003). Burnout and job satisfaction: A comparative study of psychiatric nurses from forensic and a mainstream mental health service. *International Journal of Mental Health Nursing, 12*(1), 39-47.

Happell, B., & Rushworth, L. (1999). Psychiatric nursing: Can education help it become more popular? *The Australian Electronic Journal of Nursing Education, 5*(1). Retrieved from http://www.scu.edu.au/schools/nhcp/aejne/archive/vol5-1/happellbvol5_1.html

Hayman-White, K., Happell, B., & Charleston, R. (2007). Transition to mental health nursing through specialist graduate nurse programs in mental health: A review of the literature. *Issues in Mental Health Nursing, 28*(2), 185-200.

Health & Community Services Union (Victoria Branch). (1999). *Submission to the Scoping Study on Mental Health Nursing in Australia*. Melbourne: Health & Community Services Union.

Higgs, J., Ajjawi, R., McAllister, L., Trede, F., & Loftus, S. (2008). *Communicating in the health sciences* (2nd ed.). South Melbourne: Oxford.

Hodges, V., Sandford, D., & Elzinga, R. (1986). The role of ward structure on nursing staff behaviours: An observational study of three psychiatric wards. *Acta Psychiatrica Scandinavica, 73*(1), 6-11.

Horvath, A. O. (2005). The therapeutic relationship: Research and theory. *Psychotherapy Research, 15*(1-2), 3-7.

Hovenga, E. J. S. (1996). *Patient Assessment and Information System (PAIS)*.Unpublished manuscript, Rockhampton, Australia.

Howgego, I. M., Yellowlees, P., Owen, C., Meldrum, L., & Dark, F. (2003). The therapeutic alliance: The key to effective patient outcome? A descriptive review of the evidence in community mental health case management. *Australian and New Zealand Journal of Psychiatry, 37*(2), 169-183.

Hsu, S.-H., Chen, W.-H., & Hsieh, M.-J. (2006). Robustness testing of PLS, LISREL, EQS and ANN-based SEM for measuring customer satisfaction. *Total Quality Management & Business Excellence, 17*(3), 355-371.

Hughes, E., Wanigaratne, S., Gournay, K., Johnson, S., Thornicroft, G., Finch, E., et al. (2008). Training in dual diagnosis interventions (the COMO Study): Randomised controlled trial. *BMC Psychiatry, 8*(1), 12-21.

Hughes, L. C., Chang, Y., & Mark, B. A. (2009). Quality and strength of patient safety climate on medical-surgical units. *Health Care Management Review, 34*(1), 19-28.

Hummelvoll, J. K. (1996). The nurse-client alliance model. *Perspectives in Psychiatric Care, 32*(4), 12-21.

Hummelvoll, J. K., & Barbosa da Silva, A. (1994). A holistic-existential model for psychiatric nursing. *Perspectives in Psychiatric Care, 30*(2), 7-14.

Humpel, N., & Caputi, P. (2001). Exploring the relationship between work stress, years of experience and emotional competency using a sample of Australian mental health nurses. *Journal of Psychiatric and Mental Health Nursing, 8*(3), 399-403.

Hunot, V., & Rosenbach, A. (1998). Factors influencing the attitudes and commitment of volunteer alcohol counsellors. *British Journal of Guidance and Counselling, 26*(3), 353-364.

Hyrkas, K. (2005). Clinical supervision, burnout, and job satisfaction among mental health and psychiatric nurses in Finland. *Issues in Mental Health Nursing, 26*(5), 531-556.

Hyrkas, K., Appelqvist-Schmidlechner, K., & Haataja, R. (2006). Efficacy of clinical supervision: Influence on job satisfaction, burnout and quality of care. *Journal of Advanced Nursing, 55*(4), 521-535.

Hyrkas, K., Koivula, M., & Paunonen, M. (1999). Clinical supervision in nursing in the 1990's: Current state of concepts, theory and research. *Journal of Nursing Management, 7*(3), 177-187.

Jackson, S., & Stevenson, C. (2000). What do people need psychiatric and mental health nurses for? *Journal of Advanced Nursing, 31*(2), 378-388.

James, D. V., Fineberg, N. A., Shah, A. K., & Priest, R. G. (1990). An increase in violence on an acute psychiatric ward. A study of associated factors. *British Journal of Psychiatry, 156*(6), 846-852.

Jones, M. C., Smith, K., & Johnston, D. W. (2005). Exploring the Michigan model: The relationship of personality, managerial support and organizational structure with health outcomes in entrants to the healthcare environment. *Work & Stress, 19*(1), 1-22.

Joyce, J., & Crookes, P. (2007). Developing a tool to measure 'magnetism' in Australian nursing environments. *Australian Journal of Advanced Nursing, 25*(1), 17-23.

Kane, R. L., Shamliyan, T. A., Mueller, C., Duval, S., & Wilt, T. J. (2007). The association of registered nurse staffing levels and patient outcomes: Systematic review and meta-analysis. *Medical Care, 45*(12), 1195-1204.

Keeves, J. P. (1986). Aspiration, motivation and achievement: Different methods of analysis and different results. *International Journal of Educational Research, 10*(1), 115-243.

Kent, S., & Yellowlees, P. M. (1994). Psychiatric and social reasons for frequent rehospitalisation. *Hospital & Community Psychiatry, 45*(4), 347-350.

Knaus, W. A., Draper, E. A., Wagner, D. P., & Zimmerman, J. E. (1986). An evaluation of outcome from intensive care in major medical centers. *Annals of Internal Medicine, 104*(3), 410-418.

Kramer, M. (1990). The magnet hospitals: Excellence revisited. *Journal of Nursing Administration, 20*(9), 35-44.

Kramer, M., & Hafner, L. P. (1989). Shared values: Impact on staff nurse job satisfaction and perceived productivity. *Nursing Research, 38*(3), 172-177.

Kramer, M., & Schmalenberg, C. (1988). Magnet Hospitals: Institutions of excellence. *Journal of Nursing Administration, 18*(1), 13-24.

Kramer, M., & Schmalenberg, C. (1991a). Job satisfaction and retention insight for the 90's: Part I. *Nursing, 21*(3), 50-55.

Kramer, M., & Schmalenberg, C. (1991b). Job satisfaction and retention insight for the 90's: Part II. *Nursing, 21*(4), 51-55.

Kramer, M., & Schmalenberg, C. (2004). Essentials of a magnetic work environment: Part 2. *Nursing, 34*(7), 44-47.

Kramer, M., Schmalenberg, C., & Maguire, P. (2004). Essentials of a magnetic work environment: Part 4. *Nursing, 34*(9), 44-46.

Lake, E. T. (2002). Development of the Practice Environment Scale of the Nursing Work Index. *Research in Nursing & Health, 25*(3), 176-188.

Lake, E. T., & Friese, C. R. (2006). Variations in nursing practice environments: Relation to staffing and hospital characteristics. *Nursing Research, 55*(1), 1-9.

Lankshear, A. J., Sheldon, T. A., & Maynard, A. (2005). Nurse staffing and healthcare outcomes: A systematic review of the international research evidence. *Advances in Nursing Science, 28*(2), 163-174.

Laschinger, H. K. S., Finegan, J., Shamian, J., & Wilk, P. (2004). A longitudinal analysis of the impact of workplace empowerment on work satisfaction. *Journal of Organizational Behavior, 25*(4), 527-545.

Laschinger, H. K. S., Finegan, J., & Wilk, P. (2009). Context matters: The impact of unit leadership and empowerment on nurses' organizational commitment. *Journal of Nursing Administration, 39*(5), 228-235.

Laschinger, H. K. S., & Leiter, M. P. (2006). The impact of nursing work environments on patient safety outcomes: The mediating role of burnout/engagement. *Journal of Nursing Administration, 36*(5), 259-267.

Lauder, W., Reynolds, W., Reilly, V., & Angus, N. J. (2000). The development and testing of the Mental Health Problems Perception Questionnaire. *Journal of Psychiatric and Mental Health Nursing, 7*(3), 221-226.

Lauder, W., Reynolds, W., Reilly, V., & Angus, N. J. (2001). The role of district nurses in caring for people with mental health problems who live in rural settings. *Journal of Clinical Nursing, 10*(3), 337-344.

Lauder, W., Reynolds, W., Smith, A., & Sharkey, S. (2002). A comparison of therapeutic commitment, role support, role competency and empathy in three cohorts of nursing students. *Journal of Psychiatric and Mental Health Nursing, 9*(4), 483-492.

Lawler, J. (1991). *Behind the Screens: Nursing, Somology, and the Problem of the Body*. Melbourne: Churchill Livingstone.

Leiter, M. P., & Laschinger, H. K. S. (2006). Relationships of work and practice environment to professional burnout: Testing a causal model. *Nursing Research, 55*(2), 137-146.

Li, Y.-F., Lake, E. T., Sales, A. E., Sharp, N. D., Greiner, G. T., Lowy, E., et al. (2007). Measuring nurses' practice environments with the Revised Nursing Work Index: Evidence from registered nurses in the Veterans Health Administration. *Research in Nursing & Health, 30*(1), 31-44.

Lightfoot, P. J. C., & Orford, J. (1986). Helping agents' attitudes towards alcohol-related problems: situations vacant? A test and elaboration of a model. *British Journal of Addiction, 81*(6), 749-756.

Lings, I., & Owen, K. (2007). Buying a sponsor's brand: the role of affective commitment to the sponsored team. *Journal of Marketing Management, 23*(5/6), 483-496.

Lohmoeller, J.-B. (1988). The PLS program system: Latent variable path analysis with partial least squares estimation. *Multivariate Behavioral Research, 23*(1), 125-127.

Malyn Haw, C., Dickens, G., & Stubbs, J. (2005). A review of medication administration errors reported in a large psychiatric hospital in the United Kingdom. *Psychiatric Services, 56*(12), 1610-1613.

Mandy, A., Milton, C., & Mandy, P. (2004). Professional stereotyping and interprofessional education. *Learning in Health and Social Care, 3*(3), 154-170.

Manojlovich, M. (2005). Linking the practice environment to nurses' job satisfaction through nurse-physician communication. *Journal of Nursing Scholarship, 37*(4), 367-373.

Manojlovich, M., & Laschinger, H. K. S. (2007). The nursing worklife model: Extending and refining a new theory. *Journal of Nursing Management, 15*(3), 256-263.

Marcoulides, G. A., Chin, W. W., & Saunders, C. (2009). A critical look at partial least squares modeling. *MIS Quarterly, 33*(1), 171-175.

Marcoulides, G. A., & Saunders, C. (2006). PLS: A silver bullet? *MIS Quarterly, 30*(2), iii-ix.

Martin, D. J., Garske, J. P., & Davis, M. K. (2000). Relation of the therapeutic alliance with outcome and other variables: A meta-analytic review. *Journal of Consulting and Clinical Psychology, 68*(3), 438-450.

Martin, T. (1992). Psychiatric nurses' use of working time. *Nursing Standard, 6*(37), 34-36.

Maruyama, G. M. (1998). *Basics of structural equation modeling*. Thousand Oaks, California: Sage.

Maslach, C., Jackson, S. E., & Leiter, M. P. (1986). *Maslach Burnout Inventory* (3rd ed.). Palo Alto, California: Consulting Psychologists Press.

Mason, T., Coyle, D., & Lovell, A. (2008a). Forensic psychiatric nursing: skills and competencies: II clinical aspects. *Journal of Psychiatric and Mental Health Nursing, 15*(2), 131-139.

Mason, T., Lovell, A., & Coyle, D. (2008b). Forensic psychiatric nursing: skills and competencies: I role dimensions. *Journal of Psychiatric and Mental Health Nursing, 15*(2), 118-130.

Mathers, C. D., Vos, E. T., Stevenson, C. E., & Begg, S. J. (2001). The burden of disease and injury in Australia. *Bulletin of the World Health Organization, 79*(11), 1076-1084.

McCabe, R., & Priebe, S. (2004). The therapeutic relationship in the treatment of severe mental illness: A review of methods and findings. *International Journal of Social Psychiatry, 50*(2), 115-128.

McCabe, T. J., & Garavan, T. N. (2008). A study of the drivers of commitment amongst nurses: The salience of training, development and career issues. *Journal of European Industrial Training, 32*(7), 528-568.

McCann, T. V., Lu, S., & Berryman, C. (2009). Mental health literacy of Australian Bachelor of Nursing students: A longitudinal study. *Journal of Psychiatric and Mental Health Nursing, 16*(1), 61-67.

McCloskey, B. A., & Diers, D. K. (2005). Effects of New Zealand's health reengineering on nursing and patient outcomes. *Medical Care, 43*(11), 1140-1146.

McClure, M., & Hinshaw, A. S. (Eds.). (2002). *Magnet Hospitals Revisited: Attraction and Retention of Professional Nurses*. Washington DC: American Nurses Publishing.

McClure, M., Poulin, M., Sovie, M. D., & Wandelt, M. (1983). *Magnet hospitals: Attraction and Retention of Professional Nurses*. Kansas City: American Academy of Nursing.

McGillis-Hall, L. (1997). Staff mix models: Complementary or substitution roles for nurses. *Nursing Administration Quarterly, 21*(2), 31-39.

McGillis-Hall, L., & Doran, D. I. (2004). Nurse staffing, care delivery model, and patient care quality. *Journal of Nursing Care Quality, 19*(1), 27-33.

McGillis-Hall, L., Doran, D. I., Baker, G. R., Pink, G. H., Sidani, S., O'Brien-Pallas, L. L., et al. (2001). *Impact of Nursing Staff Mix Models and Organizational Change Strategies on Patient, System, and Nurse Outcomes*. Toronto: University of Toronto.

McGillis-Hall, L., Doran, D. I., & Pink, G. H. (2004). Nurse staffing models, nursing hours, and patient safety outcomes. *Journal of Nursing Administration, 34*(1), 41-45.

McNeese-Smith, D. (1997). The influence of manager behavior on nurses' job satisfaction, productivity, and commitment. *Journal of Nursing Administration, 27*(9), 47-55.

McNeese-Smith, D. (1999). The relationship between managerial motivation, leadership, nurse outcomes and patient satisfaction. *Journal of Organizational Behavior, 20*(2), 243-259.

Mental Health Council of Australia. (2005). *Not For Service: Experiences of Injustice and Despair in Mental Health Care in Australia*. Canberra: MHCA.

Mental Health Nurse Education Taskforce. (2008). *Mental Health in Pre-Registration Nursing Courses*. Melbourne: Mental Health Workforce Advisory Committee.

Microsoft Corporation. (2003). Microsoft Office Access 2003 (Version 11.6355.6360 SP1). Redmond: Microsoft Corporation.

Middleton, S., Griffiths, R., Fernandez, R., & Smith, B. (2008). Nursing practice environment: How does one Australian hospital compare with magnet hospitals? *International Journal of Nursing Practice, 14*(5), 366-372.

Montgomery, P., Rose, D., & Carter, L. (2009). Patient health outcomes in psychiatric mental health nursing. *Journal of Psychiatric and Mental Health Nursing, 16*(1), 32-45.

Moore, M., Shaw, J., Grant, B., & Braddock, D. (2000). *Institutional mental health services in Australia 1997-98: First report on the National Minimum Data Set-institutional mental health care* (No. HSE 7). Canberra: AIHW.

Moores, T. T., Char-Jang Chang, J., & Smith, D. K. (2006). Clarifying the role of sefl-efficacy and metacognition as predictors of performance: Construct development and test. *The DATA BASE for Advances in Information Systems, 37*(2/3), 125-132.

Morant, N. (2006). Social representations and professional knowledge: The representation of mental illness among mental health practitioners. *British Journal of Social Psychology, 45*(4), 817-838.

Moyle, W. (2003). Nurse-patient relationship: A dichotomy of expectations. *International Journal of Mental Health Nursing, 12*(2), 103-110.

Mullen, A. (2009). Mental health nurses establishing psychosocial interventions within acute inpatient settings. *International Journal of Mental Health Nursing, 18*(2), 83-90.

National Health and Medical Research Council. (1999). *National Statement on Ethical Conduct in Research Involving Humans*. Canberra: AusInfo.

National Mental Health Education and Training Advisory Group. (2002). *National Practice Standards for the Mental Health Workforce*. Canberra: Department of Health and Ageing.

National Quality Forum. (2004). *National Voluntary Consensus Standards for Nursing-sensitive Care: An Initial Performance Measure Set - a Consensus Report*. Washington: NQF.

Needleman, J., Buerhaus, P., Mattke, S., Stewart, M., & Zelevinsky, K. (2002). Nurse-staffing levels and the quality of care in hospitals. *New England Journal of Medicine, 346*(22), 1715-1722.

Needleman, J., Buerhaus, P. I., Mattke, S., Stewart, M., & Zelevinsky, K. (2001). *Nurse Staffing and Patient Outcomes in Hospitals*. Boston: Harvard School of Public Health.

Nolan, P., Haque, S., & Doran, M. (2007). A comparative cross-sectional questionnaire survey of the work of UK and US mental health nurses. *International Journal of Nursing Studies, 44*(3), 377-385.

Norcross, J. C. (2001). Purposes, processes and products of the task force on empirically supported therapy relationships. *Psychotherapy: Theory, Research, Practice, Training, 38*(4), 345-356.

NSW Health. (1998). *Caring for Mental Health: A Framework for Mental Health Care in NSW* (No. State Health Publication No. (CMH) 980153). Sydney: NSW Department of Health.

NSW Health. (2005). *The NSW Government's Plan for Mental Health Services*. Sydney: NSW Department of Health.

NSW Health. (2007). Cost of Care Standards 2006/2007. Retrieved from http://www.health.nsw.gov.au/policies/gl/2007/GL2007_021.html

NSW Health. (2009). St George Mental Health Services: Inpatient Unit. Retrieved 5th February, 2009, from http://www.sesiahs.health.nsw.gov.au/Mental_Health_Services/About_our_services/St_George_Mental_Health_Services/InpatientUnit.asp

NSW Labour Economics Office. (2008). Registered Mental Health Nurse, NSW. *Health Professions Occupational Reports* Retrieved 27 January, 2009, from http://www.workplace.gov.au/workplace/Publications/LabourMarketAnalysis/SkillShortages/OccupationalReports/HealthProfessions.htm

NSW Legislative Council Select Committee on Mental Health. (2002). *Inquiry into mental health services in New South Wales: final report* (No. 368). Sydney: New South Wales Parliament.

NSW Mental Health Sentinel Events Review Committee. (2003). *Tracking Tragedy: A Systemic Look at Suicides and Homicides Amongst Mental Health Patients. First report of the Committee*. North Sydney: NSW Centre for Mental Health.

NSW Mental Health Sentinel Events Review Committee. (2005). *Tracking Tragedy 2004: A Systemic Look at Homicide by Mental Health Patients and Suicide Death of Patients Recently Discharged from Mental Health Inpatient Units. Second report of the Committee*. North Sydney: NSW Centre for Mental Health.

Nurses Board of Victoria. (2002). *Review Of Mental Health/Psychiatric Nursing Component Of The Undergraduate Nursing Program - Discussion Paper July 2002*. Melbourne: Nurses Board of Victoria.

O'Brien-Pallas, L. L., Doran, D. I., Murray, M., Cockerill, R., Sidani, S., Laurie-Shaw, B., et al. (2002). Evaluation of a client care delivery model, part 2: Variability in client outcomes in community home nursing. *Nursing Economic$, 20*(1), 13-21.

O'Brien-Pallas, L. L., Thomson, D., McGillis-Hall, L., Pink, G. H., Kerr, M., Wang, S., et al. (2004). *Evidence-based Standards for Measuring Nurse Staffing and Performance*: Canadian Health Services Research Foundation.

O'Brien, A. J. (2001). The therapeutic relationship: Historical development and contemporary significance. *Journal of Psychiatric and Mental Health Nursing, 8*(2), 129-137.

Oakley-Browne, M., Lee, A., & Prabhu, R. (2007). Self-reported confidence and skills of general practitioners in management of mental health disorders. *Australian Journal of Rural Health, 15*(5), 321-326.

Olofsson, B., Bengtsson, C., & Brink, E. (2003). Absence of response: A study of nurses' experience of stress in the workplace. *Journal of Nursing Management, 11*(5), 351-358.

Pagnini, D. (2005). *Review of the NSW Mental Health Nursing Enhancement Program*. North Sydney: NSW Health.

Parrish, E., Peden, A., & Staten, R. (2008). Strategies used by advanced practice psychiatric nurses in treating adults with depression. *Perspectives in Psychiatric Care, 44*(4), 232-240.

Peplau, H. (1989). Theory: The professional dimension. In A. W. O'Toole & S. R. Welt (Eds.), *Interpersonal theory in nursing practice: Selected works of Hildegard Peplau*. New York: Springer.

Peplau, H. (1992). Interpersonal relations: A theoretical framework for application in nursing practice. *Nursing Science Quarterly, 5*(1), 13-18.

Peplau, H. (1997). Peplau's theory of interpersonal relations. *Nursing Science Quarterly, 10*(4), 162-167.

Pirkis, J., Burgess, P., Coombs, T., Clarke, A., Jones-Ellis, D., & Dickson, R. (2005). Routine measurement of outcomes in Australia's public sector mental health services. *Australia and New Zealand Health Policy, 2*(1), 8-14.

Pitkänen, A., Hätönen, H., Kuosmanen, L., & Välimäki, M. (2008). Patients' descriptions of nursing interventions supporting quality of life in acute psychiatric wards: A qualitative study. *International Journal of Nursing Studies, 45*(11), 1598-1606.

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*(5), 879-903.

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 and Council for Education and Training in Youth and Community Work.

Productivity Commission. (2005). *Australia's Health Workforce*. Canberra: Commonwealth of Australia.

Qureshi, I., & Compeau, D. (2009). Assessing between-group differences in information systems research: A comparison of covariance- and component-based SEM. *MIS Quarterly, 33*(1), 197-214.

Rafferty, A. M., Clarke, S. P., Coles, J., Ball, J., James, P., McKee, M., et al. (2007). Outcomes of variation in hospital nurse staffing in English hospitals: Cross-sectional analysis of survey data and discharge records. *International Journal of Nursing Studies, 44*(2), 175-182.

Reynolds, W. J., & Scott, B. (2000). Do nurses and other professional helpers normally display much empathy? *Journal of Advanced Nursing, 31*(1), 226.

Rimar, J. M., & Diers, D. K. (2006). Inpatient nursing unit volume, length of stay, cost, and mortality. *Nursing Economic$, 24*(6), 298-307.

Ringle, C. M., Wende, S., & Will, S. (2005). SmartPLS (Version 2.0 (M3) Beta). Hamburg

Ritter, A., Bowden, S., Murray, T., Ross, P., Greeley, J., & Pead, J. (2002). The influence of the therapeutic relationship in treatment for alcohol dependency. *Drug & Alcohol Review, 21*(3), 261-268.

Roche, J., Morsi, D., & Chandler, G. E. (2009). Testing a work empowerment-work relationship model to explain expertise in experienced acute care nurses. *Journal of Nursing Administration, 39*(3), 115-122.

Roche, M. A., & Duffield, C. M. (2007). Issues and challenges in the mental health workforce development. *Contemporary Nurse, 25*(1-2), 94-103.

Rogers, C. (1957). The necessary and sufficient conditions of therapeutic personality change. *Journal of Consulting Psychology, 21*, 95-103.

Rosen, A. (2001). New roles for old: the role of the psychiatrist in the interdisciplinary team. *Australasian Psychiatry, 9*(2), 133-137.

Rosen, A., & Callaly, T. (2005). Interdisciplinary teamwork and leadership: issues for psychiatrists. *Australasian Psychiatry, 13*(3), 234-240.

Rungapadiachy, D. M., Madill, A., & Gough, B. (2006). How newly qualified mental health nurses perceive their role. *Journal of Psychiatric and Mental Health Nursing, 13*(5), 533-542.

Rushworth, L., & Happell, B. (2000). 'Psychiatric nursing was great, but I want to be a "real" nurse': Is psychiatric nursing a realistic choice for nursing students? *Australian and New Zealand Journal of Mental Health Nursing, 9*, 128-137.

Rydon, S. E. (2005). The attitudes, knowledge and skills needed in mental health nurses: The perspective of users of mental health services. *International Journal of Mental Health Nursing, 14*(2), 78-87.

Ryrie, I., Agunbiade, D., Brannock, L., & Maris-Shaw, A. (1998). A survey of psychiatric nursing practice in two inner city acute admission wards. *Journal of Advanced Nursing, 27*, 848-854.

Salzmann-Erikson, M., Lützén, K., Ivarsson, A., & Eriksson, H. (2009). The core characteristics and nursing care activities in psychiatric intensive care units in Sweden. *International Journal of Mental Health Nursing, 17*(2), 98-107.

Sandford, D. A., Elzinga, R. H., & Iversen, R. (1990). A quantitative study of nursing staff interactions in psychiatric wards. *Acta Psychiatrica Scandinavica, 81*(1), 46.

SANE Australia. (2007). Research bulletin 4: Stigma and mental illness. South Melbourne, Victoria: SANE Australia.

Sasichay-Akkadechanunt, T., Scalzi, C. C., & Jawad, A. F. (2003). The Relationship Between Nurse Staffing and Patient Outcomes. *Journal of Nursing Administration, 33*(9), 478-485.

Scanlon, A. (2006). Psychiatric nurses perceptions of the constituents of the therapeutic relationship: A grounded theory study. *Journal of Psychiatric and Mental Health Nursing, 13*(3), 319-329.

Schmalenberg, C., & Kramer, M. (2008). Essentials of a productive nurse work environment. *Nursing Research, 57*(1), 2-13.

Sellin, N. (1995). Partial least squares modeling in research on educational achievement. In W. Bos & R. H. Lehmann (Eds.), *Reflections on Educational Achievement: Papers in Honour of T. Neville Postlethwaite* (pp. 256-267). New York: Waxmann Munster.

Senate Community Affairs References Committee. (2002). *The Patient Profession: Time for Action. Report on the Inquiry into Nursing*. Canberra: Commonwealth of Australia.

Sensky, T., Turkington, D., Kingdon, D., Scott, J. L., Scott, J., Siddle, R., et al. (2000). A randomized controlled trial of cognitive-behavioral therapy for persistent symptoms in schizophrenia resistant to medication. *Archives of General Psychiatry, 57*(2), 165-172.

Severinsson, E., & Hummelvoll, J. K. (2001). Factors influencing job satisfaction and ethical dilemmas in acute psychiatric care. *Nursing and Health Sciences, 3*, 81-90.

Severinsson, E. I., & Kamaker, D. (1999). Clinical nursing supervision in the workplace: effects on moral stress and job satisfaction. *Journal of Nursing Management, 7*(2), 81-90.

Shaw, S., Cartwright, A. K. J., Spratley, T., & Harwin, J. (1978). *Responding to drinking problems*. London: Croom Helm.

Shullanberger, G. (2000). Nurse staffing decisions: an integrated review of the literature. *Nursing Economic$, 18*(3), 124-148.

Slade, M., Rosen, A., & Shankar, R. (1995). Multidisciplinary mental health teams. *International Journal of Social Psychiatry, 41*(3), 180-189.

Sleutel, M. (2000). Climate, culture, context, or work environment?: Organizational factors that influence nursing practice. *Journal of Nursing Administration, 30*(2), 53-58.

Smith, G. M., Davis, R. H., & Bixler, E. O. (2005). Pennsylvania state hospital system's seclusion and restraint reduction program. *Psychiatric Services, 56*(9), 1115-1122.

Sochalski, J., Aiken, L. H., Rafferty, A. M., Shamian, J., Muller-Mundt, G., Hunt, J., et al. (1998). Building multinational research. *Reflections, 24*(3), 20-23.

Sochalski, J., Estabrooks, C. A., & Humphrey, C. K. (1999). Nurse staffing and patient outcomes: evolution of an international study. *Canadian Journal of Nursing Research, 31*(3), 69-88.

SPSS Inc. (2006). SPSS for Windows (Version 15.0.0). Chicago: SPSS Inc.

Stevens, J. A., & Dulhunty, G. M. (1992). New South Wales Nursing Students' attitudes towards a career in mental health. *Australian Journal of Mental Health Nursing, 2*, 59-64.

Stevens, J. A., & Dulhunty, G. M. (1997). A career with mentally ill people: An unlikely destination for graduates of pre-registration nursing programs. *The Australian Electronic Journal of Nursing Education, 3*(1).

Stockmann, C. (2005). A literature review of the progress of the psychiatric nurse-patient relationship as described by Peplau. *Issues in Mental Health Nursing, 26*, 911-919.

Strang, J., McCambridge, J., Platts, S., & Groves, P. (2004). Pilot study of change-oriented reflective listening (CORL). *Family Practice, 21*(2), 150-154.

Stuhlmiller, C. (2005). Rethinking mental health nursing education in Australia: A case for direct entry. *International Journal of Mental Health Nursing, 14*(3), 156-160.

Suominen, T., Savikko, N., Puukka, P., Doran, D. I., & Leino-Kilpi, H. (2005). Work empowerment as experienced by head nurses. *Journal of Nursing Management, 13*(2), 147-153.

Swearingen, S., & Liberman, A. (2004). Nursing generations: an expanded look at the emergence of conflict and its resolution. *Health Care Manager, 23*(1), 54-64.

Teasdale, K., Brocklehurst, N., & Thom, N. (2001). Clinical supervision and support for nurses: an evaluation study. *Journal of Advanced Nursing, 33*(2), 216-224.

Tenenhaus, M., Esposito-Vinzi, V., Chaetlin, Y.-M., & Lauro, C. (2005). PLS path modeling. *Computational Statistics and Data Analysis, 48*, 159-205.

Tervo-Heikkinen, T., Partanen, P., Aalto, P., & Vehviläinen-Julkunen, K. (2008). Nurses' work environment and nursing outcomes: A survey study among Finnish university hospital registered nurses. *International Journal of Nursing Practice, 14*(5), 357-365.

The Royal Australian and New Zealand College of Psychiatrists. (2005). Submission to the Productivity Commission on Health Workforce. Retrieved 21 December 2005, from http://www.ranzcp.org/pdffiles/submissions/health%20workforce.pdf

Tilley, S. (1999). Altschul's legacy in mediating British and American psychiatric nursing discourses: Common sense and the 'absence' of the accountable practitioner. *Journal of Psychiatric and Mental Health Nursing, 6*(4), 283-295.

Todd, F. C., Sellman, J. D., & Robertson, P. J. (2002). Barriers to optimal care for patients with coexisting substance use and mental health disorders. *Australian and New Zealand Journal of Psychiatry, 36*(6), 792-799.

Tourangeau, A. E., Doran, D. I., Pringle, D., O'Brien-Pallas, L. L., McGillis-Hall, L., Tu, J., et al. (2006). *Nurse Staffing and Work Environments: Relationships with Hospital Level Outcomes*. Toronto: Canadian Health Services Research Foundation.

Tourangeau, A. E., Giovannetti, P., Tu, J. V., & Wood, M. (2002). Nursing-related determinants of 30-day mortality for hospitalized patients. *Canadian Journal of Nursing Research, 33*(4), 71-88.

Trend Care Systems Pty Ltd. (2004). Product Overview. Retrieved 15th June, 2004, from http://www.trendcare.com.au/product_overview.html

Tummers, G. E., Houkes, I., Janssen, P. P., & Landeweerd, A. (2001). A comparative study of work characteristics and reactions between general and mental health nurses: A multi-sample analysis. *Journal of Advanced Nursing, 36*(1), 151-162.

Turkington, D., Sensky, T., Scott, J., Barnes, T. R. E., Nur, U., Siddle, R., et al. (2008). A randomized controlled trial of cognitive-behavior therapy for persistent symptoms in schizophrenia: A five-year follow-up. *Schizophrenia Research, 98*(1-3), 1-7.

Tyson, G. A., Lambert, W. G., & Beattie, L. (1995). The quality of psychiatric nurses' interactions with patients: An observational study. *International Journal of Nursing Studies, 32*(1), 49-58.

Unruh, L. (2003). Licensed nurse staffing and adverse events in hospitals. *Medical Care, 41*(4), 142-152.

Unruh, L., & Fottler, M. (2006). Patient turnover and nursing staff adequacy. *Health Services Research, 41*(3), 601-612.

Upenieks, V. V. (2003a). The interrelationship of organizational characteristics of magnet hospitals, nursing leadership, and nursing job satisfaction. *Health Care Manager, 22*(2), 83-98.

Upenieks, V. V. (2003b). What's the attraction to magnet hospitals? *Nursing Management, 34*(2), 43-44.

Vahey, D. C., Aiken, L. H., Sloane, D. M., Clarke, S. P., & Vargas, D. (2004). Nurse burnout and patient satisfaction. *Medical Care, 42*(2), 57-67.

Van Bogaert, P., Clarke, S. P., Vermeyen, K., Meulemans, H., & Van de Heyning, P. (2009). Practice environments and their associations with nurse-reported outcomes in Belgian hospitals: Development and preliminary validation of a Dutch adaptation of the Revised Nursing Work Index. *International Journal of Nursing Studies, 46*(1), 55-65.

Van den Heede, K., Clarke, S. P., Sermeus, W., Vleugels, A., & Aiken, L. H. (2007). International experts' perspectives on the state of the nurse staffing and patient outcomes literature. *Journal of Nursing Scholarship, 39*(4), 290-297.

Vaughan, K., McConaghy, N., Wolf, C., Myhr, C., & Black, T. (2000). Community Treatment Orders: Relationship to clinical care, medication compliance, behavioural disturbance and readmission. *Australian and New Zealand Journal of Psychiatry, 34*(5), 801.

Victoria Department of Human Services. (2001). *Nurse Recruitment and Retention Committee Final Report*. Melbourne: Victorian Department of Human Services.

Waite, R. (2006). The psychiatric educational experiences of advance beginner RNs. *Nurse Education Today, 26*(2), 131-138.

Walker, F. (2003). *Out of the Darkness and into the Light.* Paper presented at the May 2003 Schizophrenia Fellowship of NSW Symposium: Out of the Darkness, into the Light or is it too Hard?, Sydney.

Wampold, B. E., & Brown, G. S. (2005). Estimating variability in outcomes attributable to therapists: A naturalistic study of outcomes in managed care. *Journal of Consulting and Clinical Psychology, 73*(5), 914–923.

Watson, H., Maclaren, W., & Kerr, S. (2006). Staff attitudes towards working with drug users: Development of the drug problems perceptions questionnaire. *Addiction, 102*(2), 206-215.

Watson, H., Maclaren, W., Shaw, F., & Nolan, A. (2003). *Measuring Staff Attitudes to People with Drug Problems: The Development of a Tool*. Glasgow: Scottish Executive Drug Misuse Research Programme.

Welch, M. (2005). Pivotal moments in the therapeutic relationship. *International Journal of Mental Health Nursing, 14*(3), 161-165.

Werts, C. E., Linn, R. L., & Joreskog, K. G. (1974). Intraclass reliability estimates: Testing structural assumptions. *Educational and Psychological Measurement, 34*(1), 25-33.

White, E., Butterworth, T., Bishop, V., Carson, J., Jeacock, J., & Clements, A. (1998). Clinical supervision: Insider reports of a private world. *Journal of Advanced Nursing, 28*(1), 185-192

White, E., & Roche, M. A. (2006). A selective review of mental health nursing in New South Wales, Australia, in relation to clinical supervision. *International Journal of Mental Health Nursing, 15*(3), 209-219.

White, E., & Winstanley, J. (2006). Cost and resource implications of clinical supervision in nursing: An Australian perspective. *Journal of Nursing Management, 14*(8), 628-636.

Whittington, R., & McLaughlin, C. (2000). Finding time for patients: an exploration of nurses' time allocation in an acute psychiatric setting. *Journal of Psychiatric and Mental Health Nursing, 7*(3), 259-268.

Whittington, R., & Wykes, T. (1992). Staff strain and social support in a psychiatric hospital following assault by a patient. *Journal of Advanced Nursing, 17*(4), 480-486.

Whittington, R., & Wykes, T. (1994a). An observational study of associations between nurse behaviour and violence in psychiatric hospitals. *Journal of Psychiatric and Mental Health Nursing, 1*(2), 85-92.

Whittington, R., & Wykes, T. (1994b). Violence in psychiatric hospitals: are certain staff prone to being assaulted? *Journal of Advanced Nursing, 19*(2), 219-225.

Wierdsma, A., Mulder, C., de Vries, S., & Sytema, S. (2009). Reconstructing continuity of care in mental health services: A multilevel conceptual framework. *Journal of Health Services Research & Policy, 14*(1), 52-57.

Wiktionary. (2008). A wiki-based open content dictionary. Retrieved 1st July, 2008, from http://en.wiktionary.org/wiki

Williams, E. S., Konrad, T. R., Linzer, M., McMurray, J., Pathman, D. E., Gerrity, M., et al. (2002). Physician, practice, and patient characteristics related to primary care physician physical and mental health: Results from the physician worklife study. *Health Services Research, 37*(1), 119-141.

Wilson, H. S. (1989). *Research in Nursing*. Redwood City, California: Addison-Wesley.

Winstanley, J. (2000). Manchester Clinical Supervision Scale©. *Nursing Standard, 14*(19), 31-32.

Winstanley, J. (2001). Developing methods for the evaluation of clinical supervision. In J. R. Cutcliffe, T. Butterworth & B. Proctor (Eds.), *Fundamental Themes in Clinical Supervision*. London: Routledge.

Winstanley, J., & White, E. (2003). Clinical supervision: Models, measures and best practice. *Nurse Researcher, 10*(4), 7-38.

Wold, H. (1975). Path models with latent variables. The NIPALS approach. In H. M. Blalock (Ed.), *Quantitative Sociology* (pp. 307-357). New York: Seminar Press.

Wong, Y. K. (2006). *Modern Software Review: Techniques and Technologies*. Hershey, USA: IRM Press.

World Health Organisation. (2003). *Investing in Mental Health*. Geneva: WHO.

World Health Organisation. (2008). *The Global Burden of Disease: 2004 update*. Geneva: WHO.

Wynaden, D., Orb, A., McGowan, S., & Downie, J. (2000). Are universities preparing nurses to meet the challenges posed by the Australian mental health care system? *Australian and New Zealand Journal of Mental Health Nursing, 9*(3), 138-146.

Yegdich, T. (1999). Clinical supervision and managerial supervision: Some historical and conceptual considerations. *Journal of Advanced Nursing, 30*(5), 1195-1204.

Yegdich, T., & Cushing, A. (1998). An historical perspective on clinical supervision. *Australian and New Zealand Journal of Mental Health Nursing, 7*(1), 3-24.